Breathing New Life - 6th IPCRG World Conference
Edinburgh 2012, Wednesday 25th - Saturday 28th April 2012

227 Abstracts arranged in order of session

S1 Patient perspectives, Thursday 26 April 2012 11.00-12.30 in Tinto

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260: Events in the lifetime of COPD that could 'trigger' holistic assessment: a qualitative study

Cawley D, Billings J, Oliver D, Kendall M, Pinnock H.
Centre For Professional Practice, University of Kent, Canterbury, UK

Aim: Prognostic uncertainty and the lifelong trajectory of COPD makes identification of a transition point to palliative care difficult. We aimed to explore within the narrative accounts of COPD patients and their care givers (both formal and informal), if there are 'events' that could act as potential triggers for the holistic assessment of their supportive and palliative care needs .Triggers were defined as events that were visible, clearly defined, meaningful and actionable.
Method: Secondary thematic analysis of transcripts from the 'Breath of Fresh Air' study (Pinnock et al., BMJ 2011;342:d142) to identify candidate 'events' for consideration as triggers. 'Events' occurring throughout the individual's account of their COPD journey were identified and aligned with the accounts from their carers (formal and informal), before being organised into broader categories that had the attributes of a trigger.
Results: The 92 transcripts derived from 21 patients, 11 family carers and 16 professionals. Initially 27 events were identified, and grouped into 8 categories as potential 'candidate triggers'. Four were specific events: requesting a 'disabled parking badge', requiring home adaptations, hospital admissions, failure to attend an appointment. Four were circumstances which had developed more gradually: increasing burden of disease, housebound, shifting priorities of care and increasing carer burden.
Conclusion: A range of meaningful events punctuate the lifelong history of COPD. The 8 candidate 'triggers' will guide further exploration of the feasibility of adopting the approach of using 'triggers' to facilitate the holistic assessment of people with severe COPD and their carers.
Conflict of interest and funding: None declared.
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262: Prioritising 'events' that could trigger holistic assessment of people with severe COPD and their carers: a consensus exercise

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Aim: Eight potential 'triggers' (requesting a 'disabled parking badge', home adaptations, hospital admissions, increasing burden of disease, housebound, failure to attend an appointment, shifting priorities of care, increasing carer burden) had been identified as important to interviews with patients with severe COPD and their informal and professional carers. We aimed to prioritise the events from a multi-disciplinary professional perspective as potential triggers of an holistic assessment.
Method: A purposive sample of health and social care professionals were recruited to a professional advisory group. This group convened for a consensus meeting using a nominal group technique. The group 'rated' (0-10) each of the suggested candidate 'triggers', with subsequent 'ratings' informed by group discussion and debate. Informed by the group's median scores, participants at the end of the meeting, rated the most likely candidate 'triggers' for holistic assessment. We defined consensus as 75% agreement for median scores of 8 or above

Results: 12 health and social care professionals were included in the consensus meeting analysis. 3 candidate triggers reached consensus: requesting home adaptations, hospital admissions and being housebound. Discussions highlighted the need for the attributes of a trigger to be clearly defined for all professionals involved and across all settings. Triggers should be visible to patient/carer/health or social care professional, clearly defined, meaningful to all stakeholders involved and actionable (i.e. amenable to an intervention).
Conclusion: The three prioritised candidate events need to be explored with COPD patients and their carers, to understand their acceptability, feasibility, and relevance in triggering quality supportive care for people with severe COPD and carers.
Conflict of interest and funding: None declared.
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259: Predictors of exacerbations of asthma and COPD during one year
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Aim: The aim of the study was to investigate the incidence of exacerbations in primary care during one year and to identify risk factors for such events.
Method: The study was carried out at seven general practice offices in Norway. Among 18931 patients listed at these offices aged 40 years or more, 1784 (9.4%) had been registered with a diagnosis of asthma or COPD (or both) during the previous five years. Out of these patients a random sample of 1111 patients was invited for several measurements including spirometry. Subsequently, participants were asked to consult their GP during exacerbations the following 12 months. The participants also answered a questionnaire on exacerbations during the same period. We determined the frequency of exacerbations per year and how the exacerbations were associated with relevant predictors.
Results: Out of 376 patients who were included and observed during 1 year follow up, 159 (42.3%) experienced one exacerbation or more. This was the case for 45.1% of the women and 37.8% of the men. Exacerbations were more frequently registered in those aged 65 years or more (50%) than among younger patients (37.1%), p=0.01. Patients who had been treated with antibiotics and/or corticosteroids due to an exacerbation the year before baseline (n=95), had a higher risk of getting an exacerbation during the subsequent year (71.6% compared to 32.6% among the remaining patients ($p<0.001$)). The frequency of exacerbations was not significantly associated with GOLD stage and smoking status.
Conclusion: The study confirms what has been reported from secondary care that previous exacerbations strongly predict future exacerbations. Surprisingly, exacerbations could not be predicted by GOLD stage.
Conflict of interest and funding: none
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318: Respiratory symptoms in preschool children: outcome at school age
Schokker S, Mulder JHW, Duiverman EJ, De Vries TW, Vaessen-Verberne AAPH, Van der Molen T
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Aim: Diagnosis in preschool children with symptoms like wheeze, cough and shortness of breath (sob) is still a challenge. Therefore, we developed a questionnaire for distinguishing children with persistent symptoms from children with transient symptoms at preschool age. This study aims to determine the outcome at school age in children with respiratory symptoms at preschool age and to determine the predictive value of this questionnaire.
Method: Children with symptoms suggestive of asthma at young age are reinvestigated at school age. The cohort of children consists of 200 participants (mean age 3.0 yrs, 66% boys) enrolled in two clinical trials evaluating the effectiveness of asthma medication. Parents of these children filled out the diagnostic questionnaire at preschool age. Follow-up data at school age are collected using the

ISAAC-questionnaire.
Results: Data were collected in 123 children (age 11.5 ±1.3 yrs., 68% boys). Parents reported symptoms in the past 12 months in 50 children (16 wheeze and sob; 31 sob only; 3 wheeze only). Asthma medication was used in the past 12 months in 46 children. The diagnostic questionnaire total score (0-100) was significantly different between children with (n=59) or without symptoms and/or asthma medication use at follow-up (56 versus 41, p<0.001)). Sensitivity, specificity, positive and negative predictive values of the questionnaire were 42%, 84%, 71 % and 61%, respectively.
Conclusion: These preliminary results show symptoms and/or asthma medication use at school age in almost half of the children with respiratory symptoms at preschool age. Further analyses of the final database are needed to draw definite conclusions with regard to the diagnostic accuracy of this newly developed diagnostic tool.
Conflict of interest and funding: none
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285: Inhaler choice in asthma and COPD: A poorly addressed issue in guidelines
Dekhuijzen PNR, Picado C, Lavorini F, Ninane V, Haughney J
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Brief outline of context: Inhaled therapy is the cornerstone of pharmacotherapy in patients with asthma and COPD. In addition to drug choice, selection of an appropriate inhalation device is an important consideration.
Brief outline of what change you planned to make: Encourage greater emphasis on choice of inhaler devices in guidelines.
Assessment of existing situation and analysis of its causes:: Very little guidance regarding the use of inhaler devices is provided in asthma and COPD treatment guidelines beyond recommendations for demonstrating and testing correct inhalation technique. For asthma, GINA guidelines dedicate <2 of 92 pages with 32 of 866 references (<4%) to inhaler devices, while UK (BTS/SIGN) guidelines dedicate <3 of 140 pages with 35 of 946 references (<4%). In COPD, GOLD guidelines dedicate <1 of 93 pages with 5 of 557 references (<1%), while ATS/ERS clinical practice guidelines contain no references or inhaler-specific recommendations. These statistics highlight how few published clinical data there are to quantify the importance of device choice in asthma and COPD.
Strategy for change:: Encourage more studies on the impact of inhaler device on asthma outcomes through education, political pressure and direct action.
Measurement of improvement: Increase in published studies, evidence statements and recommendations in guidelines regarding inhaler devices than at present.
Effects of changes: Greater consideration of inhaler device when selecting asthma and COPD therapies, with the aim of producing better outcomes.
Lessons learnt: Drug, device and device use are important influencers of outcomes.
Message for others: More precise information and guidance about inhaler devices is warranted as device choice can have a significant impact on treatment success.
Conflict of interest and funding: PNRD has received fees for talks from AstraZeneca, Boehringer, Chiesi, Meda, Novartis and Teva.
FL has received fees for conferences/talks from Chiesi, Menarini Industrie Farmaceutiche, AstraZeneca, and Meda AB.
VN has received fees for talks from AstraZeneca, Boehringer and GlaxoSmithKline.
JH has received reimbursements for attending symposia, fees for speaking, organising educational events, funds for research or fees for consulting from Almirall, AstraZeneca, Chiesi, GlaxoSmithKline, Merck Sharp & Dohme, Mundipharma, Novartis, Nycomed, sanofi-aventis and Teva.
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183: AsthMa PHenOtypes Study in Real Life conditions in Europe (AMPHORE): One-year assessment of asthma control and its relationship with phenotypes in a primary care population

Thomas M, Miguel Roman Rodriguez, Adamek L, on behalf of the AMPHORE study group

Research question: What factors (physiology, inflammation, adherence, co-morbidity, demography etc) predict symptom asthma control and exacerbations in primary care?

Background: Asthma is a heterogeneous disease comprising a variety of phenotypes which may be classified on the basis of different asthma characteristics (clinical presentation, risk factors, pathology, lung function, biomarkers etc). The relationship between clinical phenotypes and asthma control remains unclear.

Possible methodology: The Asthma Phenotypes Study in Real life conditions in Europe (AMPHORE) is a one year prospective longitudinal study which aims to: 1) evaluate any changes in asthma control patterns in patients of all severities, 2) investigate the relationship between different asthma baseline factors and : i) asthma control, ii) asthma exacerbations and iii) treatment adherence 1300 patients with persistent asthma, enrolled by primary care physicians (PCPs) in five European countries, will be evaluated on 5 occasions: 2 visits at the PCP's office (baseline, 12 months) and 3 phone calls (4 weeks, 4 and 8 months). Assessments will include: clinical data; lung function tests; ocular and nasal symptom scores; exhaled nitric oxide; inflammatory biomarkers; review of exacerbations; depression/anxiety, adherence and quality of life questionnaires. Asthma control will be measured by the Asthma Control Test. Relationships between phenotype baseline assessments and asthma control will be investigated with logistic regression and mixed model. Combination of clustering and discrimination methods will be used for characterisation of clinical asthma phenotypes. AMPHORE is a large prospective study that will describe asthma control patterns over one year and their relationship to clinical phenotypes.

Questions to discuss: Is this a useful and valid approach in primary care?

Conflict of interest and funding: No C/I Funding: GSK

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S2 Asthma general, Thursday 26 April 2012 11.00-12.30 in Moorfoot

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106: Simple spirometry as a first line test for asthma diagnosis in primary care

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Aim: Spirometry is recommended as a first line test for asthma diagnosis in a number of guidelines. The present study was undertaken to determine whether there is sufficient evidence to promote spirometry as a first line test for asthma diagnosis in primary care as compared to methacholine challenge test (MCT).

Method: Medline/Embase were used (search words, spirometry, bronchodilator responsiveness (BDR), asthma diagnosis, methacholine challenge testing, comparison, sensitivity, specificity) to identify articles comparing BDR using simple spirometry to MCT in the primary care setting from 1960-2011.

Results: There were insufficient randomized-controlled studies with comparable design, patient populations and outcomes to carry out a systemic review or meta-analysis. A critical analysis of relevant publications was carried out. The available publications reviewed suggest that MCT has far greater sensitivity for asthma diagnosis; some studies showing that MCT can include/exclude a diagnosis of asthma at a rate of 60% or greater among primary care patients compared to BDR using simple spirometry. In fact, most asthma patients in primary care present with normal baseline spirometry on initial testing with less than 20% demonstrating BDR with simple spirometry; few studies describe practical strategies for spirometric asthma diagnosis and management when initial spirometric testing is normal.

Conclusion: This study suggests that asthma diagnosis can be confirmed in only a small minority of

patients using simple spirometry and BDR compared to MCT. The current evidence does not support simple spirometry as a first line test for asthma diagnosis in primary care. Further studies comparing simple spirometry to MCT for asthma diagnosis confirmation and de-novo asthma diagnosis in primary care are required. Such studies should address considerations related to how test selection may influence costs and outcomes related to asthma care. Current International asthma guidelines should highlight the low sensitivity of simple spirometry for asthma diagnosis compared to MCT, including practical strategies designed to promote management of patients in the interim between suspected and confirmed asthma diagnosis.
Conflict of interest and funding: No conflicts or funding.
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158: Study on knowledge of asthma and assessment of air way condition by peck flow meter in rural community in Bangladesh
Alam Rowshan SM, Hossain Sarowat, Bari Mahmudul, Haque Fazlul, Akhter Rozina
Community Medicine Department, Rangpur Medical College, Bangladesh
Aim: To determine the knowledge of asthma and assessment of airway condition by peck flow meter.
Method: A cross sectional study was conducted in the rural areas under s 04 Unions of Palashbari Up-Zilla of Guibandha District. Total respondents were 940, male & female of 18 years and above were selected purposively. Data were collected by pre tested questionnaire and carried out from 7th march to 7th April, 2011.
Results: Partial knowledge about asthma was 64%, while 36% had no knowledge at all. 34.5% said heredity has an impact in occurrence of asthma and 26% said germ is the possible cause, 40% said asthma is a infectious disease, 68.5% gave opinion in controllable & 31.5% stated that it is curable. 68% had no idea about inhaler medication. Regarding triggering factor 31% blamed damp weather & common cold and 23% said dust, smoker was 43%. PEF (Peck Expiratory Flow) revealed that 69% had above 80% of predicted value.
Conclusion: Rural people of Bangladesh have lack of knowledge about asthma. We hope that these findings would be helpful for planning measures for community awareness and also training and involvement of health care personnel.
Conflict of interest and funding: No conflicts of interest to report. Supported by Department of Community Medicine, Rangpur Medical College of Bangladesh.
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228: Difficult Asthma – The Plymouth experience
Hayes G, Castell B, Pike D, Masoli M.
Plymouth Hospital NHS Trust. Plymouth. UK.
Aim: Difficult asthma represents a significant unmet clinical need and burden on healthcare resources. We recently set up a difficult asthma clinic (DAC) in Plymouth and conducted an observational study of our experience to date.
Method: The DAC started in April 2010 evaluating patients using a systematic multidisciplinary approach. Patients were symptomatic at ≥ Step 4 BTS guidelines.
Results: 117 patients were evaluated within the DAC. 77 women. 17 patients were felt either not to have asthma or asthma was not the primary diagnosis. 100 patients had difficult asthma. 14 patients had an occupational element. 72 had comorbidities which included: vocal cord dysfunction/dysfunctional breathing (20), bronchiectasis (20), BMI >35 (19), COPD/emphysema (9), GORD (31), immune deficiency (5), OSA (5), psychological (11), allergic bronchopulmonary aspergillosis (3). 50 patients were on long term oral corticosteroids (OCS) (mean 22mg/d). Most patients were able to significantly reduce their OCS dose, mean reduction 53%. 12 were able to discontinue OCS entirely. Medications: Mean inhaled corticosteroid dose 2287mcg/d (BDP equivalent), 60 patients were on LTRA, 47 on theophylline, subcutaneous terbutaline (3), cyclosporin

(2), Anti-IgE therapy (1). Currently 13 on anti-IgE therapy. 59 had severe refractory asthma by American Thoracic Society criteria. Adherence: 7 of 29 patients on regular OCS were identified as non-adherent with undetectable prednisolone level and normal cortisol. Healthcare utilisation: 95 patients with 12 months follow up data demonstrated a 50% reduction in hospitalisations compared to the previous 12 months, 0.96 vs 0.48.
Conclusion: This study highlights the importance of alternative diagnoses and comorbidities in the systematic work up of difficult asthma. The implementation of a DAC has reduced hospital admissions, reduced OCS requirement and enhanced access to treatments such as Anti-IgE therapy.
Conflict of interest and funding: None
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329: Older adults with asthma – what is the difference?
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Dep of Public Health and Caring Sciences, Family Medicine and Clinical Epidemiology, Uppsala University, Sweden
Aim: To study differences between older and younger asthmatics.
Method: 1725 patients aged 18-75 with a diagnosis of asthma were randomly selected from 56 primary and 14 secondary care in Sweden. Response rate 71%. Information was collected using questionnaires in 2005 and record review for the period of 2000-2003. History of comorbidities and allergy were obtained from the patients' records. This analysis included patients aged 25-75.
Results: 1094 patients (1226 from primary and 499 from secondary care) were included, 215 aged 25-39 (younger adults, YA), 618 aged 40-63 (middle age, MA) and 261 aged 64-75 (older adults, OA). 40% were men. Daily smoking was less common in older age, YA 12%, MA 13%, OA 5% (p=0.007). There was no difference regarding depression. Heart disease and hypertension were more common in the older, 27% and 32% respectively, than among the MA, 7% and 18% respectively. Allergic rhinitis was commoner in the younger, YA 51%, MA 26%, OA 16% (p<0.001). Regarding pharmacological treatment, 29% of YA, 24% of MA and 22% of OA were on level 2 and 43% of YA, 56% of MA and 63% of OA on level 3 (p<0.001).
Total mean of MiniAQLQ was lower in the older asthmatics, YA 5.61, MA 5.25 and OA 5.01 (p<0.001). Of the older 28% achieved optimal asthma control vs 46% in YA and 32% in MA. Odds ratio for not achieving asthma control was in OA 2.07, in MA 1.53 (with YA as reference), adjusted for sex, daily smoking, educational level and level of care.
Conclusion: In this study older asthmatics had lower asthma control than younger asthmatics despite medication on higher treatment level.
Conflict of interest and funding: None
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195: Changing trends of asthma in Bangladesh: 1999 to 2009
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Aim: Two asthma prevalence study in 1999 and 2009 were compared to find out the treands of asthma in Bangladesh
Method: Both NAPS I & II was conducted from January to August 1999 on 5642 and November, 2009 to April 2010 on 5256 subjects respectively. Data were collected from primary sampling units of eight municipality blocks of six district towns and twelve villages of six districts chosen by stratified random sampling from all 64 districts of country. Face-to-face interviews were taken in the randomly selected houses using a validated structured questionnaire.
Results: In 1999 the prevalence of asthma was 6.9% (95% CI: 6.2-7.6) whereas in 2010 it is 7.7.67% (95% CI: 7.59-7.75). In 1999 prevalence of other asthma definitions were: ever wheeze 8.0% (95% CI: 7.3-8.7); perceived asthma 7.6% (95%n CI: 6.9-8.3); doctor diagnosed asthma 4.4 (95% CI: 3.9-4.9). In 2010 results are – ever wheeze 8.6% (95% CI: 8.52 – 8.69); perceived asthma 8.31% (95% CI: 8.23 –

8.4); doctor diagnosed asthma 6.26% (95% CI: 6.2 -6.3). In 1999 the prevalence of asthma in children (5- 14 years) was higher than in adults (15 – 44 years) (7.3% versus 5.3%; odds ratio [OR] = 1.41, 95% CI: 1.09 – 1.82). At present prevalence is found to be higher in adults than children. Asthma is significantly higher in house-holds with ≤ 3 people than in large house-hold (OR = 2.20, 95% CI: 1.24 - 3.20). The low-income group (OR=1.41, 95% CI: 1.04 – 1.92) and illiterate group (OR=1.51, 95% CI: 1.01 -2.24) were more vulnerable to asthma attacks than the high-income group and more educated people, respectively.
Conclusion: Trends of asthma in Bangladesh remains almost static over last ten years.
Conflict of interest and funding: None
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280: Level of asthma control in a primary care setting by taking the Asthma Control Questionnaire (ACQ)
Loymans RJ, Honkoop PJ, Termeer EH, Snoeck-Stroband JB, Assendelft WJ, Schermer TRJ, Sont JK, Sterk PJ, ter Riet G, The ACCURATE Study Group
Academic Medical Center - University of Amsterdam, Amsterdam, the Netherlands
Aim: The objective of this study was to evaluate the level of asthma control in a Dutch primary care setting.
Method: We conducted a cross sectional survey among patients who were invited to participate in the Accurate trial (Trial registration: NTR1756). All patients with a doctors' diagnosis of asthma, aged between 18 and 50 years old and a prescription of inhaled corticosteroids in the previous year were invited. Patients who did not want to participate were nevertheless requested to complete an Asthma Control Questionnaire (ACQ). Results of patients not willing to participate were added to baseline ACQs of participants. Asthma control categories were defined as strictly controlled with an ACQ ≤ 0.75; partly controlled with an ACQ between 0.75 and 1.50 and uncontrolled asthma with an ACQ ≥ 1.5.
Results: We obtained 1,237 ACQs after inviting 3,662 patients in 132 general practices. The median ACQ was 0.7; interquartile range from 0.17 to 1.17; range 0.0 to 5.0). Nineteen percent of patients were uncontrolled; 22% partly controlled and 58% strictly controlled. Females were less controlled than men (ΔACQ 0.18; 95%CI 0.08 to 1.10); asthma control was not associated with age (p=0.83).
Conclusion: In about one fifth of a Dutch primary care population asthma is uncontrolled. Notably, although the majority of patients with asthma have an adequate level of control, there is still room for improvement in almost a quarter of patients, as GINA guidelines recommend considering stepping up asthma medication when patients are partly controlled. These data suggest that currently asthma is suboptimally controlled in primary care.
Conflict of interest and funding: This study was supported by The Netherlands Asthma Foundation and The Netherlands Organisation for Health Research and Development.
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S3 Assesssment, Thursday 26 April 2012 11.00-12.30 in Kilsyth

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160: Active comorbidities at time of COPD diagnosis: real-world data from the UK
Price D, Jones R, Halpin D, Winter R, Hill SL, Bateman E, Freeman D, Kearney M, Holton K, Moger A, Burden A, Ziegenweidt J von, Mascarenhas L, Chisholm A, Ryan D
University of Aberdeen, UK
Aim: Evaluate prevalence of comorbidities at COPD diagnosis in real-world patients over a 10-yr period.
Method: Retrospective study using data from the United Kingdom's General Practice and Optimum Patient Care research databases. Eligible patients were: ≥40yrs; received first COPD diagnostic code between 1990–2009; prescribed ≥2 COPD therapies in the year following diagnosis, had ≥2yrs clinical

data prior to diagnosis. Prevalence of asthma, ischaemic heart disease (IHD), gastroesophageal reflux disease (GERD) and diabetes mellitis (DM) were evaluated using diagnostic codes and (for GERD and DM) prescribing records before COPD diagnosis.
Results: 38,859 eligible patients: 52.6% male, diagnosed with COPD at median(IQR) age 68(60–75)yrs. Over the period, asthma was recorded in 53.3% of patients, falling from 71.1% in 1990 to 29.7% by 2008. In the 2yrs prior to their COPD diagnosis, 7.7% of patients consulted for IHD; 18.5% consulted, or received prescriptions, for GERD and 9.6% for DM. The percentage of patients consulting for comorbidities prior to COPD diagnosis increased over the study period: IHD from 6.5% in 1990 to 11.5% in 2009; GERD from 1.5–8.4% and DM from 4.4–12.5%.
Conclusion: These data confirm the presence of comorbidities in a substantial proportion of the UK COPD population. The trends suggest better differentiation of asthma and COPD diagnoses in recent years. The increasing comorbidities prevalence may indicate growing awareness of comorbidities or improved diagnosis of COPD in patients treated for comorbidities.
Conflict of interest and funding: No conflict of interest or funding.
Corresponding author: Professor David Price

205: The role of two easy-to-use exercise tests in predicting the course of COPD
Ter Riet G, Siebeling L, Zoller M, Schafroth U, Frei A, Muggensturm P, Puhan MA
Academic Medical Centre, University of Amsterdam, Amsterdam, The Netherlands
Aim: To assess if a simple exercise capacity test (one-minute sit-to-stand (StS) or handgrip test (HGT)) can replace the six-minute walk distance (6MWD), which is impractical in most primary care settings, in clinical prediction models for quality of life, exacerbation risk and mortality in primary care COPD patients.
Method: In an ongoing prospective cohort study, we collected 2-year follow-up data on 411 primary care COPD patients. Using multivariable regression analyses, we assessed to which extent the information from the StS and the HGT test could replace the 6MWD.
Results: The StS test proved to be very informative in predicting mortality. It added importantly to prediction using age, sex, BMI, FEV1, dyspnea and use of inhaled drugs: odds ratio StS 0.88 (95%CI from 0.81 to 0.95) for each additional sit-to-stand movement. Patients who had died did around 12 (range 4 to 30) sits-to-stand against 19 (4 to 42) for patients still alive. Discrimination for the BODE index omitting the E (which stands for “exercise”) yielded an area under the curve (AUC) of 0.68. AUC increased to 0.78 when StS was added. The AUC for the ADO index was 0.80. StS nor HGT improved this much (AUCs 0.83 and 0.81, respectively).
Conclusion: The 6MWD, although informative, is seldom practical for primary care. Prediction of mortality as good as the BODE index may be achieved when the 6MWD is replaced by the one-minute StS. The ADO index's performance is slightly improved by adding exercise capacity via the StS.
Conflict of interest and funding: The ICECOLD ERIC study is funded by the Dutch Asthma Foundation, the Swiss National Science Foundation, and the Zurich Lung League.
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275: Multidimensional prognostic indices for use in COPD patient care. A systematic review
Van Dijk WD, Van den Bemt L, Van den Haak-Rongen S, Bisschof E, Van Weel C, In ‘t Veen JCCM, Schermer TRJ.
Radboud University Nijmegen Medical Centre, Department of Primary and Community Care, Nijmegen, the Netherlands
Aim: Our aim was to review published prognostic multidimensional indices for stable COPD.
Method: We performed a systematic literature search in both Pubmed and Embase up to September 2010. Primary publications of indices developed for stable COPD patients, that predict future outcome by a multidimensional scoring system, developed for and validated with COPD patients were selected only. Two reviewers independently assessed the index quality using a structured

screening form for systematically scoring prognostic studies.
Results: Of 7,028 articles screened, 13 studies comprising 15 indices were included. The quality of the studies underlying the indices varied widely from fairly poor to good. We observed 21 different predictors and 7 prognostic outcomes of the selected indices, the latter reflecting mortality, hospitalization and exacerbation. Dyspnea, airflow obstruction and age are selected most frequently as predictors. Statistical methods to assess the predictive abilities of the indices were heterogenic. They generally revealed moderate to good discrimination, when measured. Only 1 index had been explored for its application in daily practice.
Conclusion: We identified 15 multidimensional prognostic indices specifically developed for COPD patients. Although the overall prognostic performance appears moderate to good, there currently is a lack of evidence that prognostic indices improve decision making, treatment or outcome in patients with COPD. The next challenge is to perform impact studies that determine if implementation of specific indices can indeed improve individual health(care).
Conflict of interest and funding: None
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216: Multidimensional index BOD predicts ten year mortality forCOPD in primary care.
Keaney NP, Ansari K, Kay AD, Munby J, Price M, King K, Taylor IK
City Hospitals Sunderland, University of Sunderland, Sunderland, UK
Aim: To assess BOD, a simple multidimensional prognostic index for COPD, in primary care.
Method: From 1999-2002 we identified patients with COPD in primary care clinics in Sunderland. BOD scores (range 0-7) were calculated from BMI, FEV1% predicted and MRC Dyspnoea Scale.
Results: We enrolled 455 (51% female) subjects with mainly mild/moderate COPD. Results (mean ± s.d.) for men and women respectively were: age 66±10 & 64±10 years; pack/years 34±19 & 34±18; BMI 27±5 & 25±6 kg/m2; FEV1% predicted 55±15 & 57±16; and MRC Dyspnoea score 2.6±1.0 & 2.6±1.0; with BOD scores of 1.9±1.5 & 2.0±1.6. Because of the comparability of these variables further analysis of mortality was of the whole cohort. In October 2010, 154 deaths (33.8%) had been reported to the Registrar General. Mortality increased with higher BOD scores; for a BOD score of zero the 10 year survival was 77% but for a score of 6 it was reduced to 29%. Cox regression analysis showed that BOD quartiles, age and smoking pack/years had a significant influence on mortality ($p<0.0001$). ROC analysis showed that AUC for BOD (0.629) outperformed GOLD staging (0.572). The addition of age and pack/years (BODAS) improved the model further (0.721). In a group of 161 survivors tested in 2007/2008 health status (SGRQ) was significantly worse in those with the worst quartile of BOD scores ($p<0.001$).
Conclusion: BOD is a simple multidimensional Read-coded index suitable for use in primary care and it avoids the requirement of a 6 minute walk test. BODAS may be more discriminatory for our cohort but may underestimate risk in younger patients.
Conflict of interest and funding: No conflicts of interest to report.
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127: Influence of different spirometry interpretation algorithms (SIA) on decision making among primary care physicians: A pilot study.
D'Urzo AD, Jugovic P, Jhirad R
University of Toronto
Aim: Spirometry is recommended for the diagnosis of asthma and chronic obstructive pulmonary disease (COPD) in international guidelines. Limitations of SIA promoted for adoption in primary care have been described (Can Fam Physician October 2011 57: 1148-1152, 1153-1156). This study examines how different SIA may influence decision making among primary care physicians.
Method: Thirty seven primary care physicians participating in a spirometry interpretation session were invited to interpret nine spirograms presented twice in random sequence using two different

SIA (as stand alone aids) and touch pad technology (remote audience response devices) for anonymous data capture and recording.
Results: We observed important differences in the interpretation of the same spirograms using two different SIA. When the pre-bronchodilator FEV1/FVC (Forced Expiratory Volume in one second/Forced Vital Capacity) ratio was greater than 0.70 one algorithm lead to a "Normal" interpretation; the second SIA prompted a bronchodilator challenge revealing changes in FEV1 that were consistent with asthma. The reliance of changes in FEV1 after bronchodilator challenge to distinguish asthma from COPD in one SIA led to consideration of asthma despite the presence of data that was also consistent with COPD; the latter SIA did not include a logic string leading to a post-bronchodilator FEV1/FVC so a definitive consideration of COPD could not be made. The absence of a post-bronchodilator FEV1/FVC decision node in one algorithm did not permit consideration of possible COPD and prompted referral for evaluation of low FVC.
Conclusion: This pilot study suggests that different SIA may influence decision making and lead clinicians to interpret the same spirometry data differently. Further studies are needed to better understand the clinical implications of our findings.
Conflict of interest and funding: None
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153: A comparison of multi-component indices of COPD severity in primary care: an UNLOCK study from the IPCRG
Gabe-Thomas E, Jones RCM, Chavannes N, Lee A, Hyland M, Price D.
School of Psychology, Plymouth University
Aim: To evaluate the performance of the BODE, DOSE and ADO indices in primary care datasets as predictors of current and future COPD severity and impact.
Method: Data routinely collected from primary care from the OPC COPD service provided prospective data from 131 practices. There was 12 month follow up data on 4414. Data from a pulmonary rehabilitation project in Holland provided 154 records over a 2 year period. The Devon COPD audit project had 370 records of primary care patients with confirmed COPD in a cross-sectional dataset.
Results: Correlations with current health status in the Devon and Holland datasets showed that the DOSE index was more closely correlated to CCQ and SGRQ total scores than ADO. In the domain scores there only 1 recorded item where was ADO more closely correlated than DOSE, the CCQ domain of function. DOSE but not ADO was significantly correlated to six minute walking test, BMI, BODE and pack years. In the OPC dataset, DOSE was a better predictor of exacerbations and admissions in the next 12 months. Using logistic regression the odds (95% CI) were for exacerbations: DOSE 1.60 (1.53-1.68) for ADO 1.14 (1.10-1.19); for hospital admissions: DOSE 1.45 (1.27-1.65) and ADO 1.22 (1.07-1.39).
Conclusion: In real life primary care data and in pulmonary rehabilitation patients, DOSE is more closely correlated than ADO with health status and exercise testing and is a better predictor of future exacerbations and admissions.
Conflict of interest and funding: The UNLOCK group is supported by IPCRG.
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S4 COPD general, Thursday 26 April 2012 11.00-12.30 in Harris

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142: Empowering Family Doctors to manage COPD
Kaplan A, Roman Rodriguez M, Jones R, Martin A
Research question: Can Family Physicians produce medical education to improve COPD education internationally and ultimately create behaviour change in clinicians and thus improve the management of their patients?

Background: A steering committee of Family Physicians with an interest in respiratory medicine was struck to create educational material to increase COPD awareness and ultimately improve COPD management. The programs have been given in 25 countries to over 35,000 primary care practitioners. They were given in 12 countries in the first year, 11 in the second year and six in the third year. The courses ranged from two hours to full day programs. Modules include topics of COPD overview, challenging perceptions of COPD, screening and diagnosis, early diagnosis, smoking cessation, medication adherence, education of the COPD patient, and management of exacerbations.
Possible methodology: Standardized questionnaires were given to participants to assess knowledge transfer. These are collected and collated by country. Repeat programs done in some markets will allow measurement of actual behaviour change.
Questions to discuss: Does knowledge transfer occur with one module? Will recurrent programs induce physician behaviour change? Will this process change COPD management in primary care? What are the best channels to implement CME projects in Primary Care? How can we assess the real life beneficial effect on patients derived from a CME initiative?
Conflict of interest and funding: Program was created and funded by Boehringer Ingelheim and Pfizer. Abstract submission was not funded
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167: COPD in a Spanish area
Bruscas MJ, Naberan K, Lamban MT, Bello S.
SALUD, Aragon, Spain
Aim: The objective of this study was to know the prevalence and characteristics of COPD in the population of Aragón (Spain). Based on a population of 1,300,000 persons, a sample of 1185 individuals between 40 and 75 years was chosen.
Method: This was a cross-sectional population-based epidemiological study. The selection of the subjects was done randomly and proportionally in accordance with the health card records from the Heath Service. A spirometry with bronchodilator test was performed in all subjects and they answered several questionnaires: IPCRG diagnosis of asthma, IPAG for diagnosis of COPD, respiratory symptoms CECA, demographic variables and clinical history. The quality of life was measured in the COPD patients with the St. George Respiratory Questionnaire. The diagnosis of COPD was considered in accordance with the GOLD criteria (postbronchodilator FEV1/FVC ratio of <0.7).
Results: The prevalence was 10.4% (95% CI 9.8% to 11.0%), males 16.9% and 5.7% in women and progressively higher with increased age. The 14.5% were smokers, the 14.6% former smokers and 4.6% non-smoking. The 39% were mild, 49.6% moderate, 9.8% were severe and 0,6% were very severe COPD. The distribution was similar between men and women. Only 21.1% of COPD subjects had a previous diagnosis, 23% of these were mild, 65.4% moderate, 7.7% severe, and 3.8% very severe. Logistic regression analysis of factors associated with previous diagnosis of COPD, demonstrated that being older than 70 years and having a smoking history of >30 packs/year, was associated with more severe COPD and an impairment in quality of life.
Conclusion: The high prevalence of COPD and the large proportion of underdiagnosis, leads us to believe that early detection of COPD is still an unsolved problem. New strategies for this should be developed.
Conflict of interest and funding: This study has been funded by a grant from Boehringer Ingelheim
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190: Design of SEARCH (Screening, Evaluating and Assessing Rate CHanges of Diagnosing Respiratory Conditions in Primary Care): A Prospective Cluster Randomized Study
Frank Albers, MD, PhD*; Asif Shaikh, MD; Ahmar Iqbal, MD *Boehringer-Ingelheim, Inc, Ridgefield, Connecticut

Research question: How does the COPD-Population Screener (COPD-PS) questionnaire alone or with the COPD-6 handheld spirometric device impact COPD diagnosis rates and practice patterns in US primary care?
Background: COPD is frequently undiagnosed with approximately half of patients unidentified. Early identification of COPD in primary care can improve proactive management. Spirometry is critical to confirm COPD diagnoses, but not recommended by the US Preventive Services Task Force for mass-screening asymptomatic adults. Tools are needed to identify patients at risk of COPD.
Possible methodology: SEARCH cluster-randomized 168 US primary care practices to three arms: 1) COPD-PS questionnaire, then COPD-6 spirometry in patients with COPD-PS scores ≥5; 2) COPD-PS alone; 3) Usual care. At visit 1, practices applied arm-specific procedures to patients ≥40 years old attending scheduled appointments. Practices received no additional COPD management education or details of other arms' interventions. Medical charts were reviewed 8 weeks after Visit 1. The primary outcome measurement will be verified percent yield of new clinical COPD diagnoses in arm 1 versus arm 3. If diagnostic yield in arm 1 is significantly higher than in arm 2 (one-tailed $p \leq 0.025$), the hierarchical co-primary outcome will be evaluated: COPD diagnostic yield in arm 2 versus arm 3. Secondary outcomes measure COPD diagnostic practice patterns: clinical diagnosis of COPD at visit 1, pulmonology referrals/testing, or new respiratory prescriptions.
Questions to discuss: How does SEARCH methodology compare to other similar studies and how will its results compare to those in other countries? Do two-stage case-finding results differ from questionnaire-only approaches? How will an outcome-focused endpoint (clinical COPD diagnosis) compare to an action-oriented endpoint (practice pattern)?
Conflict of interest and funding: Funding: Boehringer Ingelheim Pharmaceuticals, Inc. and Pfizer, Inc.
Corresponding author: Dr Frank Albers **Email:** frank.albers@boehringer-ingelheim.com

187: Inhaled corticosteroid use in chronic obstructive pulmonary disease and the risk of pneumonia

Yawn B, Tian H, Li Y, Zhang J, Arcona S, Kahler KH
Department of Research, Olmsted Medical Center, Rochester, MN, USA
Aim: To investigate the association of pneumonia with inhaled corticosteroid (ICS) use among newly diagnosed COPD patients; an association has been shown in previously diagnosed COPD patients.
Method: Marketscan® datasets were used. Newly diagnosed COPD patients (no diagnosis of COPD in previous 12 months) with at least two COPD diagnoses at different days and no history of pneumonia/ICS use in the past 12 months were included. Patients with a diagnosis of asthma, cystic fibrosis or lung cancer or <45 years old in the 12-month baseline period or oral corticosteroid use in the 5-year follow-up period were excluded. Daily ICS use for each patient was converted into fluticasone equivalents, classified into low-dose (1–499 µg/daily), medium-dose (500–999 µg/daily) and high-dose (≥1000 µg/daily), and was constructed as a time-dependent variable. Cox regression modeling was employed to compare the risk of pneumonia onset among ICS non-users versus low-dose, medium-dose and high-dose ICS users. Models were adjusted for baseline characteristics, including age, gender, region, insurance type, COPD diagnosis year, utilization of COPD medications, comorbidity, hospitalizations and emergency room visits.
Results: 135,445 qualified patients were identified; average age 67 (SD 13) years; 51.9% were male. Among them, 28,750 (21.2%) patients had pneumonia in the follow-up period. ICS use was associated with pneumonia (hazard ratio [HR] = 1.38, 95% CI 1.27–1.49 for low-dose users; HR = 1.69, 95% CI 1.52–1.88 for medium-dose users; and HR =2.57, 95% CI 1.98–3.33 for high-dose users). All differences were statistically significant (p=0.001).
Conclusion: The use of ICS in newly diagnosed COPD patients is associated with an increased risk of pneumonia.
Conflict of interest and funding: Dr B Yawn has received COPD research funding from Novartis, BI, Pfizer and GSK within the past 36 months. Drs Tian, Li, Zhang, Arcona and Kahler are employees of Novartis. This research was funded by Novartis Pharmaceuticals Corporation.

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197: Co-morbidities in COPD: A pilot study on the prevalence of osteoporosis/osteopenia in COPD patients in primary care practice

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Group Practice Engelsbergen, Eindhoven, Netherlands

Aim: Prevalence of co-morbidities like osteoporosis in mild COPD in primary care patients is unknown. In a specialist populations the prevalence is 24 %, in general population about 11 %. Is the bone status of patients treated in primary care known and what is the prevalence of osteoporosis/osteopenia in primary care?
Method: A pilot study was performed in a primary care population of COPD-patients. Data where collected concerning the known prevalence of osteoporosis. All patients without osteoporosis/Dexa where invited for a Dexa/VFA scan.
Results: COPD-prevalence in the population (n=2428) was 2.4 % and 1.3 % (n= 31) where treated in primary care. Post FEV1 71,7 %, mean 69 yrs, known osteoporosis 6 % (n=2), the response for DEXA/VFA was 72 % (n=21), 14 % (n=4) refused, another 14 % (n=4) planned a DEXA/VFA. Of the respondents (including known patients) in 13 % (n=3) fracture risk was slightly elevated (T-score 1-2.5) and in 17 % (n=4) it was elevated (T-score< -2.5/above 70 age Z-score) warranting medical treatment. Patients with elevated risk didn't have more exacerbations, higher age, or lower FEV1.
Conclusion: In a PC practice of most patients the bone-mineral status was unknown. The prevalence in the respondents was slightly higher then in a general population (> 55 yrs) (OR 1.7 CI 0.57-5.03) but lower then in a specialist population (OR 0.67 CI 0.22-2.04) A larger study in more practices is warranted to confirm these findings and to asses relationship with patient variables. Case finding on osteoporosis in selected patients with COPD treated in PC should be discussed.
Conflict of interest and funding: None
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112: The prevalence of undiagnosed chronic obstructive pulmonary disease in a primary care population with respiratory tract infections – a case finding study

Sandelowsky H, Ställberg B, Nager A, Hasselström J.
Center for Family and Community Medicine, Department of Neurobiology, Care Sciences and Society, Karolinska Institutet, Huddinge, Sweden.

Aim: To describe the prevalence and severity of undiagnosed COPD in a group of patients with respiratory infections attending urgent primary care, and to identify those variables in patients' history that could be used to detect the disease.
Method: Patients of 40-75 years (n=138) attending urgent primary care center with acute respiratory infection, positive smoking history and no previously known pulmonary disease underwent pre- and post bronchodilator spirometry four to five weeks after the acute infection. Prevalence and severity of COPD were estimated following the Global Initiative for COPD (GOLD) criteria. Variables such as sex, age, current smoking status, smoking intensity (pack years) and type of infection diagnosis were assessed for possible associations with COPD.
Results: The prevalence of previously undiagnosed COPD in our study group was 27%, of which 45% were in stage 1 (FEV1≥80% of predicted), 53% in stage 2 (50 ≤FEV1<80% of predicted), 3% in stage 3 (30≤FEV1<50% of predicted) and 0% in stage 4 (FEV1<30% of predicted). We found a significant association between COPD and age ≥ 55 (OR = 10.9 [95% CI 3.8-30.1]) and between COPD and smoking intensity (pack years > 20) (OR = 3.2 [95% CI 1.2-8.5]). Sex, current smoking status and type of infection diagnosis were not shown to be significantly associated with COPD.
Conclusion: A middle-aged or older patient with any type of common respiratory tract infection, positive smoking history and no previously known pulmonary disease has an increased likelihood of having underlying COPD. These patients should be offered spirometry for diagnosis of COPD.
Conflict of interest and funding: The authors report no conflicts of interest. Funding was through

Karolinska Institutet and Stockholm County Council.
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174: Fresh Air Survey Uganda
van Gemert FA, Chavannes NH, Kamya M, Kirenga B, Musinguzi P, Luzige S, Jones R, Tsiligianni I, Williams S, van der Molen T
Research question: The prevalence and burden of COPD in a rural area in Uganda, and the main contributory factors such as tobacco smoke and exposure to biomass fuel use.
Background: In the western world tobacco smoking has traditionally been the main factor responsible for the development of COPD. In sub-Saharan Africa, the damage to respiratory health is likely to be caused by biomass fuel use for cooking and heating. There is little data on the prevalence of COPD and its risk factors in sub-Saharan Africa.
Possible methodology: In February 2012 a population-based, cross-sectional epidemiological study on the prevalence and burden of COPD, and its risk factors will start in Masindi district, a predominantly rural region inhabited by 340.000 people. More than 90% of the households use wood indoors as biomass fuel. The survey will be conducted among randomly selected of at least 300 men and 300 women above the age of 30 years by using spirometry and validated questionnaires. Levels of indoor air pollution will be measured in the households of participants with confirmed COPD. In advance, education programs will be initiated increasing the knowledge on chronic respiratory diseases among all the healthcare workers of the district. The survey will be conducted by well-trained local healthcare workers.
Questions to discuss: Prevalence data of patients with COPD will be established. The burden of confirmed COPD (MRC, CCQ, activity limitation and exacerbation assessment) will be evaluated, and association with biomass fuel use and tobacco smoke will be analysed. Eventually a dose-response relationship of respiratory symptoms and COPD with exposure to biomass smoke will be determined.
Conflict of interest and funding: There is no conflict of interest. This survey has been funded by the IPCRG, supported by a grant from MundiPharma International Ltd.
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S5 Asthma pharmacology/treatment, Thursday 26 April 2012 14.30-15.30 in Tinto

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109: Adrenal Suppression in Asthmatics treated with ICS, a tool for your practice
Kaplan A, Krishnamoorthy P, Cave A, Li J, Kim H, Banks N
University of Toronto, Canada
Brief outline of context: Adrenal suppression (AS) presents subtly, is often unrecognized, and is poorly understood. This potentially catastrophic condition needs to be considered in children treated with inhaled corticosteroids (ICS) for asthma.
Brief outline of what change you planned to make: Creation of a one page tool on AS
Assessment of existing situation and analysis of its causes:: We hope to bridge a distinct knowledge gap re AS, as assessed from the needs assessment from an accreditted CME on this topic
Strategy for change:: It will be available on the FPAGC website at www.fpagc.com
Measurement of improvement: Improved knowledge about AS after CME and review of tool at upcoming events in the next year.
Effects of changes: Family Physicians should learn the signs and symptoms of adrenal suppression and the ways to screen, diagnose and prevent it.
Lessons learnt: A useful single page tool on this complicated subject can be created for primary care.
Message for others: Adrenal suppression symptoms (from glucocorticoid deficiency: malaise, nausea, headache, poor growth, poor weight gain or adrenal crisis of hypotension and hypoglycaemia) are not as well known as those of mineralocorticoid defiency associated with

primary adrenal insufficiency. Consider screening those on high dose ICS such as > 500 ug fluticasone daily or >800 ug budesonide daily, or those on > 2 weeks of systemic steroids with a serum cortisol test done prior to 8 am. Diagnosis may require confirmation with an ACTH stimulation test. Prevention of AS by using the lowest effective dose, considering cumulative dose of other forms of steroids used by our patients and using ICS with minimal systemic effects should be considered.
Conflict of interest and funding: Unrestricted grant from Nycomed Canada
Corresponding author: Dr. Alan Kaplan **Email:** for4kids@gmail.com

181: Network meta-analysis of asthma therapy recommended for 5 to 18 year olds in GINA steps 3 and 4.
van der Mark LB, Lyklema PhE, Geskus RB, Mohrs J, Bindels PJE, van Aalderen WMC, ter Riet G.
Department of General Practice, Academic Medical Center, Amsterdam, the Netherlands
Aim: The recommendations for the treatment of moderate persistent asthma in the Global Initiative for Asthma (GINA) guidelines for paediatric asthma are mainly based on scientific evidence extrapolated from studies in adults or on consensus. Furthermore, clinical decision-making would benefit from formal ranking of treatments in terms of effectiveness. Our objective is to assess all randomized trial-based evidence specifically pertaining to 5-18 year olds with moderate persistent asthma. Rank the different drug treatments of GINA guideline steps 3&4 in terms of effectiveness.
Method: Systematic review with network meta-analysis. After a comprehensive search in Central, Medline, Embase, CINAHL and the WHO search portal two reviewers selected RCTs performed in 4,129 children from 5-18 year old, with moderate persistent asthma comparing any GINA step 3&4 medication options. Further quality was assessed according the Cochrane Collaboration's tool and data-extracted included papers and built a network of the trials. Attempt at ranking treatments with formal statistical methods employing direct and indirect (e.g. through placebo) connections between all treatments.
Results: 8,175 references were screened; 23 randomized trials (RCT), comparing head-to-head (n=17) or against placebo (n=10), met the inclusion criteria. Except for theophylline as add-on therapy in step 4, a closed network allowed all comparisons to be made, either directly or indirectly. Huge variation in, and incomplete reporting of, outcome measurements across RCTs precluded assessment of relative efficacies.
Conclusion: Evidence-based ranking of effectiveness of drug treatments in GINA steps 3&4 is not possible yet. Existing initiatives for harmonization of outcome measurements in asthma trials need urgent implementation.
Conflict of interest and funding: No conflicts of interest. This study was financially supported by the Netherlands Asthma Foundation (3.4.06.078) and Stichting Astma Bestrijding (2008/027).
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279: Asthma control status in participants and non-participants of a pragmatic trial in primary care
Honkoop PJ, Loymans RJ, Termeer EH, Snoeck-Stroband JB, Assendelft WJ, Sterk PJ, ter Riet G, Schermer TRJ, Sont JK, The ACCURATE Study Group
Leiden University Medical Center, Leiden, the Netherlands
Aim: Pragmatic trials aim to include a representative sample of a target population. We aimed to assess by how much the level of asthma control differed between participants and non-participants of a pragmatically intended trial in general practices.
Method: We conducted a non-participant analysis of patients invited for the Accurate trial (Trial registration: NTR1756). By mail we contacted patients who were aged between 18 and 50 years old, with a doctor's diagnosis of asthma and a prescription of inhaled corticosteroids in the previous year from 132 participating general practices around Amsterdam, Nijmegen and Leiden. We asked patients who did not want to participate for their reasons and to fill out an Asthma Control Questionnaire (ACQ). Current asthma control in participants and non-participants was assessed by the ACQ and results were compared by Student's t-test.

Results: We mailed 3,662 patients, 640 (18%) participated in the trial and 613 amongst those not willing to participate (17%) filled out an ACQ. Patients not willing to participate had better asthma control (mean ACQ 0.62; IQR 0.0 to 1.0) than trial participants (ACQ 0.97; IQR 0.3 to 1.3). The mean difference was -0.35 (95% CI: -0.43 to -0.27, p<0.001). Main reasons given for non-participation in the trial were: lack of time (33%) no asthma complaints (32%); and no interest (27%).
Conclusion: Patients who participated in the Accurate trial have worse asthma control than those not participating. Our data indicate that current level of asthma control is probably amongst patients' reasons for trial participation. This stresses the importance of pre-planned subgroup analyses of trial outcome based on baseline asthma control categories.
Conflict of interest and funding: This study was supported by The Netherlands Asthma Foundation and The Netherlands Organisation for Health Research and Development.
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277: Patients with asthma show greater improvements in lung function after combination therapy with fluticasone propionate/formoterol fumarate than with its individual components administered alone

Price D, Papi A, Kaiser K, Grothe B, Lomax M, McIver T, Dissanayake S
Centre of Academic Primary Care, University of Aberdeen, Aberdeen, UK
Aim: According to the GINA guidelines, combination therapy with an inhaled corticosteroid (ICS) and a long-acting ß2-agonist (LABA) is the most effective treatment option for patients with asthma uncontrolled with ICS monotherapy. Combining the ICS fluticasone propionate (FLUT) and the LABA formoterol fumarate (FORM) in a single aerosol inhaler (FLUT/FORM) has been developed as a new therapy option. This integrated analysis of data from up to five randomised, double-blind, parallel-group studies assessed the efficacy of FLUT/FORM in terms of improvement in lung function.
Method: Adults and adolescents with mild, moderate or severe asthma treated for 8 or 12 weeks with FLUT/FORM (100/10, 250/10 or 500/20 µg, twice daily (b.i.d.); n=641) or the equivalent nominal dose of FLUT (100, 250 or 500 µg, b.i.d.; n=643; five studies) or FORM monotherapy (10 µg, b.i.d.; n=345; three studies), were included in this study.
Results: Superiority of FLUT/FORM was demonstrated by greater improvements in lung function compared with its individual components alone. FLUT/FORM compared to FORM showed significantly greater improvements in lung function as measured by change in pre-dose FEV_1 from baseline to study end (least-squares [LS] mean difference was 0.13 l [95% CI 0.07 to 0.19; p<0.001]). FLUT/FORM was also superior to FLUT with regard to change in FEV_1 from pre-dose at baseline to 2 h post-dose at study end (LS mean difference was 0.15 L [95%CI 0.10 to 0.19; p<0.001]).
Conclusion: Fluticasone/formoterol combination therapy is superior to either component administered alone in improving lung function for patients with a range of asthma severities.
Conflict of interest and funding: This abstract is an encore submission and parts of it were first presented at the BTS Congress 2011. David Price has consultant arrangements with Boehringer Ingelheim, GlaxoSmithKline, Merck, Mundipharma, Novartis, Cheisi and Teva. He or his research team have received grants and support for research in respiratory disease from the following organisations in the last 5 years: UK National Health Service, Aerocrine, AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline, Merck, Mundipharma, Novartis, Nycomed, Pfizer, Chiesi and Teva. He has spoken for: AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Merck, Mundipharma, Pfizer and Teva. He has shares in AKL Ltd which produces phytopharmaceuticals. He is the sole owner of Research in Real Life Ltd. Alberto Papi has consultant arrangements with Chiesi, GlaxoSmithKline, Merck, Mundipharma, Sunovion, Teva, Zambon. He or his research team have received grants and support for research in respiratory disease from the following organisations in the last 5 years: AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Merck, Novartis. He has spoken for: AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Merck, Mundipharma, Nycomed, Novartis, Pfizer. Kirsten Kaiser works for Skye Pharma; Birgit Grothe, Tammy McIver and Mark Lomax all work for Mundipharma Research Limited.

Corresponding author: Professor David Price **Email:** david@respiratoryresearch.org

302: Real-world impact of therapy change on asthma control

Small I, Price D, Haughney J, Ryan D, Gruffydd-Jones K, Musgrave S, Chisholm A, Brockman J, Lavorini F, Papi A
General Practitioner, Peterhead, UK

Aim: Asthma therapy reviews aim to minimise side-effects and achieve cost-effective asthma control. We compared markers of asthma control in patients moving from existing fixed-dose combination inhaled corticosteroid/long-acting beta2agonist (FDC ICS/LABA) therapy to beclomethasone dipropionate/formoterol (BDP/FOR; Fostair 100/6) without increasing ICS dose following a therapy review.
Method: Utilised the UK's Optimum Patient Care Research Database to identify primary care patients (18–80yrs) with asthma (diagnostic code and/or ≥2 asthma prescriptions in the last year) prescribed BDP/FOR at the same or lower (BDP-equivalent) ICS daily dose following a review of existing ICS/LABA therapy. Asthma control measures were evaluated over the year immediately before and after BDP/FOR initiation: proxy asthma control: absence of hospital attendance/admissions, out of hours consultation, outpatient department attendance/admission for asthma; acute oral steroid prescriptions; primary care consultations for lower respiratory tract infections; short-acting beta2agonist (SABA) use; exacerbations: asthma hospital attendance and/or Accident&Emergency admission, and/or acute oral steroid courses.
Results: In the year immediately before their therapy review, 65% (n=92) of 141 eligible patients achieved proxy asthma control, increasing to 77% in the year immediately after BDP/FOR initiation (p=0.01 Wilcoxon). The percentage of patients using ≥200mcg SABA daily reduced from 36% (n=51) in the year before BDP/FOR initiation to 27% (n=38) the following year (p=0.04). Exacerbation prevalence also reduced following BDP/FOR initiation, with 21% (n=29) of patients having at least one exacerbation in the year before BDP/FOR initiation compared with 17% (n=24) in the following year (p=0.187).
Conclusion: These preliminary data suggest no deterioration in markers of asthma control and that initiating BDP/FOR can be a valid therapy change in real-world patients on existing FDC ICS/LABA therapy.
Conflict of interest and funding: Co-funded by Research in Real Life Ltd and Chiesi Ltd.
Corresponding author: Professor David Price

243: Zoned asthma action plan (Zaap) - a self-assessment tool for patients with asthma

Parkes J, Findlay J, Ward A, Richardson M.

Research question: Can the implementation of Zaap help to reduce admissions to inpatient services or outpatient activity?
Background: Zaap is a self-assessment tool designed by a local GP to assist people with asthma to assess and manage their own symptoms. In the first phase of the project, Zaap was piloted in an independent GP surgery with 162 patients over an 18 month period. The findings indicate a clear correlation between the accuracy of the card and the patient's ability to self-assess and manage their symptoms. The aim of Phase 2 is to extend the implementation of the card to a greater number of GP surgeries [n=10] across the county to explore if its implementation can lead to reductions in admissions to hospital or out-patient activity.
Possible methodology: The aim is to recruit c.1000 patients, into a control group and study group, across 10 GP surgeries to participate in Phase 2 of the study. The Zaap card will be issued to participants in the study group of randomly assigned participating surgeries. All the participants will be initially assessed to record a baseline of the level of their asthma symptoms. They will complete a questionnaire at 8 weeks and 6 months to re-assess their symptom levels. A comparison of the results from both groups will indicate the likelihood of the implementation of Zaap to reduce admissions to hospital or the need for out-patient treatment.

Questions to discuss: a)Can the implementation of Zaap reduce admissions to inpatient services and outpatient activity? b)Can self-assessment tools provide a common language for patient and GP?
Conflict of interest and funding: No known conflicts of interest. Funding is being sought for Phase 2.
Corresponding author: Dr Jacqueline Parkes **Email:** jackie.parkes@northampton.ac.uk

S6 COPD general, Thursday 26 April 2012 14.30-15.30 in Moorfoot

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136: Predicting COPD by symptoms and risk factors: creation and validation of the [SRF-COPD] scale

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1 Lebanese University - Faculties of Pharmacy & of Public Health

Aim: Our aim is to create and validate a tool for COPD diagnosis without spirometry, in both epidemiological and clinical settings
Method: Data from two studies were taken, one epidemiological for development and the other clinical for validation. A reduction of chronic respiratory symptoms was done, leading to the creation of a COPD symptoms index. A logistic regression served to select the risk factors that were associated to COPD, in addition to symptoms. Its rounded coefficients were used to generate the SRF-COPD scale. The latter was then dichotomized by ROC curves and validated in both settings. Further distribution was generated to differentiate between COPD and respiratory diseases other than COPD in symptomatic individuals.
Results: We were able to create and validate a tool for COPD screening with excellent properties, comprising twelve items from sociodemographic characteristics, previous and actual toxics exposure and smoking history, in addition to chronic respiratory symptoms. In the clinical setting (COPD versus healthy individuals), the Area Under Curve was 0.945 at threshold 10, while the sensitivity was 84.9% and specificity was 90.2%; the Positive Predictive Value (PPV) was 82% and the Negative Predictive Value (NPV) was 92.8%. In the sample of symptomatic individuals (COPD individuals versus others with respiratory symptoms but no COPD), the PPV=78% and NPV=71.4%. The score was also inversely and linearly correlated to FEV1/FVC.
Conclusion: We were able to create and validate a tool for COPD screening with excellent properties in both epidemiological and clinical settings, mainly on symptomatic individuals. Prospective studies would be necessary to further validate this scale.
Conflict of interest and funding: None
Corresponding author: Professor Mirna Waked **Email:** mirnawaked@hotmail.com

146: Prognosis in relation to diagnostic criteria for airflow obstruction in middle-aged smokers.

Akkermans RP, Biermans MC, Robberts B, Ter Riet G, Jacobs JE, van Weel C, Wensing MJP, Schermer TR
Radboud University Nijmegen Medical Centre, Nijmegen, the Netherlands

Aim: To establish which cut-off point for the FEV_1/FVC (i.e., the fixed 0.70 or a gender and age-specific cut-off point) best predicts accelerated lung function decline and exacerbations in middle-aged smokers.
Method: We performed secondary analyses on the Lung Health Study dataset. 4,045 smokers aged 35 to 60 years with mild to moderate obstructive pulmonary disease were subdivided into categories based on presence or absence of obstruction according to the fixed and/or gender and age-specific (i.e., lower limit of normal, or LLN) FEV1/FVC cut-off points. Postbronchodilator FEV1 decline served as primary outcome to compare subjects between the respective categories, exacerbation risk as secondary outcome.
Results: 583 subjects (14.4%) were non-obstructed and 3,230 subjects (79.8%) were obstructed according to both FEV1/FVC cut-off points. 173 (4.3%) subjects were obstructive according to the fixed but not according to the LLN cut-off point('discordant' subjects). Mean postbronchodilator

FEV1 decline was 41.8 (SE 2.0) ml/year in non-obstructive subjects, 43.8 (3.8) ml/year in discordant subjects, and 53.5 (0.9) ml/year in obstructive subjects (p<0.001). The obstructed category showed the highest proportion of subjects with one or more exacerbations (26.8%) compared to the other two categories (15.0% and 17.7%).
Conclusion: Our study showed that subjects in the discordant category showed a less accelerated FEV_1 decline than those in the obstructed category. Gender and age should be taken into account when assessing airflow obstruction in middle-aged smokers.
Conflict of interest and funding: R. Akkermans, M. Biermans, B. Robberts, G. ter Riet, J. Jacobs and M. Wensing have no declared competing interests. T. Schermer has received reimbursement for attending symposia and funding for research from GlaxoSmithKline. C. van Weel's department has received unrestricted research funding from various pharmacy industries for research in asthma and COPD.
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177: Association between general practice prescribing and COPD admissions
Harries TH, Jones S, Seed P, Schofield P, White P
Department of Primary Care & Public Health Sciences, King's College, London
Aim: The effect of inhaled long-acting anti-muscarinics (tiotropium) and combination beta-agonist and corticosteroids (LABA+ICS) in reducing the frequency of exacerbations and admissions of Chronic Obstructive Pulmonary Disease (COPD) has prompted large increases in their prescribing within UK general practice (GP). This study assessed the association between GP prescribing of these drugs and admissions for COPD exacerbations.
Method: Retrospective analysis of data from the Prescription Pricing Authority, Hospital Episode Statistics and the Quality and Outcomes Framework GP performance dataset, on all practices in 15 randomly selected English primary care trusts.
Results: Data were obtained for 682 practices, population served 4,700,000. 80,000 patients had a COPD diagnosis. Between 2006-2010 the mean quarterly spend on tiotropium per registered COPD patient increased from £24.17 to £46.56 (+93%), and that of LABA+ICS per patient registered increased from £1.82 to £2.65 (+46%), annual rates of increase of 13.8% [CI 6.9-7.4] and 7.4% [12.9-14.7] respectively. There was wide variation in drug prescribing between practices, with a fifty-fold difference between the highest and lowest prescribers. From 2002-2010 the mean annual rates of COPD admissions per patient≥45 years per practice was 0.0068, and of patients admitted per patient≥45 years per practice was 0.0045, with no significant variation over time in either rate. There was no association between the rates of prescribing of tiotropium or of LABA+ICS and the rate of COPD admissions.
Conclusion: Rates of COPD admissions in English general practices have not changed in nine years despite large increases in prescribing of tiotropium and LABA+ICS. High prescribing practices did not have lower admission rates than low prescribers, raising questions about the cost-effectiveness of these drugs in everyday practice.
Conflict of interest and funding: No conflicts of interest TH is supported by an NIHR in-practice fellowship
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265: Overtreatment of COPD with inhaled corticosteroids: implications for safety and costs
White P, Thornton H, Pinnock H, Georgopoulou S, Booth HP.
King's College London, King's Health Partners, Department of Primary Care and Public Health Sciences, London, United Kingdom
Aim: Combined long-acting beta agonists and corticosteroids (LABA+ICS) are the most costly drugs in England. In COPD ICS are associated with side-effects including risk of pneumonia. We examined the risks and costs associated with overuse of ICS in COPD.
Method: Data were extracted from the electronic and paper records of 41 London general practices

(population 310,775) including spirometry, medications and exacerbations. Severity was classified by Global Initiative for Chronic Obstructive Lung Disease (GOLD) stage. Prescribing was assessed.
Results: In 3537 patients with a diagnosis of COPD spirometry was recorded for 2458(69%), of whom 709(29%) did not meet GOLD criteria. 1749(49%) with a confirmed diagnosis were analysed: 8.6% under-treated, 37.7% over-treated. Over-prescription of ICS in GOLD stages I or II (n=403, 38%) and in GOLD III or IV without exacerbations (n=231, 33.6%) was common. An estimated 12 cases (95% CI 7-19) of serious pneumonia were likely among 897 patients inappropriately treated in the preceding year. 535 cases of overtreatment involved LABA+ICS with a mean per patient cost of £553.56/year.
Conclusion: The potential for harm and the unjustified costs due to over-prescription of ICS (or LABA+ICS) in over a third of confirmed COPD patients in primary care give considerable cause for concern.
Conflict of interest and funding: This study was funded by the Dunhill Medical Trust. PW has received support for attending the European Respiratory Society Annual Congress from GSK and from Pfizer, and for attending the biennial International Primary Care Respiratory Group Congress from Boehringer Ingelheim and from Pfizer. HP has received speaker fees from Astra Zeneca, fees for lecturing or attending advisory groups from GlaxoSmithKline, AstraZeneca, Boeringher Ingelheim, and been sponsored to attend conferences by AstraZeneca, Boeringher Ingelheim/Pfizer, Napp pharmaceuticals
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230: To compare difference in Fractional of exhaled Nitric Oxide (FeNO) between COPD patients with or without positive bronchodilatation test

Nguyen NV, Le TTL, Chavannes NH , Price D
Research question: Are FeNO significant different between COPD patients have and have not positive bronchodilatation tests?
Background: COPD was defined as not full recovery obstruction of the airway. Some COPD patients have positive bronchodilatation tests but some others have negative ones
Possible methodology: Cross-sectional descriptive study. FeNO will be measured by Niox Mino portable device of Aerocrine company. COPD patients will be measured FeNO and do spirometry with bronchodilatation test at the same visit. Positive bronchodilatation test is defined as FEV1 improve at least 12% and 200ml after inhaled 400mcg albuterol via spacer. T test will be used to compare the means of FeNO between two groups have positive and negative bronchodilatation tests
Questions to discuss: We are looking for a subgroup that might show a correlation between bronchodilatation and elevated FeNO.
Conflict of interest and funding: No conflict of interest, funding from IPCRG and University of Medicine and Pharmacy at Ho Chi Minh City, Viet nam
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232: To compare difference in Fractional of exhaled Nitric Oxide (FeNO) among asthma, COPD and asthma-COPD overlap patients in Ho Chi Minh city, Viet Nam

Nguyen NV, Le TTL, Chavannes NH , Price D
Research question: Are FeNO in asthma-COPD overlap patients significant different between asthma and COPD patients?
Background: There are patients with clinical respiratory symptoms and spirometry data that cannot be used to distinguish asthma and COPD. Some of them have both diseases called asthma-COPD overlap condition. Diagnosing this condition early will guide suitable treatment right time because asthma treatment requires steroid right after diagnosed but COPD treatment requires steroid at stage III or later only. FeNO can measure eosinophilic airway inflammation thus can predict the asthma feature in asthma-COPD overlap patients.
Possible methodology: Cross-sectional descriptive study. Asthma and COPD will be diagnosed based

on GINA and GOLD guidelines. Asthma-COPD overlap patients will be those diagnosed with COPD based on GOLD guidelines but have asthma history and/or allergy features, positive bronchodilatation test and DLCO less than lower limit of normal. Three groups of patients will be measured FeNO by Niox Mino portable device of Aerocrine company. DLCO will be measured only in those suspected asthma - COPD overlap condition. ANOVA test will be used to compare the means of FeNO among these three groups of patients.
Questions to discuss: We expect FeNO to be elevated in the two groups with an asthma component, but not in the COPD only group.
Conflict of interest and funding: No conflict of interest, funding from IPCRG and University of Medicine and Pharmacy at Ho Chi Minh City, Viet Nam
Corresponding author: Dr Vinh Nguyen **Email:** vinhnguyenmd@ump.edu.vn

S7 Patient education & self management, Thursday 26 April 2012 14.30-15.30 in Kilsyth

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118: Written asthma action plan: its effects on caregivers' management of children with asthma
Tan NC, Chen ZJ, Soo WF, Ngoh SHA, Tai BC
SingHealth Polyclinics, Singapore
Aim: Written asthma action plan (WAAP) is a written guide on self-management, which leads to favourable health outcomes in adult asthma patients. How WAAP impacts on the processes that lead to these outcomes in paediatric asthma is unknown. This study determined the effects of WAAP on caregivers' understanding of asthma symptoms, their use of asthma medications for their asthmatic children and acute physician visit.
Method: A questionnaire survey was carried out on caregivers of children who were managed at local public primary care centres. Chi-square test was used to determine the differences in outcomes between caregivers with (CW) and without WAAP (CNW), followed by logistic regression to adjust for potential covariates.
Results: 169 caregivers (75 CNW and 94 CW) were surveyed. CW were more likely to understand bronchoconstriction (AOR=4.51), felt capable (AOR=2.42), safe (AOR=2.3), with increased confidence (AOR=2.37) to change doses of inhaled medications during asthma exacerbation. CW perceived inhaled asthma medication to be safe (AOR=3.64), understood the use of controller medication (AOR=3.02) and were less likely to stop inhaled medication without first consulting their physician when their children were well (AOR=0.5). No statistical difference was noted between caregivers seeking acute medical consultation and confidence in managing their asthmatic children at home.
Conclusion: WAAP improved caregivers' understanding and utilization of key processes in managing their asthmatic children but did not affect their decision for acute physician visit.
Conflict of interest and funding: I declare that I have no conflict of interest in executing the study and publishing its results.
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258: Patient activation among COPD patients and implications for self-management support needs
Heijmans M, Rijken M, Rademakers J
NIVEL - Netherlands institute for health services research, Utrecht, The Netherlands
Aim: There is a growing awareness that patients should be more active in their own care. For COPD patients this can be challenging given the progressive course, disabling symptoms and frequent comorbidity. For healthcare providers it is not always clear to what extent patients are willing and capable to play an active role themselves or rather want support for their self-management. This study explores the level of patient activation in COPD patients and its association with selfmanagement support needs as perceived by patients themselves.
Method: a representative sample of 325 medically diagnosed COPD patients filled in the Patient Activation Measure (PAM) and rated the type and number of selfmanagement tasks and associated

support needs they encountered in daily life. The PAM evaluates the knowledge, skills and confidence essential to managing one's own disease and segments patients into one of four progressively higher activation levels.
Results: Almost 40% of the COPD patients were at the two lowest levels of activation indicating that they lack the motivation, knowledge and skills to perform selfmanagement activities independently. After adjusting for demographics and disease characteristics and the number of selfmanagement tasks, the level of patient activation contributed significantly to the prediction of selfmangement support needs as perceived by patients, with patients at lower levels of activation being more in need for support.
Conclusion: Insight into the level of patient activation may help to tailor the care to the support needs of COPD patients. Further research should examine the potential of the PAM as a screener for selfmangement support needs in clinical practice.
Conflict of interest and funding: This study was funded by the Dutch Asthma Foundation. The authors declare that they have no competing interests.
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208: The COPD Breathlessness Manual: a self-management intervention to reduce hospital admissions and improve psychological well-being
Howard, C, Dupont, S.
Central & North West London NHS Foundation Trust
Aim: To evaluate the effectiveness of a 5 week home-based cognitive-behavioural COPD breathlessness intervention (The COPD breathlessness manual) on health service use, health status and psychological well-being in COPD patients.
Method: Individuals identified through GP COPD registers in the London Borough of Hillingdon were invited to participate in the COPD breathlessness study. Those that opted in and rated themselves as 3,4 or 5 on the MRC dyspnoea scale were randomly assigned to an intervention group (COPD Breathlessness Manual) or control group (BLF educational booklets). Both programmes were undertaken at home over 5 weeks, facilitated by a health care professional. All participants received disease education, with those in the intervention group receiving additional psychological management techniques for anxiety, panic and depression. Retrospective data on Accident & Emergency (A&E) attendances and length of hospital stay was collected six months before and six months after the study. Participants also completed the Chronic Respiratory Questionnaire (self-reported) and the Hospital Anxiety and Depression Scale at the start and end of the study and at six weeks follow up.
Results: The intervention has resulted in substantial cost savings through a reduction in health care use (amounting to approximately £300 per patient per year). Positive feedback was received from participants in the intervention group who felt better able to manage their condition. Improvements were observed in mood and health status.
Conclusion: The cognitive-behavioural self-help COPD breathlessness intervention is a cost-efficient programme that improves self-management of COPD. The manual is amenable to use in the community (e.g. via community matrons, IAPT services). A 2 day training package is offered for health care professionals to become manual facilitators.
Conflict of interest and funding: No conflict of interest. 2 years funding obtained from the Innovations Department, Central & North West London NHS Foundation Trust.
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176: Practical problems in the use of inhalers – A call for patient education?
Seneviratne ALP, Samaranayake S, Siriwardene P, Paranavitane S, Wimalasekera S
Head Dept.of Family Medicine University of Sri Jayawardenepura Sri Lanka Council member of the PCRGSL
Aim: To recognize the specific practical problems need to be addressed to improve inhaler technique

To assess the improvement after addressing the practical problems.
Method: Cross sectional intervention study based on consecutive asthmatic patients attending general practice clinics. Patients asked to demonstrate the inhaler technique and Objective semi-structured questionnaire developed, using the GINA guidelines filled. Investigators were provided a Dummy MDI and a spacer for patients to demonstrate the use of inhaler. Frequency distribution analyzed. Chi square test, T score and P value calculated.
Results: 102 pMDI uses,mean age 31.3 years. Female to Male ratio 52/48. 88% use a inhaler daily as a preventer. 58% on the inhaler for more than 3 months.

Errors in MDI use	Frequency %
1.Inadequate shaking	17
2.Cap left	0
3.Wrong way of holding the inhaler/Spacer	12
4.Do not exhale	21
5.Secure mouth piece and lips tightly	08
6. Hand breath discordination	09
7.Do not hold the breath	15
8.Abrupt stop inhalation	13

A numerical score of 2 given to each question. This will give a range from 0-16. Statisticaly analyzed using the 'T score'. A mean was 14.14 with SD 2.84, indicating a good knowledge of inhaler technique. There was no significant difference in the mean of MDI uses with or without spacers. The Chi square (errors) in relation to the duration (p 0.574) and frequency (P 0.374) in MDI uses too did not show any statistical significance. No statistical significance in the P value to each error.
Conclusion: The knowledge of MDI uses is good. Needs improvement on identified specific areas.
Conflict of interest and funding: There is no conflict of interest. IPCRG bursary confirmed
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189: A Self-management Programme of Activity, Coping and Education for Chronic Obstructive Pulmonary Disease (SPACE for COPD): Development and initial findings.
Apps LD, Wagg K, Harrison S, Young H, Steiner M, Morgan MDL, Singh S
University Hospitals of Leicester NHS Trust, Leicester, UK
Aim: To develop and assess the effectiveness of a stand alone self-management manual for patients with Chronic Obstructive Pulmonary Disease (COPD).
Method: SPACE for COPD was developed with a multi-disciplinary team of healthcare professionals, patients with COPD and their carers. It is an A4 workbook that patients can use independently at home. All content was evaluated by individual patients and healthcare professionals as well as patient focus groups and carries the Crystal Mark awarded by the Plain English Campaign. Major themes identified were barriers and facilitators to exercise and self-management, disease experience and understanding of self-management as well as feedback about how self-management should be delivered and supported. The intervention was piloted in primary care, recruiting patients from GP COPD registers. Patients were eligible to take part if they had a diagnosis of COPD confirmed by spirometry with FEV1/FVC ratio of <70% and a score of 2-5 on the Medical Research Council Dyspnoea Breathlessness Scale.
Results: Thirty-seven participants were consented and received SPACE for COPD. Participants attended baseline and 6 week follow-up appointments and completed the Self- Report Chronic Respiratory Questionnaire (CRQ-SR), Incremental Shuttle Walk Test (ISWT), Endurance Shuttle

Walking Test (ESWT). Statistically significant improvements were observed for CRQ-SR Dyspnoea and ESWT. Dyspnoea showed a mean change of 0.67 (95% CI 0.23 to 1.11, p = 0.005). ESWT score increased by 302.25 seconds (95% CI 161.47 to 443.03, p<0.001).
Conclusion: A 'manual' based self-management approach delivered in primary care to patients with COPD improved exercise performance and quality of life.
Conflict of interest and funding: Development of SPACE for COPD and initial piloting was funded by the British Lung Foundation and Astra Zeneca. The authors have no conflict of interest to disclose.
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239: "Lite Touch" – piloting an innovative approach to promoting self management in COPD
Sparrius, C.
Edinburgh Community Respiratory Team, NHS Lothian, Scotland
Brief outline of context: The specialist physiotherapy-led Community Respiratory Team (CRT) provides a 7-day service managing acute exacerbations, supporting early discharge ,and providing home-based pulmonary rehabilitation for COPD patients in Edinburgh.
Brief outline of what change you planned to make: After two years experience of a full tele-monitoring service, we sought to identify for whom a "lighter touch" might be more appropriate.
Assessment of existing situation and analysis of its causes:: Despite a generally positive experience for both patients and the CRT, a full tele-monitoring service, as provided in the Telescot trial for 58 patients was unsustainable, and we sought a cost effective option to enable the service to continue.
Strategy for change:: We developed the 'Lite Touch' service. Patients with COPD are visited by a member of the CRT and given a personalised self management plan and a pulse oximeter. A dedicated phone number with answerphone was monitored by the CRT 7 days a week. In September 2011, 12 pilot patients were recruited.
Measurement of improvement: We monitored service usage and administered a self-completed questionnaire.
Effects of changes: After 4 months the CRT has received 14 calls via 'Lite Touch' and all these patients have required rapid intervention for the management of an acute exacerbation of COPD. 11 patients completed the questionnaire. 91% agreed that Lite Touch has "improved my confidence in managing my condition at home". 82% reported that "the technology has kept me out of hospital".
Lessons learnt: Patients love 'Lite Touch'! The service is being expanded in the light of this initial positive experience.
Message for others: 'Lite-touch' is potentially a cost-effective option for supporting self management.
Conflict of interest and funding: No conflict of interests and funding all provided by NHS Lothian.
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S8 Respiratory infections, Thursday 26 April 2012 14.30-15.30 in Harris

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163: Study on antibiotic prescription in children in primary care in the Balearic Islands. (Spain). 2005-2011. Can the management of respiratory infections be improved?
Angela Boqué. Pediatrician. MRCP. DCH
Centro de Salud de Son Pisà. Primary Health Care. Palma de Mallorca . Spain
Aim: Respiratory infections are the most frequent type of infection in pediatric patients. In primary care a great number of them are treated with antibiotics. Injustified use of antibiotics represents a serious health problem due to the induction of antomicrobial resistance. The study of antibiotic prescriptions in this age group can help professionals to improve their pharmacological management
Method: Quantitative study of five most prescribed antibiotics in pediatric patients in the Balearic Island from 2005-2011. Data on yearly DDD prescribed for amoxicillin, amoxicillin/clavulanic acid, clarithromycin, azithromycin and cefuroxime were obtained from the Ibsalut (Public Health Service)

pharmacological prescription database: GAIA-IB. Pediatric population changes have been considered. The data source being the INE (Instituto Nacional de Estadística).
Results: An important increase on DDD of amoxicillin, amoxicillin/clavulanic acid is confirmed. The maximum increase being of amoxicillin/clavulanic acid between 2007 and 2008. During this time a higher dosage of amoxicillin was recommended for empirical treatment of community adquired lower respiratory tract infections and OMA to overcome possible Streptococcus Pneumoniae resistance, being pneumococci the most common cause of pneumonia. In the following 3 years, amoxicillin DDD increases even further but amoxicillin/clavulanic acid DDD decreases. DDD of clarithromycin, azithromycin and cefuroxime show a steady decrease from 2005 to 2011.
Conclusion: The study of prescriptions of antibiotics used for pediatric population from 2005 to 2011 can help prescribers to adhere to evidence-based guidelines and improve the quality of prescription.
Conflict of interest and funding: None
Corresponding author: Dr. Angela Boqué **Email:** aboqueg@gmail.com

151: Community acquired pneumonia and vaccination against pneumococcal infection: reporting preliminary results *
Lionis C, Tsiligianni I, Duijker G, Vasilaki I, Bertsias A, Koumiotaki S, Ktistakis G, Lampiri I, Mathioudakis G, Papadakokostakis P, Stefanaki I, Tsakountakis N
Clinic of Social and Family Medicine, University of Crete
Aim: Community acquired pneumonia is a key issue in the medical literature and the role of general practice has been assessed as significant in the context of its treatment and prevention. In this study it has been examined the immunization coverage with the antipneumococcal vaccination for patients aged 50 years and above who were diagnosed with community-acquired pneumonia.
Method: Patients with an age of 50 years and above and who were residents of areas within the responsibility of all Health Centers of the province of Heraklion with signs and/of symptoms of lower respiratory tract infection and with a chest x-ray confirmed pneumonia, were recorded on an electronic database. An adapted questionnaire with information related to demographic data, underlying diseases, immunization status and the clinical symptoms were completed.
Results: Overall, in the period from March to November 2011, there were 55 recorded cases of community acquired pneumonia of which 26 were men and 29 were women. The mean age of women was 74.5 [51-89] and 75.5 for men [53-95]. Of these, 25 were hospitalized with an average duration of hospitalization of 7 days [2-16]. Only 4(16.7%) hospitalized patients were vaccinated with the antipneumococcal vaccination. Instead, patients who were not hospitalized had a relative higher percentage of vaccination coverage against the pneumococcal infection (31%).
Conclusion: The coverage of the population with the antipneumococcal vaccination still remains low in the vulnerable population and secondly the severity of community acquired pneumonia remains higher in those who are non-vaccinated.
Conflict of interest and funding: This project received a grant by the Pfizer pharmaceutical company
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324: Symptoms of respiratory tract infection and associated care-seeking in subjects with and without obstructive lung disease. The Tromsø Study: Tromsø 6
Melbye H, Joensen L, Risør MB, Halvorsen PA
General practice Research Unit, University of Tromsø, Norway
Aim: To describe the frequency of respiratory tract infection (RTI) symptoms in a general adult population, and how care-seeking is associated with the presence of obstructive lung disease
Method: Cross-sectional data including spirometry and self-reported chronic diseases were collected among middle-aged and elderly in the the Tromsø population survey (Tromsø 6). Self-reported RTI symptoms, consultation with doctors, and antibiotic use were the main outcome variables.
Results: Of 6414 included, 798 (12.4%) reported RTI symptoms last week. Such symptoms were reported less often by subjects aged 65 years or more than by younger participants (OR 0.82).

Current smoking (OR 1.65), low relf-rated health (OR 1.25), and reduced lung function (OR 1.40) were also independent predictors of RTI symptoms, which could be explained by an increased duration of symptoms. Among subjects with recent RTI symptoms, 5.1% also reported a consultation with a doctor, among those with bronchial obstruction by spirometry, who did not report asthma or COPD, this frequency was 2.4%. Antibiotics were more frequently taken when asthma or COPD was reported (13.7%), but not in subjects with bronchial obstruction who did not report these diseases (7.2%).
Conclusion: RTI symptoms seldom led to consultation with a doctor, not even in subjects with obstructive lung disease. Antibiotics were more frequently taken in subjects with self-reported asthma or COPD, but not in subjects with bronchial obstruction unknown ro them.
Conflict of interest and funding: No conflicts of interest
Corresponding author: Professor Hasse Melbye **Email:** hasse.melbye@uit.no

327: Knowledge and attitudes of community pharmacists about antibiotic resistance - a pilot study.
Roque F, Herdeiro MT, Soares S, Cruz e Silva OAB, Breitenfeld L, Figueiras F.
Centre for Cell Biology, Health Sciences Department, University of Aveiro, Research Unit for Inland Development, Polytechnic Institute of Guarda, University of Beira Interior, Portugal
Aim: This study sought to evaluate reliability and reproducibility of a questionnaire on knowledge and attitudes of community pharmacists about antibiotic use and microbial resistance.
Method: A structured questionnaire was constructed accordingly dates obtained during a qualitative study, designed with community pharmacists focus group sessions. Our research was developed in an area of Statistically Territorial Unity Nomenclature (NUT) II of Portugal, defined by Health Northern Regional Administration (ARS-N), which includes five geographical districts. We have informed ARS-N about this study. To obtain information of all geographical area, this survey occurred in the five districts. Questionnaires were administered to each pharmacist twice, at an interval of 2 to 4 weeks. Attitudes were measured using a continuous visual analog scale, with answers scored from 0 (total disagreement) to 20 (total agreement). Questionnaire reproducibility was determined using the intraclass correlation coefficient (ICC), and reliability with Cronbach´s alpha calculation.
Results: A total of 43 pharmacists participated in this survey. Questionnaire evaluated 17 attitudes that were grouped in four dimensions of attitudes to antibiotic resistances: perception of the problem, attribution of responsibilities, confidence and factors associated to dispensing habits. All evaluated attitudes demonstrated good ICC and the reliability (Cronbach's alpha) was 0,624.
Conclusion: Cronbach´s alpha and ICCS obtained from attitudes allow us to conclude that this questionnaire is reproducible. Thus we could say that our questionnaire is valid to evaluate the attitudes and knowledge of pharmacists, since it allows to detect differences among these health professionals that work in primary care.
Conflict of interest and funding: Supported by Fundação para a Ciência e Tecnologia (FCT). Funding references: PTDC/SAU-ESA/105530/2008.
Corresponding author: Miss Fátima Roque **Email:** froque@ipg.pt

332: Knowledge and attitudes of primary care physicians about antibiotic resistance - a pilot study.
Herdeiro MT, Roque F, Ferreira M, Figueiras A
Centre for Cell Biology, Health Sciences Department, University of Aveiro (CBC/UA); Center for Health Technology & Information Systems Research (CINTESIS/CESPU); Health Technology Research Center (CITS/CESPU), Portugal.
Aim: This study sought to evaluate reliability and reproducibility of a questionnaire on knowledge and attitudes of primary care physicians about antibiotic use and microbial resistance.
Method: Questionnaire was designed after extent bibliographic research, and taking account previous studies developed in Spain. Our research was developed in an area of Statistically

Territorial Unity Nomenclature (NUT) II of Portugal, defined by Health Northern Regional Administration (ARS-N), which includes five geographical districts. We have informed ARS-N about this research, and physicians included in this study work in public primary care settings. Questionnaires were administered to each physician twice, at an interval of 2 to 4 weeks. Attitudes were measured using a continuous visual analog scale, with answers scored from 0 (total disagreement) to 20 (total agreement). Questionnaire reproducibility was determined using the intraclass correlation coefficient (ICC), and reliability with Cronbach´s alpha calculation.
Results: A total of 32 primary care physicians participated in this survey. Questionnaire evaluated 17 attitudes that were grouped in four dimensions of attitudes to antibiotic resistances: perception of the problem, attribution of responsibilities, confidence and, factors associated to prescription habits. All attitudes evaluated demonstrated good ICC and the reliability (Cronbach's alpha) was 0,711.
Conclusion: Cronbach's alpha and ICCs obtained from attitudes allow us to conclude that this questionnaire is reproducible. Thus we could say that our questionnaire is valid to evaluate the attitudes and knowledge of primary care physicians, since it allows detect differences among this health care professionals.
Conflict of interest and funding: Supported by Fundação para a Ciência e Tecnologia (FCT). Funding references: PTDC/SAU-ESA/105530
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113: National estimates of vaccine effectiveness in pandemic influenza (VIPER): Scottish observational cohort study to assess the effectiveness of the H1N1 (2009) vaccine
Simpson CR, Ritchie LD, Robertson C, Sheikh A, McMenamin J
The University of Edinburgh, Edinburgh, United Kingdom
Aim: To investigate the effectiveness of the pandemic (H1N1) 2009 influenza vaccine in a nationally representative sample of the Scottish population during the 2009/10 vaccination programme.
Method: We undertook a novel linkage of patient level primary care, hospital records, death certification and virological swab data (23,893,359 person-days of observation) using the unique Community Health Index number. Vaccine effectiveness was estimated by determining laboratory-confirmed cases of influenza (H1N1) 2009 using reverse transcription polymerase chain reaction from 1,357 people, and hospitalization and deaths resulting from influenza-related morbidity (i.e. influenza, pneumonia, chronic obstructive pulmonary disease and cardiovascular disease) in vaccinated (n=38,296) and unvaccinated patients (n=208,882) stratified by age, sex, socioeconomic status and clinical at-risk populations.
Results: Reverse transcription polymerase chain reaction data revealed that the effectiveness of the vaccine program for preventing influenza was 77.0% (95%CI 2.0-95.0). Its effectiveness in preventing emergency hospitalizations and mortality from influenza-related conditions was 19.5% (95%CI 4.0-32.6) and 51.5% (95%CI 27.5-67.6), respectively.
Conclusion: The introduction of pandemic (H1N1) 2009 influenza vaccine in Scotland during 2009/10 was associated with a high degree of protection against pandemic influenza, and resulted in a substantial reduction in hospital admissions and death from influenza-related conditions. These findings from a nationally representative sample help strengthen the international evidence base for the effectiveness of H1N1 vaccination programs and the future distribution of pandemic influenza vaccine.
Conflict of interest and funding: No conflicts of interest. This study was funded by the National Institute for Health Research
Corresponding author: Dr Colin Simpson **Email:** c.simpson@ed.ac.uk

Thursday 26 April 2012 (P1 COPD general)

105: COPD exacerbations and unscheduled call-back home visits in general practice

Cervoni E
Central Lancashire PCT NHS, Leyland, UK
Aim: This study serves to identify the reasons for unscheduled call-back home visits in General Practice. Its purpose is to highlight inadequacies and plan strategies to reduce re-attendance.
Method: In a semi-rural Primary Care setting covering a population of 8089 patients, during a 6 months period, the clinical records of all patients requesting an unscheduled GP call-back home visit within 7 days of the initial home visit were identified and scrutinized.
Results: Call-back home visits accounted for 9.8% of patient domiciliary encounters with the poorly mobile elderly population accounting for most of the visits. Patients with COPD exacerbation constituted the largest group of call-back home visits.
Conclusion: Call-back home visits do not constitute a significant proportion of the daily GP home visits workload and a well-integrated Nursing Team/GP seems to be the best positioned to deal with this type of requests.
Conflict of interest and funding: None
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133: NVA237 once daily offers rapid and clinically meaningful bronchodilation in COPD patients that is maintained for 24-hours: the GLOW1 trial

D'Urzo A, Ferguson G, Martin C, Alagappan VKT, Banerji D, Lu Y, Horton R, Overend T
Department of Family and Community Medicine, University of Toronto, Ontario, Canada
Aim: NVA237 (glycopyrronium bromide) is an inhaled long-acting muscarinic antagonist (LAMA) in development for the once-daily (q.d.) treatment of COPD. The GLOW1 study evaluated the efficacy and safety of NVA237 in patients with moderate-to-severe COPD.
Method: Patients were randomised (2:1) to 26 weeks double-blind treatment with NVA237 50µg q.d. or placebo (PBO). Study drugs were administered via a single-dose dry powder inhaler (Breezhaler®). Primary efficacy endpoint: trough FEV_1 (mean of 23h 15min and 23h 45min post-dose values) vs PBO after 12 weeks.
Results: 822 patients were randomised; mean age was 63.9 years, mean post-bronchodilator FEV_1 was 55% predicted. 80.5% completed the study. At Week 12 there was a statistically significant and clinically relevant difference between NVA237 vs PBO in mean trough FEV_1 (108mL; $p<0.001$). Trough FEV_1 was also significantly higher at Day 1 and Week 26 (treatment difference: 105mL and 113mL, respectively; $p<0.001$). Serial spirometry demonstrated statistically superior ($p<0.001$) and clinically meaningful improvements in FEV_1 with NVA237 vs PBO at all timepoints on Day 1, Week 12 and Week 26. NVA237 had a rapid onset of action with an increased FEV_1 of 93mL at 5 min and 144mL at 15 min vs PBO after the first dose on Day 1 ($p<0.001$). Overall, the incidence of adverse events (AEs) was similar between treatment groups (NVA237: 57.5%; PBO: 65.2%).
Conclusion: NVA237 50µg once daily was generally safe and well tolerated. Improvements in bronchodilation were rapid, clinically meaningful and maintained for 24 hours throughout the study.
Conflict of interest and funding: The study was sponsored by Novartis Pharma AG, Basel, Switzerland. AD has received research, consulting and lecturing fees from GlaxoSmithkline, Sepracor, Schering Plough, Altana, Methapharma, AstraZeneca, ONO pharma, Merck Canada, Forest Laboratories, Novartis Canada/USA, Boehringer Ingelheim (Canada) Ltd, Pfizer Canada, SkyePharma, and KOS Pharmaceuticals. GF has performed research funded by Novartis and received honoraria for participation in advisory panels pertaining to various COPD medications for Novartis Pharma AG. TO, CM, VKTA and RH are employees of Novartis.
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134: Once-daily NVA237 improves symptoms, and reduces COPD exacerbations and associated hospitalisations: the GLOW1 trial

D'Urzo A, van Noord JA, Martin C, Horton R, Banerji D, Lu Y, Alagappan VKT, Overend T
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Aim: Symptoms profoundly impact daily life of COPD patients. We assessed the influence of the once-daily (q.d.) long-acting muscarinic antagonist (LAMA) NVA237 (glycopyrronium bromide) on symptoms and exacerbations in patients with moderate-to-severe COPD.
Method: Patients were randomised (2:1) to 26 weeks double-blind treatment with NVA237 50µg q.d. or placebo (PBO) via a single-dose dry-powder inhaler (Breezhaler®). Efficacy was assessed by breathlessness on the transition dyspnoea index (TDI), HRQoL via the St. George's Respiratory Questionnaire (SGRQ), and rescue medication use. The effect on COPD exacerbations and related hospitalisations was also assessed.
Results: 822 patients were randomised; 80.5% completed. NVA237 significantly increased total TDI focal score vs PBO at Week 26 (difference 1.04, 95% confidence interval [CI]:0.583–1.504; p<0.0001); exceeding the minimum clinically important difference ([MCID] ≥1 point). Significantly more patients achieved MCID in TDI score with NVA237 (61.3% vs 48.3%; odds ratio [OR] 1.74, 95% CI:1.249–2.415; p=0.001). NVA237 significantly reduced SGRQ total score (–2.81; p=0.004); significantly higher % of patients achieved clinically meaningful improvement in SGRQ (≥4point reduction) (56.8% vs 46.3%; p=0.006). NVA237 significantly reduced rescue medication use at Week 26 (–0.46 puffs/day, p=0.005). NVA237 significantly prolonged time to first moderate/severe COPD exacerbation by 31% (hazard ratio [HR] 0.69, 95% CI:0.50–0.949; p=0.023) and time to first severe COPD exacerbation necessitating hospitalisation (HR 0.35, 95% CI:0.141–0.857; p=0.022). NVA237 significantly reduced hospitalisations due to COPD exacerbation (OR 0.34; p=0.024).
Conclusion: Once-daily NVA237 provided significant improvements in dyspnoea and SGRQ total score, with lower rescue medication use, and reduced the risk of exacerbations and associated hospitalisations versus PBO.

Conflict of interest and funding: The study was sponsored by Novartis Pharma AG, Basel, Switzerland. The study was sponsored by Novartis Pharma AG, Basel, Switzerland. AD has received research, consulting and lecturing fees from GlaxoSmithkline, Sepracor, Schering Plough, Altana, Methapharma, AstraZeneca, ONO pharma, Merck Canada, Forest Laboratories, Novartis Canada/USA, Boehringer Ingelheim (Canada) Ltd, Pfizer Canada, SkyePharma, and KOS Pharmaceuticals. JvN has received research support from Boehringer Ingelheim, Chiesi, Novartis and GlaxoSmithKline. CM, RH, DB, YL, VKTA and TO are employees of Novartis.
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135: Validation of the respiratory toxics exposure score (RTES) for chronic obstructive pulmonary disease screening

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Lebanese University, Beirut, Lebanon Faculty of Pharmacy, Faculty of Public Health
Aim: Our aim is to evaluate the validity of exhaled carbon monoxide (CO) and of a newly-created score as markers of Chronic Obstructive Pulmonary Disease (COPD).
Method: The CO level was measured in a derivation sub¬sample of a cross-sectional study and linked to COPD diagnosis; its predictors were evaluated, and a scale was constructed. It was evaluated in a validation subsample and in a clinical setting.
Results: Individuals with COPD had higher CO levels than healthy individuals. CO level significant predictors were cigarettes per day, waterpipes per week, lower age, male gen¬der, living close to diesel exhaust, heating home with the use of diesel, and having indoor family smokers. A score composed of CO predictors was able to significantly predict COPD (Ora = 4–7.5).
Conclusion: Coupled with the clinical judgment of physicians, this scale would be an excellent low-cost tool for screening COPD, in absence of spirometry.
Conflict of interest and funding: None

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139: Short and long term benefits of a pulmonary rehabilitation program in patients with COPD conducted exclusively at the Primary Health Care.

Fraga MM, Flor X, Lamarca L, Ostiz F

Research question: To evaluate the impact of a pulmonary rehabilitation program, carried out integrally at the Primary Care, in relation with the effort capability and the quality of life of moderate-severe COPD patients.

Background: Althought is known that the pulmonary rehabilitation program at hospital improves the quality of life and the effort capability of moderate-severe COPD patients, in Primary Care there are few studies on this issue.

Possible methodology: Simple blinded randomized clinical trial in patients with moderate to severe COPD (GOLD II - III) with criteria of clinical stability. These patients will be allocated in two groups of 70 patients (intervention and control groups). Initially, all patients will perform 4 sessions of group Health Education of 60 minutes each, 2 sessions per week, given by Primary Care nurses. In addition, the

intervention group will accomplish a group program of respiratory physiotherapy and muscular training, given by physiotherapists also pertaining to the Primary Health Care. It will consist on 24 sessions of 60 minutes each, 3 sessions per week during 8 weeks, in groups of 7-8 patients. Each session will consist of 30 minutes of training with a cycloergometer, and 30 minutes of respiratory physiotherapy and muscular training of the upper extremities and the shoulder waist. The following variables will be evaluated at baseline, at two and at twelve months follow-up: dyspnea (BMRC), BODE and ADO indexes, effort capability (6 minutes walk test), strength of inferior extremities, quality of live (CRQ), number of exacerbations and/or hospital admissions.

Questions to discuss: Could pulmonary rehabilitation programs developed in Primary Care improve the quality of life in the same way as hospital programs do?

Conflict of interest and funding: No conflict of interest

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175: Finding the Missing Millions, a pragmatic approach

Small IR, Allan S, Bruce A

Peterhead Health Centre

Brief outline of context: Patients with COPD are often diagnosed late in their disease. Population screening is costly. There is a need to easily identify high risk groups to improve diagnostic efficiency.

Brief outline of what change you planned to make: Identify smokers and ex smokers at risk of COPD, by winter use of antibiotics and steroids

Assessment of existing situation and analysis of its causes:: The practice COPD prevalence is 1.6%, lower than its demographics and socio-economics suggest. Other than on a case by case basis, there is no existing mechanism for early identification of patients

Strategy for change:: We performed a practice search using the VISION system, identifying all smokers and ex smokers over 45yrs (3029). We identified those who had received steroid (79) and concomitant antibiotic (52) treatment over the winter of 2010-11. after excluding those with existing asthma/COPD, the remainder (39) were filtered by their GP for extenuating factors. 36 patients were then invited for spirometry.

Measurement of improvement: 8 (22%) new COPD patients were identified (7 with mild or moderate obstruction), 9 (25%) normal spirometry, 14(39%) failed to attend, 5 (14%) had other issues.

Effects of changes: A simple labour light series of searches identified a group of patients, with a positive yield of 44% of actual spirometry performed

Lessons learnt: General Practitioners treat acute respiratory symptoms with antibiotics and steroids without referring for lung function testing. Filtering patients is an efficient way of improving spirometric return. Many patients do not wish to have lung function measured even when directly

invited.
Message for others: This is a quick nd effective way of finding COPD patients with mild and moderate disease
Conflict of interest and funding: None
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250: Identifying disease characteristics associated with sub-optimal care for COPD patients currently managed in a primary care setting receiving inhaled corticosteroid and long acting beta agonist fixed dose combination therapy
Small M, Broomfield S, Piercy J
Adelphi Real World, Macclesfield, UK
Aim: COPD is an increasingly common condition in the primary care population. Optimal care is dependent on improving primary care approaches to address the different effect of interventions on individual patients and poor relationships between symptoms and indices of disease severity. Real world data is used to assess symptom prevalence and exacerbation risk for patients receiving ICS/LABA FDC therapy-only, thus identifying disease characteristics that could help inform the extent of sub-optimal care within a primary care setting.
Method: Data were drawn from a real world cross-sectional study of consecutive patients diagnosed with COPD who were consulting primary care physicians undertaken in the USA and Europe in 2011.
Results: 375 patients met the inclusion criteria. Symptoms reported as prevalent over the past 4 week period were cough, shortness of breath when exercising and excess sputum production; reported by physicians in 56.8%, 41.1% and 36.8% of patients respectively. In addition, 41.6% of patients experienced one or more symptoms when getting up in the morning, particularly cough and sputum. Night-time disturbance was reported by 80% of patients with 30.1% reporting a constant lack of energy associated with their condition. A total of 36.8% of patients were reported by physicians as experiencing exacerbations with 53.7% of these patients experiencing 2 or more exacerbations in the last 12 months.
Conclusion: Efforts to increase the awareness of the type and time of day symptoms persist, particularly first thing in the morning, coupled with the evaluation of exacerbation risk based on exacerbation history could assist primary care physicians in identifying which patients require further therapeutic intervention.
Conflict of interest and funding: The authors acknowledge that Novartis commissioned this retrospective database analysis
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257: Early detection of COPD by the use of simple instruments in the Greek community
Ioannidis D, Kazakos S, Asteriadis C, Papadopoulos A, Tselios G, Dimopoulou S, Tsiligianni I
General Hospital of Kavala, Greece
Aim: To implement simple instruments for the early detection of COPD in the community.
Method: A pilot study has been conducted for COPD screening in three different settings of Greece: the rural area of Thassos island, the semi-urban area of Nea Peramos in Kavala prefecture and the urban area of Drama town. Subjects involved in the study were males and females, up to 80 years old, having a current or past smoking history (or none, if other identifiable risk factor for COPD existed, i.e. indoor air pollution) and no previous confirmed diagnosis for COPD. They have completed the IPAG COPD diagnostic questionnaire and they have undergone spirometry (after bronchodilation) both with a PIKO-6 device and a standardised spirometer (Vitalograph) according to American Thoracic Society/European Respiratory Society (ATS/ERS) recommendations. Non-parametric correlations among spirometry findings (FEV1, Tiffeneau ratio, FEV1/FEV6 for PIKO-6 device), age and the questionnaire scores have been calculated.
Results: 86 subjects were included into the study (47 males and 39 females), with mean values (±SD) of age: 51.95±13.05 years, FEV1 PIKO-6: 2.88±0.78 liters, FEV1 spirometer: 2.83±0.77 liters,

Tiffeneau ratio spirometer: 0.79±0.08, FEV1/FEV6 ratio PIKO-6: 0.78±0.07 and questionnaire score: 16.14±6.2. Spearman correlations (rho, with p<0.001) have shown positive correlations between spirometer and PIKO-6 device (rhoFEV1=0.933, rhoTiff=0.702) and negative correlations between age and score with spirometry findings on both devices (rho for both age and score –0.4 approx.). 9 subjects (10.46% of total) were found obstructive (Tiffeneau ratio ≤0.7) with mean age 64.55±10 and mean questionnaire score 21.33±4.45.
Conclusion: IPAG COPD diagnostic questionnaire and PIKO-6 device were found as reliable tools for detecting unrevealed COPD cases in the community
Conflict of interest and funding: None
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300: Experience of admission avoidance respiratory "Hot" clinic North Bristol Lung Centre, Southmead Hospital, UK
Yousaf M, Jamal W, Hameed M, Calvert J
North Bristol Lung Centre, Bristol
Brief outline of context: NHS budget and acute bed base reductions require development of new models of care preserving service quality whilst reducing costs and avoiding hospital admissions. The North Bristol Lung Centre has developed a comprehensive respiratory "Admission avoidance" service over the last 5 years.
Brief outline of what change you planned to make: The "Hot" clinic is a "one stop" "consultant led" same day service, assessing primary care referrals threatening admission, supported by dedicated CT and lung function slots and works closely with PCT funded Community Respiratory Nursing Team.
Assessment of existing situation and analysis of its causes:: Prior to the Hot Clinic, the existing "out-patient" system was too inflexible to provide rapid access to specialist advice when it was required by the patient and primary care resulting in unnecessary admissions.
Strategy for change:: The "Hot" clinic commenced in 2006. In 2011, restructuring doubled the capacity by extending clinic hours and allowed rapid access to diagnostic services and improved integration with community services.
Measurement of improvement: 736 patients were reviewed in 2011. 93% were judged as appropriate by a respiratory specialist. 90% were managed in the HOT clinic - avoiding an acute admission. The top diagnosis included COPD (153), Asthma (79), Bronchiectasis (77), LRTI (65) and Effusion (62).We performed 46 CTPA and 34 pleural procedures.
Effects of changes: The Hot clinic attracted largely appropriate referrals helping avoid 662 acute admissions – a saving of £1.4m.
Lessons learnt: Rapid access ambulatory clinics offer good care and outcomes, high patient satisfaction and financial dividends.
Message for others: Service re-design can lead to a responsive service with high quality care at lower cost.
Conflict of interest and funding: None
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314: Primary Care Early Diagnosis and Approach to the COPD: Family Health Program Experience in the city of Mauá, São Paulo, Brazil
Martins, S.M; Bressan, A. S. G; Morais, C. A.
MD, director of the family health program in the city of Maua - SãoPaulo - Brazil. coordinator of the working group of respiratory problems in Brazilian society of family and community medicine
Brief outline of context: COPD in Brazil keeps on growing in prevalence and mortality. The number of deaths increased in the last 20 years, representing an important means of spending to the health system while little recognized and underdiagnosed.
Brief outline of what change you planned to make: Prospective study of individuals aged 40 years and smoking history, submitted to a questionnaire and spirometry. The divulgation was made

through posters and active search. The diagnosis was confirmed under the presence of VEF1/CVF < 70%.
Assessment of existing situation and analysis of its causes:: 200 patients were interviewed in 30 days. 120 presented COPD risk and were referred for spirometry. 82 patients attended to it. Active smoking prevalence was 92.5%, while 7.5% were former smokers. 02 individuals couldn't complete the exam.
Strategy for change:: Active search.
Measurement of improvement: In Progress.
Effects of changes: In Progress.
Lessons learnt: The aim was the early diagnosis of COPD. The Spirometry allowed it. The number of moderate and severe cases was virtually identical and all discussed with the pulmonologist who supervised treatment plan. Two critically ill patients needed specialized treatment. The remaining patients are still under treatment in the primary care. Early diagnosis allows intervention on risk factors and treatment, contributing to the reduction of high social and financial costs, improving life quality, in the health status and functional capacity of the patients.
Message for others: we diposição for discussion.
Conflict of interest and funding: there is no
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Thursday 26 April 2012 (P2 Asthma treatment)

125: Psychosocial factors in the morbidity of severe asthma
Pooler A, Priest HM
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Aim: To examine if psychosocial variables; i.e. personality, ways of coping, locus of control, levels of anxiety and depression and levels of social deprivation, could predict levels of lung function and numbers of exacerbations in severe asthma.
Method: Participants all had severe asthma. Data on numbers of exacerbations was collected retrospectively over an 8 year period and levels of lung function assessed (FEV1% predicted and FEV1/FVC% predicted). Predictor variables measured using EPQ (personality), HADS (anxiety and depression), MHLOC (locus of control), WCC (ways of coping) and an individual social deprivation score. Correlation and multiple regression analysed the relationship between the predictor variables and the criterion variables of levels of lung function and numbers of exacerbations.
Results: n=102 from a severe asthma clinic in the Midlands. High levels of depression and moderate levels of social deprivation showed significant relationships to high numbers of exaerbations (R^2=0.458, Beta value-0.636, p=0.009 and R^2=0.581, Beta value=0.280, p=0.009 respectively). No relationship was found between the predictor variables and levels of lung function
Conclusion: There are predictor variables which have a significant influence on the morbidity of severe asthma, which cannot be treated by conventional management techniques. Further work needs to be done to explore these variables and to develop management strategies for them in people with severe asthma
Conflict of interest and funding: none
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162: Reducing adult asthma re-attendances at St Thomas' Hospital
Newell K, Betal D, Hume S, Wills R, Reay V, Robson C, Pandya A, Wall H and Corrigan C
Guy's and St Thomas' NHS Trust
Brief outline of context: A 2010 audit showed high levels of re-attendance for asthma in A&E. Quantitative and qualitative investigation suggested the reasons for re-attendance were amenable to prevention.

Brief outline of what change you planned to make: To reduce the number of adult re-attenders to A&E within 30 days by 20% from the 2010/11 baseline by March 2012
Assessment of existing situation and analysis of its causes:: Data showed that between May 2010 and April 2011, 75 patients accounted for 218 attendances at A&E. Over half re-attended within 30 days of a previous attendance. Semi-structured telephone interviews revealed why patients were not managing their asthma, why they go to A&E and what help they wanted from healthcare professionals.
Strategy for change:: The project is led by a RNS, supported by NHS Improvement. Using the model for improvement a diagnostic phase involved acute and primary care staff and patients identifying causes for attendance. Small scale innovations are now being tested using a plan, do, study, act approach to prevent future re-attendance.
Measurement of improvement: Number of re-attendances.
Effects of changes: The main effect will be improved health outcomes and quality of life for re-attenders with asthma. The hospital will benefit from saving resources.
Lessons learnt: The reasons why people with asthma re-attend A&E are multi-factorial.
Message for others: Healthcare professionals need to provide: inhaler technique training; medicines information; signposting; an individualised asthma action plan. It's important to raise patient expectation about the ability to manage asthma and to offer smoking cessation advice.
Conflict of interest and funding: None
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219: Training and feedback of prescribing indicators improve asthma in Andalusia
Praena-Crespo M, Rodríguez-Castilla J, Lora-Espinosa A, Llinares-Aquino N
Andalusian Health Service. Seville, Spain.
Brief outline of context: Clinical Practice Guidelines and Consensus stressed the need to implement diversified strategies to enhance knowledge and skills of professionals to achieve better control of childhood asthma.
Brief outline of what change you planned to make: Improve the quality of prescribing in childhood asthma in primary care in Andalusia
Reduce the variability of prescription between different areas of health services
Assessment of existing situation and analysis of its causes:: Inappropriate prescribing of asthma drugs by general practitioners (GP) and pediatricians in Primary Care (n= 1349)
Source: Registration of drugs in the Pharmacy Unit of the Andalusian Health Service.
Strategy for change:: In 2007 the Andalusian Health Service has scheduled a training activity on rational drug use in childhood asthma (18 worshop for GP and Pediatricians (n= 820).
Two indicators were created to assess the quality of prescribing:
Ratio corticosteroids/combination of corticosteroids and long acting beta-adrenergic: Indicator 1
Ratio corticoisteroids/montelukast: Indicator 2
In 2008 the improvement of these indicators are linked to incentives through management agreements.
Follow-up 5 years
Measurement of improvement: Indicator 1 in 2007: 1,29. Indicator 1 in 2011: 2.20 (p= 0,000)
Indicator 2 in 2007: 0,99. Indicator 2 in 2011: 1,35 (p= 0,014)
The variability in the prescription has remained no significant differences
Effects of changes: The quality of prescribing in childhood asthma has improved after 5 years of monitoring.
Lessons learnt: Continued Medical Education improves the knowledge of doctors, but financial incentives are an important stimulus to improve prescribing quality targets
Message for others: We are still far from good indicators. Successive increases in the indicators related to education and economic incentives get better prescribing of asthma drugs
Conflict of interest and funding: We have no conflict of interest. Funding: Andalusian Health Service

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220: Do we treat correctly patients with astmatic crisis?

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Aim: Know wheter patients suffering from ashtmatic crisis are treated in our medical centre according to the international guidelines (GINA)
Method: Descriptive study. Diagnosed asthma patients attending emergency departments in our medical centre for exacerbation of their disease between January 15 and February 15, 2010 (34 patients). Data were extracted from digitalized medical history
Results: 18 patients (52,9%)received treatment in the crisis according to the guidelines. Regarding the recommended treatment at discharge only seven patients was consistent with the recommendations, while the basal treatment was not changed in nine patients. Only six patients were referred for review to their family doctor or pulmonologist
Conclusion: Asthmatic patient care suffering from a crisis in our medical centre does not conform to international recommendations and should be improved
Conflict of interest and funding: No

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234: Reducing asthma admissions by improving asthma management

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Brief outline of context: There were 79,794 emergency hospital admissions for asthma in the UK in 2008-09 - an estimated 75% were avoidable [1]. Asthma admissions from Bristol GP practices contributed to this.
Brief outline of what change you planned to make: Improve asthma management and reduce asthma hospital admissions across NHS Bristol.
Assessment of existing situation and analysis of its causes:: Previous audits identified variations in asthma management across Bristol GP practices. NHS Bristol commissioned NSHI* to run the IMPACT* service in practices. Searches identified some practices provided annual asthma reviews to 73.3% of their asthma register, others 36.4%.
Strategy for change:: IMPACT provided a therapeutic review, modular education and detailed clinical review by diploma trained asthma nurses, according to agreed practice protocols. Asthmatics attended a structured clinical review where their asthma control, inhaler technique and short-acting bronchodilator use was checked. Patients were given a self-management plan and educated in managing their condition. Practice staff were provided with respiratory training, and supported in reviewing their asthma register.
Measurement of improvement: There has been a 7% reduction in asthma admissions in 2010/11 in Bristol (n=37) compared to the previous year. Practices participating in the IMPACT programme accounted for 73% of this (n=27), compared to 27% in practices who had not (n=10). 99% of patients reviewed during the IMPACT service had been provided with an asthma self-management plan (20.8% previously).
Effects of changes: Increased patient awareness of asthma and improved knowledge of symptom management. GP's better able to manage their asthma register.
Lessons learnt: Variations in asthma management contributed to variations in patient outcomes across Bristol.
Message for others: A structured approach to asthma management can reduce hospital admissions
Conflict of interest and funding: *NSHI Ltd (National Services for Health Improvement) *Improving the Management of Patients Asthma and COPD Treatment. The IMPACT service is an independent nurse service sponsored by TEVA UK Limited Ref: [1] Asthma UK for Journalists: Key facts and stats: www.asthma.uk.org (Viewed Dec 2011)

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238: Research, applying GINA to asthma management in Tay Ninh province, Viet Nam

Thuan LTa, Hong NTa, Lan LTTb, David Pricec, Chavannes NHd et al
aTay Ninh hospital of tuberculosis and lung diseases, Tay Ninh province, Vietnam.bThe University Medical Center, Hochiminh city, Vietnam. cDepartment of General Practice and Primary Care, University of Aberdeen, UK. dDepartment of Public Health and Primary Care, Leiden University Medical Centre, Leiden, the Netherlands.

Aim: Determine the prevalence of asthma and evaluate the effectiveness of application GINA to asthma management in Tay Ninh province.
Method: Descriptive cross- sectional study: Single random, cluster, stratified sampling of 600 people in Tay Ninh in 2007. Those identified after interview underwent a examination, standard chest X-ray, Bacillus Koch smear, lung function test. Longitudinal research study: applying GINA to manage 200 asthmatic outpatients 7 years old and over for 9 months at Tay Ninh hospital of tuberculosis and lung diseases from 2007 to 2009.
Results: Prevalence of asthma is 4%, children from 7 to 15 years old is 3.3%, people over 15 years old is 5.2%. In 24 asthma patients, female 70.8%, average age of children 11.85 ± 2.85, average age of adult 41.64 ± 13.91. In 200 outpatients: Average age 38.7. Female 60%. Main factors reported to trigger asthma: change of weather 85%, respiratory infection 51%. The quality of life were improved evidently. Clinical symptoms, asthma control levels and spirometric parameters were improved after 2 weeks of treatment and remained stable over 9 months; side effects 1.5%, 42% comply. After 9 months, 73.5% patients step 4 downgraded gradually to step 1.
Conclusion: The creatively application GINA in Tay Ninh achieved the great effects in many fields. A network of asthma and COPD management in community adhered to PAL and other health care programs applied suitably to the local conditions is necessary.
Conflict of interest and funding: National funds, IPCRG.
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272: Combination therapy with fluticasone propionate/formoterol fumarate shows a reduced risk of asthma exacerbations compared to its individual components

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Fundacion Jimenez Diaz, Madrid, Spain

Aim: In many patients, asthma remains uncontrolled despite effective treatments. This is indicated by exacerbations, deteriorating symptoms and impaired quality of life. A new combination of the inhaled corticosteroid fluticasone propionate (FLUT) with the long-acting ß2-agonist formoterol fumarate (FORM) in a single aerosol inhaler (FLUT/FORM) has been developed for the maintenance treatment of asthma. Pooled data from up to five randomised, double-blind, parallel-group phase 3 studies assessed the effects of FLUT/FORM on asthma exacerbations.
Method: Patients (aged ≥ 12 years) with mild, moderate or severe asthma were randomised to FLUT/FORM (100/10, 250/10 or 500/20 µg twice daily [b.i.d.];n=641), the equivalent nominal dose of FLUT (100, 250 or 500 µg b.i.d.;n=643) or FORM monotherapy (10 µg, b.i.d.;n=345) for 8 or 12 weeks. Proportion of patients experiencing exacerbations and time to first exacerbation was assessed.
Results: A smaller portion of patients receiving FLUT/FORM experienced exacerbations than in either of the two monotherapy groups ($p<0.05$). The proportion of patients with any exacerbation was significantly lower with FLUT/FORM than with FORM (18.2%, 31.3%, respectively; $p<0.001$) or FLUT (26.8%, 32.8%, respectively; $p=0.02$). Fewer patients experienced severe exacerbations with FLUT/FORM than FORM (2.4%, 9.6%, respectively; $p<0.001$) or FLUT alone (1.9%, 2.8%, respectively; $p=0.36$). Overall, patients receiving FLUT/FORM showed a significantly longer time to first exacerbation compared to patients receiving the individual components FLUT ($p=0.01$) or FORM ($p<0.001$).

Conclusion: Treatment with fluticasone/formoterol was associated with a significant reduction in the risk of asthma exacerbations compared with its individual components. A reduced risk of asthma exacerbations may improve patients' quality of life.
Conflict of interest and funding: This abstract is an encore submission and parts of it were first presented at the BTS Congress 2011. Joaquín Sastre has served as a consultant to Phadia, Schering-Plough, FAES FARMA, Mundipharma, and GSK; has been paid lecture fees by Novartis, GSK, Stallergenes, and UCB; and has received grant support from Phadia, GSK, and ALK-Abello. Alberto Papi has consultant arrangements with Chiesi, GlaxoSmithKline, Merck, Mundipharma, Sunovion, Teva, Zambon. He or his research team have received grants and support for research in respiratory disease from the following organisations in the last 5 years: AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Merck, Novartis. He has spoken for: AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Merck, Mundipharma, Nycomed, Novartis, Pfizer. Kirsten Kaiser works for Skye Pharma; Sanjeeva Dissanayake, Birgit Grothe, Tammy McIver and Mark Lomax all work for Mundipharma Research Limited.
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274: Combination therapy with fluticasone propionate/formoterol fumarate provides greater improvements on asthma control than fluticasone propionate alone
Price D, Papi A, Tamm M, Kaiser K, Grothe B, Lomax M, McIver T, Dissanayake S
Centre of Academic Primary Care, University of Aberdeen, Aberdeen, UK
Aim: Despite effective treatments, asthma remains uncontrolled in many patients. A new asthma therapy combining the inhaled corticosteroid fluticasone propionate (FLUT) with the long-acting ß2-agonist formoterol fumarate (FORM) in a single aerosol inhaler (FLUT/FORM) has been developed. Here we present integrated analysis data from five randomised, double-blind, parallel-group phase 3 studies assessing the effects of FLUT/FORM compared with FLUT alone on asthma control.
Method: Adult and adolescent patients with a range of asthma severities were randomly assigned to receive FLUT/FORM (100/10,250/10 or 500/20µg twice daily (b.i.d.);n=641) or the equivalent nominal dose of FLUT alone (100,250 or 500µg b.i.d.;n=643) for 8 or 12 weeks. Randomised patients had uncontrolled asthma. The percentage change in asthma control days (defined as a day with no rescue medication use, no asthma symptom scores and no sleep disturbance due to asthma) was assessed from baseline to study end.
Results: The percentage of asthma control days was low in both groups (FLUT/FORM:12.8%;FLUT:12.6%) at baseline. Improvements in percentage of asthma control days were statistically greater for patients receiving FLUT/FORM combination therapy (percentages at study end: 62.4%/54.8%,respectively; least-square mean difference [95% CI]:7.5%[3.21 to 11.84];$p<0.001$) . Furthermore, significantly greater improvements in asthma symptom and sleep disturbance scores ($p<0.05$) and in rescue medication use ($p<0.01$) were seen in the FLUT/FORM group.
Conclusion: Fluticasone/formoterol combination therapy provided greater improvements in percentage of asthma control days compared with fluticasone monotherapy in adults and adolescents with mild, moderate or severe asthma. Data suggest that combination of both components in a single aerosol inhaler will provide an effective option for asthma maintenance therapy.
Conflict of interest and funding: This abstract is an encore submission and parts of it were first presented at the BTS Congress 2011. David Price has consultant arrangements with Boehringer Ingelheim, GlaxoSmithKline, Merck, Mundipharma, Novartis, Cheisi and Teva. He or his research team have received grants and support for research in respiratory disease from the following organisations in the last 5 years: UK National Health Service, Aerocrine, AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline, Merck, Mundipharma, Novartis, Nycomed, Pfizer, Chiesi and Teva He has spoken for: AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Merck, Mundipharma, Pfizer and Teva He has shares in AKL Ltd which produces phytopharmaceuticals. He is the sole owner

of Research in Real Life Ltd. Alberto Papi has consultant arrangements with Chiesi, GlaxoSmithKline, Merck, Mundipharma, Sunovion, Teva, Zambon. He or his research team have received grants and support for research in respiratory disease from the following organisations in the last 5 years: AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Merck, Novartis. He has spoken for: AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Merck, Mundipharma, Nycomed, Novartis, Pfizer. Michael Tamm is currently carrying out Mundipharma-sponsored in vitro studies on combination therapy. Kirsten Kaiser works for Skye Pharma; Birgit Grothe, Tammy McIver and Mark Lomax all work for Mundipharma Research Limited.
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338: GPs´ poor adherence to asthma guidelines: a lack of knowledge?
Lingner H, Piepenschneider D, Hummers-Pradier E
Hannover Medical School (MHH); Institute for General Practice
Aim: Research question: Is a lack of knowledge the reason for GPs´ poor adherence to asthma guidelines?
Background: 90% of patients with asthma initially consult a general practitioner, but their treatment does not always conform with the asthma guidelines (AG). Looking for improvement, the first step is to explore the barriers of a successful implementation of AG. Therefore we analysed in a prospective mixed-methods study patients' and general practitioners' (GP) concepts of "best asthma therapy" and GPs´ knowledge of the guidelines.
Method: 585 GPs and GP trainees (GPt) from Lower Saxony and Bavaria were invited to participate in the survey. They were asked to fill in a questionnaire, which focused on the definition of asthma, clinical findings, diagnostics, differential diagnostics, treatment and prevention. The demographic part was followed by an asthma-specific one including 15 questions and three case studies. The credit points were awarded according a bonus-malus system. Descriptive and analytic statistics with SPSS was used to analyse the results.
Results: Return rate: 295 physicians (50,4%); demographics: ♀75% GPt and 25% ♀GPs. GPt attained a mean total score of 57%. Bavarian GPt scored better (average 58%) than their colleagues from Lower Saxony (55%). Significant differences especially appeared in: definition, clinical findings and diagnostics. GPs reached a mean total score of 58% without significant differences. GPt and GPs showed the main all-over-uncertainty concerning the two subjects prevention and clinical findings. Both groups were best in differential diagnostics.
Conclusion: The analyses suggests a suboptimal knowledge of all tested areas. But these results may not reflect real daily practice, because this was an artificial setting. GPs and GPts might have handled differently in real practice situation. Nevertheless the qualitative parts of the AG-GPs study supports this findings. However there is need of further investigation. Meanwhile physician knowledge of AG should be improved.
Conflict of interest and funding: No conflict of interest.
Funding: the German League for Airwaydiseases e.V.
Corresponding author: Dr Heidrun Lingner

S9 Patient perspectives, Friday 27 April 2012 11.00-12.00 in Tinto

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188: How do patients with COPD appraise the experience of their condition? Age versus disease
Apps LD, Harrison S, Williams JEA, Bonas S, Singh S
University Hospitals of Leicester NHS Trust, Leicester, UK
Aim: To explore how patients describe the impact of Chronic Obstructive Pulmonary Disease (COPD) and their understanding of self-management.
Method: Semi-structured interviews were carried out with 15 participants recruited from GP COPD registers (6 male, mean (SD) age 69.40 [9.25], FEV_1 1.39 [0.58]). Two researchers (LA, SH) carried out

interviews. Topics discussed including the experience of living with COPD and understanding of self-management strategies. Interviews were transcribed verbatim and thematic analysis was performed by LA and SH, supported by NVivo software (Version 8). A third researcher analysed a sub-group of interviews to ensure agreement over themes.
Results: Five main themes summarise how patients described living with COPD – living around the illness, the role of prior experiences, the challenge of COPD, normal aging versus disease and getting on with life. Participants described many ways of living around COPD but differed in how they appraised the limitations of the condition and efforts made to overcome them. Some participants attributed some of their disability to normal aging and were satisfied to play an active role in adapting activities but others felt less able to accept the limitations imposed on them. The role of prior experiences was also important and highlighted the importance of a positive relationship with their primary care team.
Conclusion: Playing an active role in the management of COPD or having higher levels of perceived control had been mastered by some but not all. This has implications for satisfaction with disease management and highlights the need for increased awareness of the perceptions patients hold prior to starting any self-management strategy.
Conflict of interest and funding: The authors have no conflict of interest to disclose.
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210: Sleep does not affect health status in a primary care COPD population
De Jong C, Kocks JW, De Jong S, Van der Molen T.
General Practitioners Medicine, GRIAC, University Medical Center Groningen, Groningen, The Netherlands
Aim: To evaluate the effect of sleep on health status as measured by the Clinical COPD Questionnaire (CCQ) in a primary care COPD population
Method: 38 COPD patients were enrolled in the study, which was part of a lager study evaluating health status based treatment versus standard GOLD guideline based treatment. The participants completed the CCQ (symptoms, mental, functional and total scale) and the Pittsburgh Sleep Quality Index (PSQI; duration, disturbances, latency, daytime dysfunction, efficiency, quality, medication need and total score).
Results: Mean participant age was 66 years ; mean number of packyears 41; 72% male; GOLD I 36%, GOLD II 56%, GOLD III 8%. In the univariate analyses relations were found between the CCQ total scale and FEV1 (spearman -0.416, p=0.009), CCQ total and daytime dysfunction (spearman 0.404, p=0.012) and CCQ total and GOLD stage (spearman 0.369, p=0.023). No relations were found with group allocation, age, social economic status, medication, BMI or packyears. Multivariate analyses confirmed health status to be related to FEV1 and daytime dysfunction. The relation with GOLD stage was not confirmed.
Conclusion: Health status by means of CCQ is related to FEV1 and daytime dysfunction. None of the other sleep quality scales showed to have an influence on health status. The current study gives an insight into the possible relation between health status and sleep in a primary care COPD population and shows that the PSQI is a relevant instrument, however the n of 38 is too low for definitive conclusions.
Conflict of interest and funding: CdJ, JWK, SdJ and TvdM declare no Conflicts of interest. Funding by AstraZeneca
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311: Advanced care planning discussions in Pulmonary Rehabilitation.
Robinson S, Wilson L, Qayoom M, Patel I.
Imperial College Healthcare NHS Trust, Central London Community Healthcare.
Brief outline of context: End of life is a topic which may be included in pulmonary rehabilitation (PR) education sessions. Patient expectations, optimal content, and who should deliver this session are

unknown.
Brief outline of what change you planned to make: A community PR programme in West London has included a session entitled “Managing the Final Stages of a Long Term Lung Condition” since April 2010.
Assessment of existing situation and analysis of its causes:: Apprehensions and training needs were identified in respiratory staff. A community matron in palliative/end of life care therefore led the sessions. 12 sixty-inute end of life discussion sessions ran from April 2010-June 2011.
Strategy for change:: Discussions focussed on making a will, arranging a funeral and considering a Power of Attorney or Advance Decision. Participants were given advance notice and an opportunity to “opt out”.
Measurement of improvement: 72 patients attended (6/session). None opted out. One patient asked for more information. Two participants became distressed during the session.
Effects of changes: Evaluation results of the session were as follows: 1. "will help me manage my lung condition better" -79% agreed 2. "was pitched appropriately" - 80% agreed 3. "has given me new information" - 80% agreed 4. "would recommend to others" - 100% agreed 5. "was worthwhile" - 86% agreed
Lessons learnt: Generic advanced care planning is well received as part of community PR education.
Message for others: Specialist respiratory staff leading PR are now confident about delivering advanced care planning sessions. However this format is not appropriate for specific advanced care planning needs of patients with adverse prognostic indicators, which need to be explored separately.
Conflict of interest and funding: None
Corresponding author: Dr Irem Patel

290: Assessment of critical inhaler errors: preliminary UK data from the iHARP review service
Price D, Haughney J, Ryan D, Gruffydd-Jones K, Roche N, Lavorini F, Papi A, Infantino A, Bosnic-Anticevich S, Virchow JC, Roman M, Lisspers K, Stallberg B, Henrichsen S, Chrystyn H
University of Aberdeen, UK
Aim: The iHARP review service implements the International Primary Care Respiratory Group’s (IPCRG’s) recommendations on asthma control assessment and reasons for poor control. By analysing UK inhaler assessment data recorded through iHARP, we evaluate critical inhaler errors occurring in routine care.
Method: 610 patients (across 32 practices) have undergone the full UK iHARP assessment since June 2011, a combined evaluation of clinical records, inhaler technique assessment and patient questionnaire responses. Inhaler technique evaluation involves a structured, nurse-led assessment of inhaler handling, inhalation manoeuvre and objectively measured inspiratory flow (IF). Errors are recorded and classified as ‘error’, ‘critical’ or ‘potentially-critical’ depending on likely impact on successful drug delivery, (list agreed by iHARP Steering Committee).
Results: Patients (18–77yrs [mean=54yrs]; 65% female) were typically asthma step 3(73%) or 4(19%). Only 18% of patients performed no critical errors (28% of dry powder inhaler [DPI] patients; 5% of metered-dose inhaler [MDI] patients). 30% of patients performed only nurse-observed critical errors (47% DPI; 7% MDI); 28% performed only IF critical errors (7% DPI; 55% MDI) and 24% performed both nurse-observed and IF critical errors (17% DPI; 33% MDI).
Conclusion: These early data suggest inhaler technique errors critical to adequate medication delivery are common in patients with moderate to severe asthma. Objective IF assessment detects critical errors unobservable by visual assessment (e.g. inspiratory flow rate), yet nurse assessment can observe errors unmeasurable by objective IF evaluation (e.g. device preparation). Combined nurse/IF evaluation offers the highest standard inhaler assessment in routine care. More detailed analyses in a larger dataset are warranted.
Conflict of interest and funding: Co-funded by Mundipharma International Limited and Optimum Patient Care.
Corresponding author: Professor David Price

264: Listening to your voice - Patient and carer perspectives on COPD care in North

Roberts J, Gaduzo S, Williams J, Sud P
NHS NorthWest

Aim: To gain insight into patient and carer perspectives of COPD care to inform clinical practice and service development

Method: Patients and carers from 24 localities across NW were invited to attend an interactive networking event facilitated by service experience experts. Personal reflection of experience and feelings were captured on post it notes and shared in tabletop discussions to identify common themes and differences. Post its were transferred to a core pathway which ran along the wall. This was used to engage whole group discussion in the development of key messages.

Results: 23 patients and 3 carers representing 11/24 localities (45%) attended the event. The key messages patients and carers wanted clinicians to hear were: In the beginning; know my COPD journey started a long time before the diagnosis or before I saw a health professional; it takes time to get a diagnosis; there was delay in referring me to a consultant (specialist); I need confidence in local NHS services to help me. Living with my chest; recognise the importance of support groups and networks; I need the right information for me and my carer; I need access to pulmonary rehabilitation to keep me healthy; get the relationships right, “show me you care”, involve me in my care. When I need help; I need access to the best clinical care and who can help me when I need it most; help me to understand and manage my own care; give me consistent messages.

Conclusion: Patient and and carer perspectives of COPD care in NW provide powerful insights on experience and feelings that can be used to develop clinical practice and influence service development.

Conflict of interest and funding: None

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266: Listen to your lungs - Blow Football Challenge!

Roberts J, Gaduzo S, Williams J, Sud P
NHS NorthWest

Brief outline of context: COPD is under diagnosed across NW and awareness of lung health and lung disease is low.

Brief outline of what change you planned to make: Campaign to raise awareness of lung health/ lung disease amongst general public in NW.

Assessment of existing situation and analysis of its causes:: 2.1% NW population has COPD with predicted prevalence 4.4%; smoking rates above national average.

Strategy for change:: We developed a campaign that would have resonance with the public and local media. The “listen to your lungs” campaign focused on positive non-medical messages about maintaining lung health, recognizing symptoms of lung disease, where to go for more advice. In partnership with British Lung Foundation (BLF) we used the game of blow football to create interest with blow football challenge on lead up-to World COPD Day (WCOPDD) November 2011.

Measurement of improvement: 22/24 (91%) BLF Breathe Easy groups raised awareness of the campaign with 14/24 (58%) groups holding public blow football challenges. BLF worked with local clinicians to provide lung function tests for over 300 people. 3 primary schools held blow football challenges with over 70 children taking part. Clinicians in 12/24 (50%) localities also held a variety of events using our materials.

Effects of changes: BLF website gained over 100,000 visitors to their website during November, with 16,000 hits on their COPD page, 10,000 on WCOPDD day and 7,000 people have taken online breathing test. The campaign will continue in 2012 with further events planned for no smoking day, world spirometry day and the Olympics.

Lessons learnt: Innovative communications strategies can increase awareness of lung health and disease

Message for others: Collaboration with patient organisations can increases effectiveness of awareness campaigns
Conflict of interest and funding: None
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S10 COPD service development, Friday 27 April 2012 11.00-12.00 in Moorfoot

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110: Improving COPD Diagnoses - The NHS North East Essex Experience
Dr Farman Ali, Dr Jo Broadbent, Dr James Hickling and Lianne Jongepier
NHS North East Essex
Brief outline of context: An estimated 2 million people in England have undiagnosed COPD. To address this issue locally, North East Essex PCT developed a local strategy
Brief outline of what change you planned to make: 1. identify and implement a cost-effective method for screening at-risk patients to close the gap between estimated (8,832, 2.7% of population) and existing COPD prevalence (5,012, 1.5% of population) among smokers and ex-smokers
2. improve the quality of spirometry and COPD management through training and support
Assessment of existing situation and analysis of its causes:: .
Strategy for change:: A screening questionnaire was identified (Price et al). GP practices were commissioned to screen all current and ex smokers aged 50-plus. Appropriate individuals were invited for diagnostic spirometry.
To support its implementation, a Local Enhanced Service was commissioned, supported clinically by our local COPD Specialist Team who offered support & training to GP practice staff on spirometry and management of COPD patients
Measurement of improvement: Number of new COPD Diagnoses
Effects of changes: Over 1000 new patients were diagnosed. QOF register at end of March 2011 was 6,013 patients, compared to the baseline of 5,012 in 2009. This is an increase of 11%, increasing overall COPD diagnosis rate to 68% of expected. Additionally, an increase of 25% referrals to Pulmonary Rehabilitation was observed. 52 staff were trained over 77% of participating surgeries.
Lessons learnt: This project demonstrated the successful implementation of this new COPD-screening tool to improve COPD diagnoses used as part of a LES. Success was achieved by supporting practices clinically, which additionally demonstrated improved patient care.
Message for others: Ensure commissioner-provider collaboration in service design
Conflict of interest and funding: None
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273: Introducing a COPD discharge care bundle across a large hospital trust.
Elkin SL, Harvey V, Macfie D, Oyston M, Otienne C, Goddard Y, Patel I, Schofield G, Falzon C, Lee C, Lyons N, Woodcock T, Howe C.
Imperial College NHS Trust
Brief outline of context: Imperial College Healthcare NHS Trust (ICHT) was formed by amalgamating 3 hospitals. It became apparent that care received by patients admitted with COPD across sites varied with some long length of stays (LOS). We introduced the discharge bundle to unify approach to care.
Brief outline of what change you planned to make: Implementing 5 elements of evidence based care for patients discharged after an exacerbation of COPD (commenced April 2010) • Smoking cessation assistance • Pulmonary rehabilitation referral • Self management • Effective inhaler use • Follow up arrangements/liaising with community
Assessment of existing situation and analysis of its causes:: Data collected from informatics on LOS and admissions for year before iniative Discussions with teams from all sites, community and CLAHRC

Strategy for change:: Over 18 months the bundle was rolled out across the trust. Starting on respiratory wards,then acute wards and finally general medical.
Measurement of improvement: Measures of improvement were collected weekly and reviewed to inform plan-do-study-act (PDSA) cycles using a web-reporting tool: • % Compliance for completion of all 5 bundle elements. • % Bundles filled / J441 coded admission Outcomes measures included: • Admissions. • Length of stay
Effects of changes: Compliance slowly improved. Over 1 year Admissions dropped from 360 to 274 days. LOS dropped from 9 days to 6.5 days
Lessons learnt: • Early engagement of nursing management • Correct coding • Educating staff • Respiratory nurses crucial • Utilising PDSA adaptions can occur
Message for others: Implementing the COPD bundle takes time and requires champions pushing usage. Involve senior nurses early. Each new implementation area presents new challenges and requires dedicated time.
Conflict of interest and funding: This work was funded in partnership between ICHT and the NIHR CLAHRC for Northwest London.
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287: PAL strategy pilot implementation in Romania
Isar C, Bucurenci M, Bumbăcea D.
National Centre for Studies in Family Medicine, Bucharest, Romania
Brief outline of context: Romania faces high TB incidence and huge variation in clinical management of respiratory diseases.
Brief outline of what change you planned to make: Practical Approach of Lung health (PAL), a pilot implementation of WHO's strategy , aims at standardising GPs' approach in respiratory diseases by means of training, practice equipping, evaluation and feedback.
Assessment of existing situation and analysis of its causes:: A national working group reviewed existing statistics and national scientific papers.
Strategy for change:: Repeated modular training for 650 GPs, during a 3 year period was provided by teams of pulmonologists and GPs. Evaluation and feedback blended with advocacy were used to improve motivation and change.
Measurement of improvement: Before-and-after training comparisons of GPs clinical behaviour, using self-reported consultations and external practice audit (25 GP practices).
Effects of changes: Usage of recommended clinical diagnostic criteria (to better predict bacterial infections and antibiotic treatment) improved by 8% (49,4% to 58,1 %) in pneumonia to 30% (56,5% to 86,7%) in bronchitis. Antibiotic prescription rate diminished from 83,0% to 72,0% in rhinosinusitis and from 59,1% to 55,9% in bronchitis. Antibiotic adequacy improved slightly: more presumed bacterial and less presumed viral infections received antibiotics. Radiology referral rates remained low. About half of asthma (118) and COPD (105) patients performed spirometry after GP training. 82,8% of asthma and 88,6% COPD patients receive inhaled bronchodilators.
Lessons learnt: Frequent retraining of GPs in clinical topics should be combined with measures to support planned and structured visits and chronic patient education.
Message for others: PAL implementation should be reinforced by quality assurance programmes and public education campaigns regarding antibiotic use and care of chronic respiratory diseases.
Conflict of interest and funding: No conflict of interest Project funded by The Global Fund to Fight AIDS, Tuberculosis and Malaria through Romanian Angel Appeal
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218: Structured management of COPD in primary care
Lisspers K, Janson C, Ställberg B, Johansson G, Stratelis G, Jörgensen L, Larsson K
Department of Public Health and Caring Sciences, Family Medicine and Clinical Epidemiology, Uppsala University, Sweden

Aim: To describe development and effectiveness of COPD primary health care structure in Sweden during 11 years based on availability of asthma/COPD nurse.
Method: Retrospective study based on electronic medical records, mandatory national health care registers, and questionnaire on PC structure (CTW.gov, NCT01146392). Patients older than 18 diagnosed with COPD during January 1999 to December 2009 were included. Index date was defined as first date of COPD diagnosis. Exacerbations were defined as an emergency room visit, hospitalization, need for oral corticosteroids or antibiotics. Primary health care centers (PHCCs) were classified with regard to the presence or absence of asthma/COPD nurse. Statistical analysis included propensity score matching.
Results: In all, 21,361 patients were included from 76 PHCCs (11,850 patients from PHCCs with asthma/COPD nurse and 9,511 patients from PHCCs without asthma/COPD nurse). Matching yielded 7,971 patients per PHCC type.
Availability of asthma/COPD nurse, spirometry, and smoking cessation programs were approximately doubled during the study period, in 2009 84, 95 and 82%, respectively. Patients in centers with asthma/COPD nurse were younger at COPD diagnosis than patients in centers without asthma/COPD nurse 67.4 (11.4) vs. 68.7 (11.2) years, and had a higher number of prescriptions for COPD related drugs.
Patients who visited PHCCs with asthma/COPD nurse had 27% significantly lower yearly rate of exacerbations (0.71 vs; 0.93), fewer hospitalizations/patient/year (0.28 vs 0.47), and a lower number of days at hospital due to COPD exacerbations (1.83 vs 2.94) than patients controlled at PHCCs without asthma/COPD nurse.
Conclusion: COPD patients attending a primary health care center with structured COPD care have fewer yearly exacerbations than PHCCs without dedicated staff
Conflict of interest and funding: The study was funded by AstraZeneca
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217: A simple prognostic index, BOD, facilitates end of life discussion for COPD patients in primary care.

D Wood, N Keaney, S Neil, J Smallwood, F Omer.
N Tees & Hartlepool NHS Foundation Trust, Hartlepool, UK
Brief outline of context: Awareness of a need for end of life discussion would be facilitated by a simple prognostic tool. BOD is an individualised Read-coded multidimensional prognostic index for patients with COPD (range of scores 0-7) derived from BMI <22 (score 0/1), FEV1% predicted (score 0-3) and the MRC Dyspnoea scale (score 0-3). BOD predicts mortality in a primary care cohort of COPD patients. Use of this simple prognostic tool could prompt end of life discussion.
Brief outline of what change you planned to make: The aim was to use the practice Palliative Care Register to monitor the number of additional patients with whom end of life discussion had occurred following identification of a high BOD score.
Assessment of existing situation and analysis of its causes:: Relatives and carers are frequently unprepared for death from COPD.
Strategy for change:: BOD was introduced into one general practice in Hartlepool.
Measurement of improvement: BOD scores were obtained for 179 patients with confirmed COPD. Quartiles of BOD scores (0-1; 2-3; 4-5; & 6-7) were generated for 46, 72, 46 & 15 patients respectively.
Effects of changes: 5 new patients were registered, four of whom died within twelve months (BOD scores 6,6,6 and 7). End of life discussion was held with all four
Lessons learnt: A difficulty was the lack of confidence in approaching end of life discussion and a training need for advanced communication skills was identified.
Message for others: Practice nurses were the main users of the process and stated that they found that BOD scores agreed with their intuitive assessment of the patients.
Conflict of interest and funding: No conflicts of interest to report

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S11 Non-drug treatment, Friday 27 April 2012 11.00-12.00 in Kilsyth

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108: Patients' compliance and experience with video based home exercise programme concurrently with outpatient pulmonary rehabilitation (PR).

Adekunle A, Watson T, Schreuder F. M.
University of Hertfordshire, UK.

Aim: To evaluate patients' compliance and experience with video based home exercise programme concurrently with outpatient PR.

Method: On day 1 of an 8 week outpatient PR programme, 23 randomly selected COPD patients completed outcome measures of endurance shuttle walk test (ESWT, Revill et al, 1999), St Georges respiratory questionnaire (SGRQ, Jones et al, 1991), brief assessment depression card (BASDEC, Adshead et al, 1992), Duke social support index (DSSI, Koenig et al, 1993), multidimensional health locus of control (MHLC, Wallston & Wallston, 1981), mini mental state examination (MMSE, Jacobs et al, 1977) and MRC COPD severity score (Fletcher, 1960). All participants commenced a video based home exercise programme from day 1 and completed modified Follick's activity diary (Pitta et al, 2005) in the week 6 of the outpatient PR programme.

Between 12 and 18 months post outpatient PR, 7 of the initial 23 participants participated in 3 focus group sessions.

Results: Spearman Rho analysis showed a significant correlation between compliance and patients' baseline ESWT, DSSI, MHLC, BASDEC, MMSE and MRC scores (Correlation 0.453, 0.539, 0.506, -0.563, 0.609 and -0.737 respectively, $p<0.05$). Focus group participants expressed good compliance and satisfaction with the video based programme.

Conclusion: Compliance with video based home exercise programme is associated with patients' baseline exercise tolerance, psychosocial factors and COPD severity. Twenty months after its use commenced, patients were still using the video. Post outpatient PR, compliance was slowly diminishing over time.

Conflict of interest and funding: This study was funded by the University of Hertfordshire and no conflict of interest existed.

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121: A UK feasibility study on Singing and COPD: Recruitment strategies and interim findings

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Canterbury Christ Church University, Folkestone, United Kingdom

Aim: To assess the feasibility of weekly community singing for people with COPD and to assess impacts on lung function, functional capacity and quality of life

Method: An observational study with repeated measures to guide a future controlled trial on singing and COPD. We aimed to recruit 100 patients with COPD to singing groups on a weekly basis from September 2011 to June 2012. To estimate the extent to which people with COPD would be willing to engage in singing, all GP practices across East Kent (145) were asked, through the Kent and Medway Primary Care Research Network, to send letters to their COPD patients inviting participation. Additional recruitment strategies were: newspaper advertisments, information through the pulmonary rehabilitation service, advertising in pharmacies and contacts with British Lung Foundation support groups.

Results: Of the 145 practices contacted in June 2011, six sent out letters to 499 patients. Of the 106 patients recruited via all routes, 41 were registered with one of the six practices (take up rate 8%). From the baseline assessment with spirometry there was evidence for 15 patients of an error in the diagnosis of COPD and also cases of inappropriately prescribed medication. A short film illustrating the project will be shown.

Conclusion: It is possible to successfully recruit COPD patients to a community singing project, but participation by GP practices in this process was limited. The estimate we have of the success of recruiting patients through primary care (8%) may well be exaggerated because of the additional forms of recruitment, but it gives a possible upper limit of willingness and ability of COPD patients to engage with singing.
Conflict of interest and funding: None, Dunhill Medical Trust
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256: Effect of self administered yoga program for patients with chronic obstructive pulmonary disease
Neha Sharma, Placheril John, RG Sharma
NMP Medical Research Institute, Jaipur, India
Aim: To develop inexpensive and practical therapeutic program, present study assessed the efficacy self administered yoga program practiced at home on dyspnoea, exercise function and health related quality of life (HRQOL) in patients with chronic obstructive pulmonary disease (COPD).
Method: This was a single blind, randomised controlled trial of self administered yoga program for COPD, comparing the effectiveness of 6 months of home practice with the control group receiving normal care only. The primary outcome measure was dyspnoea, measured by MRC dyspnoea scale. Secondary outcome measure included, physical functioning, 6 min walking distance (6MWD) and chronic respiratory disease questionnaire (CRQ) which includes four domains: dyspnoea, fatigue, emotional function, and mastery
Results: Patients completing this study consisted of: 49 patients in the self care yoga group, and 47 patients in control. Clinically meaningful changes in dyspnoea from baseline to 6 months ($P < .001$), physical functioning ($P < .0001$), and self-efficacy for managing dyspnoea ($P < .0001$) were observed in yoga groups with. Significant improvements were achieved in 6MWD, CRQ (Dyspnoea, Mastery, Fatigue and emotional function) in the yoga group only.
Conclusion: Our study suggested that self administered yoga program could be cost, time and treatment effective for improving exercise tolerance and HRQOL in patients with COPD.
Conflict of interest and funding: No conflict of interest and study was funded by NMP Medical Research Institute, India
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164: BREATHE better: Putting breathing exercises for asthma into routine general practice
Thomas M, on behalf of the BREATHE study group.
Research question: 1. Can physiotherapist-taught breathing exercises improve symptoms and health status in uncontrolled asthma? 2. Can breathing training be delivered as effectively through an internet or DVD delivered programme as through face to face physiotherapy sessions? 3. What is the most cost-effective way of delivering breathing training for asthma in primary care?
Background: Despite effective pharmacotherapy, asthma control usually remains sub-optimal, with the majority of patients suffering persistent symptoms and quality of life impairment. Many patients are interested in exploring non-pharmacological approaches to disease control, in particular with breathing exercises. There is a growing body of evidence that some types of breathing control (e.g. physiotherapist delivered programmes, yoga and the Butekyo method) can help many people, with evidence strongest for physiotherapist delivered programmes. However, the limited availability of suitably trained physiotherapists means that most patients who could benefit do not have access to suitable therapists. Improving this situation would involve a large expansion in the training and availability of community respiratory physiotherapists in most countries. An alternative approach is to design interactive Internet or DVD/video programmes based on the face-to-face programmes that could allow patient education and breathing training to occur without face-to-face contact. There is some preliminary evidence to support this approach.
Possible methodology: 3 way randomised controlled trial of internet/DVD breathing training vs.

'face-to-face' physiotherapy vs. 'usual care'. Representative adults treated for asthma in primary care with sub-optimal control will be recruited through a Primary Care Research Network (PCRN)
Questions to discuss: Is breathing training taken seriously by clinicians? Will internet/DVD breathing training be acceptable to patients? Will internet/DVD breathing training be acceptable to clinicians? If proven to be effective, how could these programmes be integrated into usual care?
Conflict of interest and funding: No c/i MT has received funding from the patient charity Asthma UK to investigate this topic. The current study is funded by the UK government (NIHR)
Corresponding author: Professor Mike Thomas **Email:** mikethomas@doctors.org.uk

170: Design and baseline characteristics of ICE COLD ERIC
Siebeling L, Ter Riet G, Zoller M, Frei A, Muggensturm P, Puhan MA
Academic Medical Centre, University of Amsterdam, Department of General Practice, Amsterdam, The Netherlands
Aim: ICE COLD ERIC (International Collaborative Effort on Chronic Obstructive Pulmonary Disease, Exacerbation Risk Index Cohorts) is a prospective cohort study designed to develop and validate practical COPD disease risk indices that predict the clinical course of COPD patients in primary care.
Method: 2 cohorts with primary care COPD patients from Switzerland and the Netherlands are linked. The study started in 2008 and the follow-up time will be 5 years. Primary outcome is health-related quality of life. Secondary outcomes are exacerbation frequency and mortality. Using multivariable regression analysis, we will identify the best combination of variables predicting these outcomes. Lung function, patient history, self-administered questionnaires, exercise capacity and a venous blood sample were performed several times.
Results: 260 Dutch and 151 Swiss patients were included. Median age 66 years, 57% male, 38% current and 55% former smokers. 76% had at least one and 40% had ≥2 comorbidities with cardiovascular disease being the most prevalent one. Although lung function results (median FEV1 was 59% of predicted) were similar, Swiss patients reported better COPD-specific health-related quality of life (Chronic Respiratory Questionnaire) and had higher exercise capacity (sit-to-stand-test and handgriptest).
Conclusion: The ICE COLD ERIC cohorts represent a wide range of disease severities and the prevalence of multimorbidity is high. After completion of this study, we will have a practical COPD-disease risk index that predicts the clinical course of COPD in primary care patients with GOLD stages 2-4. In a second step we will incorporate evidence-based treatment effects into this model, such that the instrument may guide physicians in selecting treatment based on the individual patients' prognosis.
Conflict of interest and funding: Conflict of interest: None declared. Funding: Dutch Asthma Foundation, Swiss National Science Foundation and Zurich Lung League.
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237: Randomized phase II trial of homeopathy to prevent post treatment impairment of pulmonary tuberculosis
Sadhana Sharma, Neha Sharma, Ram G Sharma, BK Meghwal
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Aim: Despite the successful anti tuberculosis treatment (ATT), impaired pulmonary function and low quality of life is well-documented in tuberculosis treated patients, resulting increased morbidity and mortality. Current study aim to assess the efficacy of an adjuvant homeopathy treatment in preventing pulmonary impairment and persistent symptoms in individuals treated tuberculosis patients.
Method: one hundred forty nine newly diagnosed pulmonary tuberculosis patients were randomized to receive homeopathy as an adjuvant to ATT or only ATT. After completing 6 month of ATT, all the patients were followed up for a year. Symptom score, pulmonary function test, and health related quality of life were assessed during follow up at completing ATT, at 6 month and at 12 month.

Results: One hundred two patients (n=54 in homeopathy, n= 48 in control group) completed a year of follow up. Both the groups had similar risk factors. After successful completion of ATT, patients on homeopathy had significant increased body weight (p< .0001), better quality of life (p<0.05) with lower symptom scores for cough and breathlessness (p< .0001) compared with control. Benefits were maintained in homeopathy group after a year whereas symptom (p<0•01) and impact score (p<0•001) deteriorate in control. FVC, FEV1, FEV1/FVC Ratio were higher than control group after a year. Physicians' visits were significantly lower in homeopathy group(P < 0.0001).After a year, 12.97% in homeopathy group had impairment compared to 64.6% in control group.
Conclusion: These findings indicate that supplementation with homeopathy during anti tuberculosis treatment could prevent pulmonary impairment.
Conflict of interest and funding: No conflict of interest
Study was funded by NMP medical research institute
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S12 Organisation of care, Friday 27 April 2012 11.00-12.00 in Harris

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263: Outcomes of establishing community of practice for Oxygen service across NHS North West Strategic Health Authority (NWSHA).
Williams J, Gaduzo S, Roberts J, Hatch K, Smith V, Squires B
NHS North West Respiratory Clinical Pathway team
Brief outline of context: NWSHA COPD pathway leads, appointed in April 2010 , complemented Regional Home oxygen services (HOS) leads' work by establishing a community of practice for HOS assessment and review (HOS-AR) teams.
Brief outline of what change you planned to make: Producing cost savings by decreasing variation in service organisation and prescribing.
Assessment of existing situation and analysis of its causes:: PCT Data obtained of oxygen provision and service organisation in April 2010 from questionnaires & regional HOS data. 50 % of PCT and Hospitals never met or only in a crisis. Quality of service varied e.g. 3 of 23 services had no formal follow up arrangements following initiation in secondary care. Average cost per patient varied significantly across the region with the lowest value being half the most expensive value.
Strategy for change:: Arranging SHA Workshops for primary and secondary care teams to meet together and formulate action plans. Distribution of 'Top tips' for monitoring /management of oxygen prescription via SHA respiratory website to HOS-AR teams.
Measurement of improvement: Action plans outcomes feedback. Quarterly cost data.
Effects of changes: Primary and secondary care HOS-AR teams action plans are being implemented . Regional HOS steering group established . NWSHA Oxygen service cost decreased from £3.1m to £2.8m/quarter following the first workshop . 19/24 PCT's have decreased their annual cost in the last 12 months.
Lessons learnt: Problems shared are rarely unsurmountable
Message for others: Better working and cost savings can be achieved by establishing a motivated integrated community of practice.
Conflict of interest and funding: None
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306: Primare care respiratory physicians have more role in helping experts to treat respiratory diseases
Kumar Suman DR .Gupta Ashok Dr
Research question: Doctors should move towards educating, and Providing this in the form of away from prescribing, for acute respiratory symptoms.a simple leaflet appears to be an investment that is effective and beneficial for patient and doctor

Background: Amosly specialist doctors are available and there are large multidisciplinary specialty hospitals or private clinics run by specialists. The ubiquitous General Physician is missing! In India, *Possible methodology*: Our centre has patients from around more than 1000 km area around it. Patients come to us after a long time they have shown to primary care .We started a trial of educating primary care physicians in the area of 200 km around us.We educated them by sending posters ,our case experiences,and discussing when they refer case for expert treatments to us ..After I year of there was a good score.and the patients reffered are diagnosed more correctly,referred early before getting complicated and had more chances of recovery than before.as compared to providers which were not educated In other study 32 primary care health providers studied about 628 previously well adults presenting respiratory diseases bronchial asthma in this study. Management was left to the GP's discretion. Half of the patients were randomly allocated to receive an information leaflet at the end of the consultation, blinded from the GP. The results: Follow-up data was available for 598 adults, of whom 95 (16%) reconsulted. Fewer patients who received the leaflet (40/310;12.9%) returned for repeated consultations as compared to with those who did not (115/288; 39%)The same benefit was found for the adults treated initially with antibiotics
Questions to discuss: Primary care respiratory physicians have more role in helping to treat respiratory diseases than the experts.
Conflict of interest and funding: Funded by self, no conflict
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223: COPD care and management at nurse-led COPD-clinics in Swedish primary health care: a literature review

Österlund-Efraimsson E, Nyberg A, Åberg-Lennmalm E
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Aim: The aim was to describe scientific knowledge regarding care and management of patients at nurse-led COPD-clinics in Swedish primary health care in relation to national guidelines on COPD care, self-management education and support for smoking cessation
Method: A literature review included ten studies, three qualitative, six quantitative and one both qualitative and quantitative (eight descriptive and two educational-interventions). The search was carried out in Pub Med/MEDLINE and CINAHL between year 1999 and 2012 with the following search-words: COPD, nurse-led clinics, patient education, primary healthcare, quality of life, self management, smoking cessation and Sweden, in various combinations. Two reviewers rated independently (using rating-scales for qualitative and quantitative research) and extracted data from the articles.
Results: At nurse-led COPD-clinics in Swedish primary health care, nurses ran structured investigations including measurements according to medical guidelines, and gave information about self-management and smoking cessation. The COPD-clinics allotted sufficient time according to the guidelines: when the nurse had been trained in COPD care, more patients were diagnosed with COPD and fewer exacerbations were noted among COPD-patients. If structured programs for smoking cessation and/or self-management were used, an increased number of patients stopped smoking and patients' quality of life was improved. COPD nurses showed shortcomings in self-management and smoking cessation concerning individualized care, the involvement of patients in shared understanding and responsibility and motivational dialogue. More collaborative teamwork was needed for COPD-clinics to reach their full potential.
Conclusion: Structured self-management and smoking cessation programs were effective and improved patients' quality of life. For COPD-nurses and COPD–clinics to reach their full potential, more teamwork and training for the nurses in self-management education and smoking cessation are needed.
Conflict of interest and funding: None
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330: Study on the drug costs associated with COPD prescription medicine in Denmark
Jakobsen M, Anker N, Dollerup J, Poulsen PB, Lange P
COWI AS, Lyngby, Denmark
Aim: Spirometric studies of the general population estimate that 430,000 Danish individuals have chronic obstructive lung disease (COPD). COPD is mainly caused by smoking, and smoking cessation is considered the most important intervention to prevent progression of the disease. Cost-of-illness of COPD in Denmark is significant. However, the use of prescription medicine - an important part of costs – has not been analysed for the Danish population.
Aim: Analyse the societal costs associated with prescription medicine for the treatment of COPD in Denmark.
Method: The study was designed as a nation-wide retrospective register study of the drug costs (ATC group R03) associated with COPD from 2001-2010. Data were retrieved from the Prescription Database and the National Patient Register. The population comprised individuals (40+ years) having had at least one prescription of COPD drugs with an indication code indicating COPD. A societal perspective included both public reimbursement costs and co-payment. Costs were calculated in fixed 2010-prices using a Laypeyres price index (average treatment cost per DDD and DDD amount sold).
Results: In the period 2001-2010, 234,769 individuals (40+ years) have had at least one prescription of COPD drugs (R03). Among these, 124,020 had the code indicating COPD. The annual average drug cost (R03) was DKK 7,998 per patient (Euro 1,070) with a total average cost per year around 500 million DKK (67 million euro). For a population of 124,020 COPD patients the total drug costs (R03) were 992 million DKK (1.3 million euro).
Conclusion: The annual costs of prescription medicine for COPD in Denmark are significant. This is also the case, when compared with similar costs for the primary intervention towards COPD, i.e. smoking cessation.
Conflict of interest and funding: Pfizer has funded the project. Poulsen PB and Dollerup J are employees of Pfizer Denmark.
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245: Implementing a COPD care package in Tower Hamlets: supporting sustainable improvement
Hull SA, Round T, Pushparajah P, Gunaratne I, Renno K, Bari N
Hull SA, GP Tower Hamlets, Reader in Primary Care Development, Queen Mary University of London
Brief outline of context: Tower Hamlets is a socially deprived and ethnically diverse borough in London, with high rates of COPD emergency admissions/readmissions and length of stay. Early identification and primary care management could be improved. Please see also linked abstract "Implementing a COPD care package: a case study within a primary care network".
Brief outline of what change you planned to make: System change involving networks of GP practices, community and secondary health services to engage with a funded 'COPD care package'.
Assessment of existing situation and analysis of its causes::
Strategy for change:: The formation of clusters of GP practices (networks) to deliver enhanced COPD care collectively, overseen by peers on network boards. Funding to support network development, service delivery, and financial incentives for achievement. The production of 'practice dashboards' based on EMIS Web, monitoring real time progress against performance indicators.
Organising community health services to provide admission avoidance service, expanded pulmonary rehabilitation and a diagnostic spirometry service.
Engage consultant physicians to join network MDT meetings to provide educational support to primary care teams.
Measurement of improvement: Using monthly dashboard figures, progress towards the key aims of the care package can be reviewed by network managers and clinical leads.

Key metrics: 10% increase in diagnosed prevalence: extended annual /bi-annual review including all housebound patients: pulmonary rehabilitation uptake: COPD prescribing rates.
Unplanned admission rates for COPD by network/practice.
Effects of changes: Evidence will be presented on: increased COPD case identification; improvements in measures of primary care management; data on admissions.
Discussion will focus on the effects of network formation on developing uniform service quality across primary care, and the value of the community MDT to practice and secondary care teams.
Lessons learnt:
Message for others: Commissioner investment in primary care networks for a cluster of chronic conditions provides more benefit than a single disease focus. Harnessing the combined benefits of investment, access to real time IT, the power of professional leadership, support and persuasion can provide a sustainable model for improvements in COPD management.
Conflict of interest and funding: None
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244: Implementing a COPD care package: a case study within a primary care network
Round T, Hull SA, Gunaratne I, Pushparajah S, Renno K, Bari N.
Round T, GP Tower Hamlets and Academic Clinical Fellow, Department of Primary Care and Public Health Sciences, Kings College London.
Brief outline of context: Tower Hamlets has some of the highest rates of COPD admissions/readmissions in London with significant practice variation. Primary care networks were utilised to implement a COPD care package. See linked abstract "Implementing a COPD Care Package in Tower Hamlets: supporting sustainable improvement". Network 2 has 5 practices, and in April 2011 had 38,772 patients, 412 with COPD, prevalence 1.06% (range 0.62% - 2%).
Brief outline of what change you planned to make: Through a network based structure working towards implementation of key performance indicators and aiming to reduce inter-practice variability.
Assessment of existing situation and analysis of its causes::
Strategy for change:: Organisational/structural changes: Developing a working group of network/practice COPD teams; call/recall systems utilising real-time IT and robust data; incentivised performance payments; regular MDT meetings between community/secondary care teams. Education/training: Increased capacity for COPD reviews, including increasing equipment and trained staff provision; educational sessions at practice meetings/MDTs. Clinical leadership: Funded COPD network lead; audit and case notes review; piloting validated COPD screening; healthy competition between practices to reach collective incentivised targets.
Measurement of improvement: Aiming towards incentivised targets (30% of care package payment): 10% increase in COPD register size; 80% or more patients having annual reviews for mild to severe COPD, biannual reviews for very severe COPD (including housebound reviews); 75% uptake ever referred to pulmonary rehabilitation (MRC 3 and above).
Effects of changes: At six month review: 8.4% increase in network prevalence to 447 patients; 3 out of 5 practices achieving mild to severe annual review targets; 37% increase in housebound reviews. We will present the first year evaluation results along with qualitative stakeholder feedback assessing changes within practices.
Lessons learnt: Implementation of a primary care network based COPD care package can be achieved through organisational/structural changes, staff up-skilling/training and clinical leadership.
Message for others: Delivery of a COPD care package can be implemented via a primary care network. This requires organisational investment, professional and educational support, ongoing high quality data monitoring and feedback, with incentivised targets.
Conflict of interest and funding: None
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322: Prescription levels in primary care of unspecific therapy in asthma: a cross-sectional study in France and in Italy

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Aim: In medical practice, asthma is often poorly controlled and guidelines inadequately followed. Unspecific drugs are frequently prescribed, which may affect the quality of care. A better understanding of unspecific drugs prescribed is desirable to improve the management of asthma. This study aims to identify, in French and Italian primary care, the factors associated with higher prescription levels of unspecific drug classes to asthmatic patients.
Method: A cross-sectional study, based on general practitioners' computerized prescription databases (Cegedim-Strategic-Data), was conducted. Patients aged 13-40, with ≥ 4 units of prescribed respiratory drugs in 2007 or ≥ 4 visits for asthma and ≥ 2 units of prescribed respiratory drugs in 2007 and 2008 (adapted from HEDIS criteria for persistent asthma), were selected. Those who received tiotropium were excluded. Prescription levels in 2008 of antibiotics, antitussives, mucolytics, antihistamines hypnotics/anxiolytics were studied, according to patient characteristics and asthma prescription patterns.
Results: Among the 3,093 French patients (mean age 28, 50% women) and 3,872 Italian patients (mean age 29, 49% women), unspecific therapy was common. French patients under antibiotics and antihistamines were 49% and 57%, versus 60% and 43% in Italy. Increased levels of prescribed antibiotics was associated with female gender (p<0.0001), receiving oral corticosteroids drugs (p<0.0001), ≥ 6 units of short-acting beta agonists (p<0.0001nasal therapy (p<0.0001), and respiratory drugs (p<0.0001). Similar factors were found for antihistamines. Results for other drug classes will be presented for France and Italy.
Conclusion: prescription of unspecific therapy is common in asthma management and is correlated with patients' characteristics and the level of specific asthma therapy.
Conflict of interest and funding: None
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155: Perception study on asthma disease and treatment satisfaction

Martín Pérez P, Fiuza Pérez MD, Montesdeoca Naranjo H Health Center Agüimes (Gran Canaria-Spain)

Research question: How they influence asthma control satisfaction with treatment, inhaled medication management and its relationship to cognitive and emotional dimensions made by patients about their disease.
Background: Outcome in asthma depend not only pulmonary function, other characteristics are very important. In fact every time giving more weight to less biologicist aspects in the control of asthma, as high impact factors in it, as the role of beliefs about the threat to health, coping with the disease or the individual's preferences and satisfaction with treatment. All aspects which may affect adherence to therapy and therefore the effectiveness of treatment and final control of the disease with its impact on patient quality of life.
Possible methodology: This is a quasi-experimental prospective study "pre-post", where the same patients will be studied at baseline and after a standardized educational intervention (training program). Patients over 18 years have prescribed inhaled drug therapy since at least 1 year before. They will be recruited in consultation on demand, using a consecutive sampling. Patients should answer the following questionnaires: the Spanish version of the Satisfaction with Asthma Treatment Questionnaire (SATQ), FSI-10 (Evaluation of Satisfaction with Inhaler), IPQ-R (Revised Illnes

Perception Questionnaire) and the Asthma Control Test (ACT). After that, there will be talks - colloquium to patients, to assess results and comment on the questionnaires and thus use them to increase their knowledge about the disease, correct false beliefs, expectations and attitudes and assessment of inhalation technique in group.
Questions to discuss: Usefulness of these questionnaires in primary care. Relationship of these questionnaires in the pulmonary function. Characteristics that should be the tales-colloquium to modify the percepción of asthma.
Conflict of interest and funding: No both.
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321: Hospital admissions due to asthma and COPD exacerbations
Melbye H, Moe PC, Arstad F
General Practice Research Unit, University of Tromsø, Norway
Aim: To describe contacts with GPs of patients admitted to hospital due to asthma or COPD exacerbations and treatment prescribed the days before admission
Method: Patients aged 18 years or more whos were hospitalized due to exacerbation of asthma or COPD answered a questionnaire on the duration of the exacerbation and the involvement of primary care before admission
Results: 89 of 100 included patients reported a diagnosis of COPD or asthma and COPD combined. Median duration of illness before the first contact with health care was 4 days. Their personal GP was contactyed by 52 (52%), a GP on call by 40, whereas 8 contacted the hospital directly. The first consultation with a GP, which took place by phone in 48% of cases, led to hospital admission in 56 (56%), more seldom when the personal GP was consulted (40%), than when a GP on call was involved (70%, p=0.004). Among those not admitted in connection with the first contact, 22 (50%) were treated with prednisolon and/or antibiotics.
Conclusion: A considerable number of admissions due to asthma and COPD exacerbations are based on telephone consultations and not on examination by a GP the same day.
Conflict of interest and funding: No conflicts of interest
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145: Improvement of asthma care by implementation of a disease management programme in Germany
Schneider A, Mehring M, Mutschler R, Donnachie E, Hoffmann F, Keller M
Technische Universität München
Brief outline of context: The goal of the disease management program for asthma is to improve health outcome and to reduce costs. The effectiveness of such a programme is still discussed.
Brief outline of what change you planned to make: To evaluate the disease management program (DMP) for asthma in Germany with the routinely collected data from the database of Bavarian statutory health insurance physician's association (Kassenärztliche Vereinigung Bayerns).
Assessment of existing situation and analysis of its causes:: A retrospective observational study with at least more than 120.000 DMP participants over a period since the implementation from 2006 to 2010.
Strategy for change:: Implementation of a DMP asthma on practice level. Combination with financial incentives both for patients and physicians. Physicians were obliged to visit educational training.
Measurement of improvement: Analysis of routinely collected data from structured questionnaires. Items of the questionnaires were filled in by the physicians every three to six months.
Effects of changes: Prescription rate of oral corticosteroids dropped from 15.7% (year 2006) to 13.6% (2007) ($p<0.001$), and from 7.5% (2008) to 5.9% (2010) ($p<0.001$). Patients with asthma education increased from 4.4% to 23.4% ($p<0.001$). Usage of an individual self management plan increased from 40.3% to 69.3% ($p<0.001$). Hospitalisation decreased from 2.8% to 0.7% ($p<0.001$).

Lessons learnt: The limitation is that there was no control group to compare the effectiveness of DMP asthma with usual care. However, self management aspects increased to a large extent and hospitalisation decreased. It seems obvious that this improvement is caused by the DMP.
Message for others: It seems worthwhile to establish control groups during implementation of disease management programs to estimate the efficacy.
Conflict of interest and funding: No funding. Antonius Schneider is an external expert for the development of DMP asthma and DMP COPD for the German Health Ministry. He received allowance from the German Health Ministry with respect to this function.
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156: Paediatric asthma outpatient care by asthma nurse, paediatrician or general practitioner: randomised controlled trial with two-year follow-up.
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Department of Paediatrics, Amphia Hospital, Breda, Noord Brabant, The Netherlands.
mkuethe@amphia.nl
Aim: For children with stable asthma, to test non-inferiority of care provided by a hospital-based specialised asthma nurse versus a general practitioner (GP) or paediatrician.
Method: Randomised controlled trial evaluating standard care by a GP, paediatrician or an asthma nurse, with two-year follow-up.
Results: 107 children were recruited, 45 from general practice and 62 from hospital. After two years, no significant differences between groups were found for airway responsiveness, FEV1, asthma control, medication, school absence or parental work absence. In the general practice group there was a significantly lower frequency of regular review visits ('regular' = at least one review per six months) compared to the paediatrician and specialised asthma nurse group, both after one year [45.7% versus 87.9% and 94.3%, respectively, ($p<0.0005$)] and after two years [26.5% versus 87.9% and 75.8%, respectively, ($p<0.0005$)]. We found no significant differences in unplanned visits. In most cases the asthma nurse was able to provide care without consultation with the paediatrician.
Conclusion: The degree of disease control in stable childhood asthma managed by an asthma nurse is not inferior to traditional management by primary or secondary care physicians. The results also suggest that a lower review frequency does not detract from good disease control.
Conflict of interest and funding: none
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126: The impact of a nurse led clinic on exacerbations of severe asthma
Pooler, A
Keele University
Aim: To explore the association between a nurse led clinic for severe asthma and the numbers of exacerbations of severe asthma
Method: Data on numbers of exacerbations was collected for an eight year period from primary and secondary care notes. Four years was data prior to attendance at the clinic and four years following attendance. Mixed methods approach was used with quantitative analysis being in the form of paired sample t-tests to compare the data pre and post the clinic attendance. Qualitative methods included an open ended semi structured questionnaire about support mechanisms for the patients. This data was transcribed and analysed thematically
Results: n=102. Total number of exacerbations fell significantly following attendance at the clinic ($t=6.919$, $p=0.000$, $Eta^2=0.33$). Factors that patients saw important for beneficial support with their condition were supportive family members, consistency in the clinic with staff and advice given, positive relationships formed with the clinic staff and feeling listened to and being part of the decisions made about their condition and future care
Conclusion: The study findings have implications on service delivery and staff training. Further work is needed to clarify the benefits of such specialist clinics and the support mechanisms for patients

with severe asthma
Conflict of interest and funding: none, the stuyd was part of my PhD
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301: Study of Practising behaviour of Physicians in management of Broncial Asthma
Saurabh Kole, Bibhore Sengupta, Pandey Naren, Apoorva Krishna, Shankar Saha,S.P.Singh
M.P.BIRLA MEDICAL RESEARCH CENTRE; K.P.C.Medical College & Hospital Hope Super Speciality Hospital,Purnea
Aim: To study the magnitude and causes of oral steroid over use and underuse of inhalation therapy in patients of Bronchial Asthma.
Method: Two hundred and fifty diagnosed patients of Bronchial Asthma were graded according to severity with the help of spirometry.The treatment regimen being followed by patients were reviewed & then the causes of oral steroids overuse & underuse of inhalation therapy was analysed.
Results: A. In this case study it was seen that 24.4% patients had mild disease, 34% had severe disease while severe Asthma was seen in 41.6% patients. B. There was an overuse of oral steroids in treating Bronchial Asthma, as it was seen that 25(40.98%) patients of mild Bronchial Asthma were on oral steroids alongwith other medications, in moderate disease 45(52.82%) and 80(57.69%) of severe group respectively. C. However there was gross underuse of inhalation therapy i.e. inhaled beta2 agonistalone or in combination with inhalled steroids. In mild cases only 20(32.78%)patientswere on inhalation therapy. D. other medications that were being used are oral beta2 agonist used by 34% of patients, phosphodiedterase inhibitors by 68% of the patients and antihistaminics by 14% of the patients. E. In this study Poor socio-economic status of the patients was the most common cause influencing the prescribing behaviour of the physicians followed by psychological factors, other reasons include poor doctor patient relationship and poor compliance. 60(57.69%)
Conclusion: There is an overly dependence on oral steroid use for treating the patients of bronchial asthma & the poor socio-economic status of the patients was the most common cause for this prescribing behaviour of the physicians.
Conflict of interest and funding: Indian Primary Respiratory Care & Allergy foundation funding
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222: Inhalation treatment among persons with dementia, asthma and/or COPD
Österlund Efraimsson E, Olai L, Zakrisson A-B, Larsson K
Research question: How is the presence of asthma and/or COPD among persons with dementia related to expected incidence? What inhalation techniquesand levels of inhalation strength occur among patients with asthma, COPD and dementia? How is the quality of life for persons with dementia and asthma and/or COPD influenced by whether the nursing staff is given training in inhalation technique, inhalation aids and devices?
Background: There has been insufficient study of the care of persons with diagnosed dementia and the contemporary presence of asthma and/or COPD. Inhalation treatment requires active patient participation, which is difficult for a person who has dementia. A consequence of incorrect inhalation technique will be a lack of benefit of medicine affecting dyspnea, fatigue, sleeping problems, cognitive capability and respiratory infections such as pneumonia. Improved care and treatment for asthma and COPD may be of importance to these people's health, quality of life and to community medical costs. The aim is to describe inhalation treatment among persons with dementia who also have asthma and/or COPD. The aim is also to examine the effects of training/education in inhalation technique and inhalation aids for nursing staff working in dementia care.
Possible methodology: Firstly, a descriptive epidemiological mapping, scrutinizing register and journal data of the diagnoses asthma and COPD among persons with dementia, secondly, an observation of inhalation techniques and a control of inhalation strength among patients in dementia care with asthma and/or COPD. This will be carried out before and after a randomized

controlled training intervention in inhalation technique and inhalation aids given to nursing staff in dementia care.
Questions to discuss: The method for further planning.
Conflict of interest and funding: None
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231: Non-asthma GP visits as predictors of asthma exacerbations compared with adherence and severity
Michael E. Hyland, Ben Whalley, David M. G. Halpin, Colin J. Greaves, Clare Seamark, Sue Blake, Margaret Pinnuck, David Ward, Adam L. Hawkins, Dave Seamark.
University of Plymouth, UK
Aim: Avoidance of asthma exacerbations remains a key objective in asthma management. In a health care system where resources are limited, an ability to predict which patients are most likely to have an exacerbation allows resources to be targeted for maximum benefit. Although asthma severity and adherence both are related to exacerbation frequency, population studies show that the relationship between either variable and outcome is poor. In this study we tested the theoretically derived prediction that the number of non-asthma related visits to the GP predicts exacerbations.
Method: We carried out a manual search of patients' notes for 166 patients all of whom were prescribed regular prophylactic medication for whom we had data on self-reported adherence, adherence as measured by prescription records, and severity as indicated by BTS step. The number of non-routine episodes of asthma care requiring intervention (asthma exacerbations) and the number of non-asthma visits were counted over a 5 year period.
Results: The Spearman correlation between exacerbations and non-asthma visits was .35*** , with BTS step was .28***, with self-reported regular adherence was .13, and with adherence by prescription records was .21**. Further analysis by receiver operator curves (ROC) showed that 3 ot more non-asthma visits per year yeilded an area under the curve (AUC) of .75 when predicting 3 or more asthma exacerbations over the 5 year period.
Conclusion: Exacerbations can be predicted from the frequency of non-asthma visits, which may be useful in clinical practice, and provides preliminary evidence to support the hypothesis that non-specific dysregulation plays a role in asthma exacerbations.
Conflict of interest and funding: Financial support towards the study was provided in the form of a Medical grant by GSK(UK)
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S14 Early detection and Screening, Friday 27 April 2012 14.00-15.30 in Moorfoot

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212: Development and validation of a risk prediction model for general practitioner-recorded diagnosis of COPD
Kotz D, Simpson CR, Viechtbauer W, Sheikh A
CAPHRI School for Public Health and Primary Care, Maastricht, the Netherlands
Aim: To develop and validate a risk prediction model for general practitioner-recorded diagnosis of COPD.
Method: We used longitudinal data from the administration systems of 239 Scottish GP practices (GPASS), randomly allocated to a derivation and validation cohort (2:1 ratio). Patients were included if they were registered with the practices in the period between 1/4/98-31/3/08 and aged 35-74 years at entry. We excluded patients with previous recorded COPD or missing data on smoking status. Our outcome was the first recorded diagnosis of COPD. We assessed risk factors using Cox proportional hazards models.
Results: There were 480,903 patients in the derivation cohort and 247,755 in the validation cohort. The incidence of COPD in the derivation cohort was 5.68 per 1,000 patient-years follow-up

(95%CI=5.60-5.76 per 1,000). Smoking was the most important modifiable risk factor of COPD and the interaction with sex was significant; the risk for ever versus never smoking was higher in women (HR=9.44, 95%CI=8.76-10.16) than in men (HR=6.79, 95%CI=6.25-7.37). Other risk factors for both sexes were level of deprivation and recordings of physical (in)activity, asthma and respiratory symptoms. A recorded history of acute respiratory infections increased the risk only in men. The accuracy of the prediction model in the validation cohort was ROCAUC=0.74 (95%CI=0.73-0.74).
Conclusion: We have developed and validated a new model for predicting the risk of COPD incidence over a 10 year time period using routinely collected data. Our model differs from existing models that were developed for screening and case-finding of undiagnosed, but existing COPD. We identified smoking –particularly in women– and physical (in)activity as modifiable risk factors, offering opportunities for prevention of COPD.
Conflict of interest and funding: Sources of funding: DK is supported by a short-term research fellowship from the Dutch Asthma Foundation. CS is supported by a national post-doctoral fellowship from the Chief Scientist's Office of the Scottish Government. None of the authors has a conflict of interest.
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281: Screening of citizens with suspicion of COPD in eight municipalities in Denmark
Poulsen PB, Jakobsen TH, Fischer HH, Hemmingsen UB, Ollendorff S, Madsen JN, Gulstad MB, Borggren H, Kvist B, Dollerup J
Pfizer, Ballerup, Denmark
Aim: Around 430,000 Danes suffer from chronic obstructive lung disease (COPD) with one-third diagnosed today. Danish National Board of Health (NBH) recommends early detection of COPD, focusing on smokers/ex-smokers (or high-risk occupation) above 35 years with >1 respiratory symptom. Municipalities have been suggested to be responsible for early detection. A pilot study found municipalities to be feasible and reliable in terms of citizens ending up with the final diagnosis of COPD at their GP. The aim of the study was to investigate the success of screening for COPD in eight Danish municipalities.
Method: Eight municipalities (430,000 inhabitants) participated in the study offering spirometry to citizens (self-referral) with no previous COPD diagnosis fulfilling the NBH criteria. Citizens with airway obstruction (fixed ratio: FEV1/FVC<70%) were requested to visit their GP for further diagnosis. Data, including spirometry and smoking habits/history, were recorded in a secure database.
Results: 950 citizens in the risk group of COPD were included (55% females, 58 years, 45% smokers, 30 pack-years, 1-2 lung symptoms, MRC 1.6). Of the sample 34% (323) (22-44% in municipalities) had indication of airway obstruction. Screening spirometry suggested 86% had mild to moderate COPD. With evidence from the pilot study: 85% detected by municipality screening end up diagnosed with COPD at their GP. This suggests that 29% (275) of the patients in the present sample were COPD patients. After screening 65% of smokers were interested in quitting smoking.
Conclusion: The results from the municipalities showed that early detection of COPD at the municipality level seem to be worthwhile and successful. Together with the GP-level this might identify undiagnosed COPD patients.
Conflict of interest and funding: Pfizer and Boehringer Ingelheim funded the project database and assisted in analyses. Poulsen PB and Dollerup J are employees of Pfizer.
Corresponding author: Dr. Peter Bo Poulsen **Email:** peterbo.poulsen@pfizer.com

294: Early diagnosis of COPD in a High-Risk Population using spirometric screening in general practice – The TOP-GOLD study
Dollerup J, Ulrik CS, Løkke A, Dahl R, Plauborg L, Kristiansen LC, Cording PH, Dehlendorff C on behalf of the TOP GOLD study-group
Pfizer, Ballerup, Denmark

Aim: Around 430,000 Danes suffer from chronic obstructive lung disease (COPD) with only around 1/3 diagnosed. The National Board of Health (NBH) recommends early detection, focusing on smokers/ex-smokers or in high-risk occupations, above 35 years with at least one respiratory symptom. Aim: To identify early stages of COPD in a high-risk population identified in general practice.
Method: Participating GPs (n=241) recruited subjects with no previous diagnosis of obstructive lung disease, > 35 yrs, smokers/ex-smokers and at least one respiratory symptom (i.e. dyspnoea, cough, wheeze, phlegm, infection). Age, smoking status, pack-years, BMI, dyspnoea score (MRC). Subjects with airway obstruction (Fixed ratio FEV1/FVC ≤ 0.7) at initial spirometry were tested for bronchodilator reversibility.
Results: A total of 4.049 (49 % females) subjects were included; mean age 58 yrs, BMI 27, and 32 pack-years. The COPD prevalence in our population of high risk patients was 21.7%; 8.3% in subjects younger than 48 years. Most patients were classified in GOLD stages I and II (36% and 50%, respectively). The number needed to screen (NNS) for a new diagnosis of COPD was 4.6.
Conclusion: A case-finding strategy providing screening and diagnostic spirometry to high-risk subjects in primary care identifies a large proportion of undiagnosed COPD patients, especially in the early stages of the disease.
Conflict of interest and funding: Pfizer and Boehringer Ingelheim funded the project database and assisted in analyses. JD is an employees at Pfizer. CSU, AL and RD has received honorarium participating in the steering committee. LP is an employee at Boehringer Ingelheim. LCK, PHC and CD have recived honorarium in connection with designing, hosting the consolidated database.
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114: Screening for the "missing millions" with COPD ….it's more than just the lungs.
Dr Kevin Gruffydd-Jones
Box Surgery, Box, UK
Aim: To identify patients with COPD , diabetes and high risk of cardiovascular disease (CVD) in smokers over 40 in a UK GP Practice. 2. To examine the utility of the COPD Assessment Tool (CAT) in screening.
Method: Smokers >40 without a diagnosis of COPD/asthma in a single UK General Practice were invited to attend for screening with diagnostic post -bronchodilator spirometry , CAT (1) blood pressure, fasting lipids ,glucose. and the cardiovascular measured by QRISK(2) 1. www.catestonline.org 2. www.qrisk.org
Results: 120 out of 418 patients invited were screened. 3 had known CVD . 31/117 (26%) were found to have high risk of CVD QRISK>20%) 13 (11%) were diagnosed as COPD 60% had CAT score 5-10(mild impairment) and 40% CAT score 10-19 (Moderate impairment) .There was no correlation of CAT score with a diagnosis of COPD or not, but CAT helped identify symptomatic patients. 61% newly diagnosed COPD patients had high risk CVD 2 patients were found to have diabetes.
Conclusion: 1.Screening for COPD should include identification of cardiovascular risk factors. 2. The CAT can help identify symptomatic patients when screening.
Conflict of interest and funding: Self -funded KGJ has previously accepted research funding for CAT
Corresponding author: Dr Kevin Gruffydd-Jones **Email:** gruffbox@btinternet.com

214: Measuring initial FEV1 using a hand held spirometer helps improve pick-up rate for previously undiagnosed COPD in selected patients.
Mark Hopkin, GP Respiratory Lead, Moss Grove Surgery, 15 Moss Grove, Kingswinford, West Midlands DY6 9HS Joanne Hamilton, Lead Nurse Respiratory Mandy Hamilton, Respiratory Project Support Worker
Dudley Respiratory Group.
Aim: One of the targets in the new NHS strategy for COPD is to find patients with undiagnosed COPD with the expectation that early diagnosis helps improve quality of life and long-term outcomes.

Dudley Respiratory Group undertook an audit between November 2010-July 2011 to identify such patients and initiate early intervention.
Method: The audit involved screening symptomatic or asymptomatic patients aged 35-75 with a smoking history of 20 pack years (current or ex-smokers) over a 6-month period. All participating GP practices assessed patients initially and measured FEV1 using a hand held spirometer provided by Pfizer. Pfizer also helped to formulate a project plan and support the team. Patients were referred to Dudley General Hospital (DGH) for full spirometry and reversibility testing if they had an FEV1
Results: Thirty GP practices participated in the audit. In total, 286 patients were screened. Of these, 181/286 (63%) met the criteria for referral and 130/286 (72%) patients attended Open Access spirometry at DGH. Of these 181 patients, 4/181 (1%) were diagnosed with severe COPD, 30/181 (10%) with moderate COPD, 24/181 (8%) with mild COPD and 71/181 (25%) with no COPD
Conclusion: Of the patients initially selected and screened, 32% (58/286) were diagnosed with COPD by subsequent full spirometry and reversibility testing. This confirms the value of screening symptomatic or asymptomatic patients aged 35-75 with a smoking history of 20 pack years and performing initial FEV1 with a hand held spirometer to improve the pick-up rate for previously undiagnosed COPD.
Conflict of interest and funding: Pfizer Rharmaceuticals funded hand held spirometers to practices.
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141: Early detection of COPD in primary care – The Copenhagen COPD Screening Project
Lyngsø A, Gottlieb V, Backer V, Nybo B, Jørgensen HL, Østergaard MS, Frølich Corresponding author, Lyngsø A
Department of Integrated Healthcare, Bispebjerg University Hospital, Copenhagen, Denmark
Aim: To evaluate the effectiveness of a two-stage-screening programme in primary care
Method: Subjects aged 65 years or older registered with a general practitioner (GP) in eastern Copenhagen received a simple questionnaire concerning smoking status and symptoms of COPD and an invitation to undergo spirometry at their GP or at a local health care centre if they were smokers, former smokers or if any of the following signs were present: morning cough with sputum and/or dyspnoea
Results: A total of 7103 subjects participated in the study. Of these 5767 subjects returned the questionnaire (81.2%), with 58.5% of the responders being at risk of COPD. Of the 45 general practices in the study area, 10 did not perform spirometry. Subjects listed with one of these practices were told to contact a local health care centre for spirometry. The participation rate among subjects at risk of COPD was 60% at the local health care centre and only 35% in general practice. In total 1352 subjects underwent spirometry. Of these 44% were diagnosed with COPD according to the GOLD classification. The disease was classified as mild in 252 (42.3%), moderate in 258 (43.3%) and severe to very severe in 86 subjects (14.4%).
Conclusion: The study shows that a short, mailed questionnaire based on patient-reported information can serve as a first-level screening tool for the identification of subjects at risk of COPD. Regarding the organisation of spirometry, the setting seems important for the participation rate.
Conflict of interest and funding: I declare no conflict of interest. The study is supported by grants from the Ministry of Health and Prevention, the Commitée for Quality and CME for General Practitioners, Department of Primary Health Care Administration, Capital Region of Denmark
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161: Missed diagnostic opportunities to diagnose COPD: a real-world observational study from the UK
Price D, Halpin D, Winter R, Hill SL, Bateman E, Freeman D, Ryan D, Kearney M, Holton K, Moger A, Burden A, Ziegenweidt J von, Mascarenhas L, Chisholm A, Jones R
University of Aberdeen, UK
Aim: Characterise healthcare utilisation in the yrs preceding a definitive COPD diagnosis to identify

"red flags" that may aid in earlier diagnosis.
Method: Retrospective observational study using pooled routine practice data from the General Practice and Optimum Patient Care Research Databases. Patients were: ≥40 years, received a COPD diagnosis between 1990–2009; were prescribed ≥2 COPD therapies in the yr following diagnosis, and had ≥2yrs of continuous practice data prior to their diagnosis. Non-routine healthcare resource utilisation was monitored in the yrs preceding COPD diagnosis.
Results: 38,859 eligible patients: 52.6% male, diagnosis with COPD at median (IQR) age of 68 (60–75) years. In the 2yrs prior to diagnosis, 56.4% consulted on multiple (≥2) occasions for lower respiratory (LR) complaints, 26.5% for lower respiratory tract infections. Of these, 34.5% received multiple prescriptions for oral steroids (71.4%) and/or antibiotics (82.5%). These patients also recorded more respiratory outpatient visits over the 10yrs, and inpatient hospitalisations over the 4yrs, prior to diagnosis. Significantly more patients diagnosed in secondary care (or within 2-weeks of a hospital admission) had received multiple LR prescriptions in the prior 2yrs than patients diagnosed in primary care (40.7% vs 34.5% p=0.007).
Conclusion: The data suggest increased use of non-routine respiratory resource by patients in the 2- to 10-yrs prior to their COPD diagnosis suggesting opportunities for earlier COPD diagnosis and/or assessment may be missed in the UK.
Conflict of interest and funding: No conflict of interest or funding
Corresponding author: Professor David Price

226: Screening for occupational respiratory disease – necessity in primary care
Wimalasekera Savithri W, Seneviratne ALP, Samaranayake S, Siriwardene P, Paranavitane S,
Senior Lecturer Dept. of Physiology, Faculty of Medical Sciences, University of Sri Jayewardenepura, Sri Lanka & Council member of the PCRGSL
Aim: To determine respiratory dysfunction among patients referred for spirometry. To assess the association between respiratory symptoms and spirometry results among subjects exposed to occupational respiratory hazards
Method: A cross sectional study was conducted on 137 consecutive patients referred for respiratory function tests by primary care physicians. Subjects were assessed for respiratory symptoms by a disability questionnaire and for respiratory function by a Vitallograph spirometer. The data were analysed in groups for reversible obstructive airway disease (BA), non reversible obstructive airway disease (COPD) and restrictive air way disease (RD). COPD was staged according to GINA guidelines
Results: 137 subjects were studied and 70% were males. BA was diagnosed in 52% of subjects, 45% had COPD and 2% had RD. 28% had stage 2 COPD and 14% had stage 3 COPD. All male COPD subjects were smokers. 30 % of COPD patients were exposed to occupation related COPD and 36% had occupation related BA. There was a positive correlation between the duration of employment and respiratory symptom scores ($p < 0.05$).
Conclusion: Occupation related respiratory disease is commonly encountered in primary care. Early assessment of respiratory function in high risk occupations is crucial to prevent major respiratory disability and disease.
Conflict of interest and funding: There is no conflict of interest. IPCRG bursary confirmed
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S15 Smoking, Friday 27 April 2012 14.00-15.30 in Kilsyth

192: Use of medical resources in smokers
Suarez-Bonel MP, Córdoba-García R, Villaverde-Royo MV, Sánchez-Galán P, Marco-Gracia M, Fernández-Revuelta A, Quintana-Velasco C.
Delicias Sur Healthcare Center.
Aim: To verify if smokers use more healthcare resources than nonsmokers.

Method: It is based on a retrospective case-control study (January-December 2009). We selected 410 patients from 45 to 75 years old from our healthcare center in Zaragoza (Spain); the patients were grouped by age, sex and smoke habits. Ex-smokers were excluded. We extracted the data from two different databases: our Primary Healthcare Center database (OMI-AP) and our reference hospital Intranet.We analyzed the data to determine the usage of primary care and hospital services, presence of chronic diseases, drugs for long-term use, days of work incapacity (WI), and other factors.
Results: Chronic disease was found in 33.6% of patients that smoke and 13.5% of patients that did not smoke. Smoking was determined to increase the possibility to suffer chronic diseases (OR= 3,64) (CI 95%=2,11-6,25). Average number of visits per year to primary healthcare center for nonsmokers was 10,03 and for smokers 11,64 (OR=1,08) (CI 95%:1,02-1,14). The average number of days admitted at a hospital were 1.32 in smokers and 0.39 in nonsmokers (OR: 3,55) (CI 95%: 1,82-6,90). The average number of drugs for long-term use in smokers was 3,41 and in nonsmokers it was 2.09 (OR =3,02) (CI 95%: 1,93-4,75). Average of days off due to WI in smokers was 28,06 and in non-smokers it was 11.26 (OR = 1.73) (CI 95%: 1.06-2,81).
Conclusion: Smokers have more chronic diseases, more visits to primary care services, an increased number of days admitted at hospital per visit, more usage of drugs and more days off due to WI per year. It is therefore important to invest more resources into programs that encourage and facilitate people to quit smoking.
Conflict of interest and funding: The authors declare no conflict of interest or funding.
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206: Smokers with chronic illness: a qualitative analysis of barriers, motivation to quit and tailored interventions for smoking cessation in smokers with and without COPD
Alexis-Garsee C, Gilbert H, van den Akker, O
Middlesex University, London, UK
Aim: Smoking cessation is recommended as one of the most important measures in the management of COPD. Although smokers with COPD are less likely to quit than those without impaired lung function, few studies have investigated the effectiveness of smoking cessation interventions with this population, and none have used a tailored approach to smoking cessation. Therefore this study aimed to understand the barriers and motivation to quit in smokers with and without COPD and to obtain participants' perception of computer-tailored reports developed for smoking cessation.
Method: Twenty-six smokers from six GP surgeries in North London took part in a qualitative study. Personalised tailored reports based on participants' responses to a postal questionnaire were sent to each participant. They were then interviewed and a thematic analysis was undertaken.
Results: Interviews were conducted with 12 women and 14 men. Nine were diagnosed with COPD, although 16 indicated a score of Grade 2 or higher on the MRC Dysponea Scale. Those with COPD were on average older, single, unemployed, less educated, smoked more cigarettes per day and smoked within 30 minutes of waking. There were commonalities in those with and without COPD in three of the themes identified: 'Use of Cigarettes', 'Cessation Strategies'; and 'Tailored Feedback – A New Experience'. However, differences were found in one main theme: 'Barriers and Motivation to Quit'.
Conclusion: Findings suggest a role for tailored interventions in smokers with a chronic illness. The data also highlights the difficulties that smokers experience when quitting and point to strategies that could be implemented in GP practices to support smokers with chronic illness to quit.
Conflict of interest and funding: No conflict of interest. The study was funded by the UKRRF, IPCRG.
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331: Smoking among high school students in Northern Greece.
Dimopoulou S., Kokkali S., Paganas A., Ioannidis D., Tsiligianni I.

ELEGEIA-Greek Association of General Practitioners
Aim: To investigate attitudes and habits of high school students towards smoking in the area of the responsibility of the Primary Health Care Center of Kassandria, Halkidiki, Northern Greece.
Method: An anonymous questionnaire regarding smoking has been delivered to high school students. The questionnaire included informations about smoking behavior of the students and their parents, desire to quit or not and previous attendance of lectures about tobacco use. Additionally, after the completion of the questionnaires, lectures were given as a part of a broader program in an attempt to reduce the prevalence of smoking among students. The results were analyzed using x^2.
Results: Questionnaires were selected from 469 students (four public schools). 246 (52.5%) were males, the majority of whom belonged to the 13-15 years old age group (36.9%). 78 (16.6%)students declared to smoke regularly and twice as many 143 (13.5%) to have tried to smoke. The majority of the students (294/62.7%) claimed that at least one of their parents smoke and 358 students (76%) that they have attended a lecture about smoking in the past. There were no gender differences regarding smoking (p=0.131). 78.2% of the students that smoked said that their parents also smoked. Having parents smokers was related to adolescent smoking (p=0.002). Finally, 78% of the students that smoked and 76% of the students that didn't smoke claimed to have attended a lecture about smoking in the past.
Conclusion: Smoking continues to be a common trend among high school students. A second questionnaire to assess the efficacy of the lectures will be also assessed in the near future.
Conflict of interest and funding: None
Corresponding author: Ms Sofia Dimopoulou

317: Smoking cessation in primary care settings in Greece. The role of nurse
Stamatopoulou E, Amprachim E, Stamatopoulou A, Pantza E, Giannopoulos D, Prekates A
Nursing ICU General Hospital Tzaneio (Pireaus) MS(c) National School of Public Health (ASPHER)."ECDC"
Aim: The rise of role of nurse in the frame of primary health care team against the smoking cessation.
Method: A structured closed questionnaire was distributed at 40 health centers in mainland and island Greece. 220 nurses were surveyed and a rate of 65% was responded.
Results: It was found that 32% of nurses were smokers, 54% were non-smokers while 14% were former smokers. The highest percentage of smokers was found in the age groups 20-25 years (30%) and 26-30 years (32%). There was significant difference between the attitudes of smokers and nonsmokers, 78% of nonsmokers agreed that cigarette smoke is a significant risk to health compared with only 52% of smokers. Only 8% of respondents had received training in smoking cessation. Lack of time (77%) and lack of education (78%) were the two main reasons why nurses do not consider themselves able to give advice to patients on smoking cessation.
Conclusion: Unlike in other countries with experience in primary health care nurse plays an important role in the Group Health. Education and awareness of nursing staff are needed to participate in the fight against in smoking cessation.
Conflict of interest and funding: no
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221: The impact of graphic warnings on cigarette packets- more harm than good?
Gabe-Thomas E, Jones RCM, Hellier E, Hyland ME.
The School of Psychology Plymouth University
Aim: Graphic warning labels on cigarette packet are deployed globally in an attempt to prevent people from starting smoking and encourage smoking cessation. We aimed to review the impact of current graphic warnings, studying both efficacy and potential for harm.
Method: Efficacy of current graphic warnings: an updated literature review based on a recent

systematic review was carried out. The adverse effects produced by graphic warnings are currently being examined in a new ongoing systematic review.
Results: Evidence for efficacy in promoting smoking cessation largely report intention to quit; data on quit rates showed small actual changes, in one Australian study quit attempts increased by 1.2%, successful by 0.1%. Of the papers considering adverse effects of graphic warnings, many found evidence of adverse effects e.g. denial, defensive avoidance and relief craving (such effects were found in the majority of experimentally controlled studies). Evidence was found that the warnings may be detrimental in some high risk populations, in particular heavy smokers. None of the warnings encouraged early diagnosis of smoking.
Conclusion: The benefits of graphic warnings may have been overestimated by policy makers. Graphic warnings may be harmful in groups such as heavy smokers by creating negative emotions and thereby reducing the likelihood of quitting. Given the massive prominence of the campaign supported by WHO there should be robust evidence of effectiveness and the warnings modified accordingly to optimise outcomes. Research should be considered into warnings designed to alert people of the early symptoms of smoking related diseases.
Conflict of interest and funding: No conflicts of interest No external funding
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107: Can all patients being admitted to hospital be screened for smoking status?
Kaplan A, Takhar K, Wilson M, Black A.
University of Toronto, Toronto Canada
Aim: To ultimately screen all patients who are admitted to hospital for their smoking status to ensure that support for quitting smoking starts on admission to ultimately assist in reducing smoking in our community.
Method: A concerted effort to identify and document the smoking status of all patients admitted to our Community Hospital, Brampton Civic Hospital was begun with five units as an initial step to then becoming a corporate procedure to then allow smoking cessation support to begin at admission. The electronic chart had a place identified for smoking status to be filled in by the nurse doing the admission assessment.
Results: This survey was done in five units, CCU-Cardiology, Respiratory-GI, Neurology, General Surgery, and Mental Health. 596 patients were screened, and 67 were missed, indicating that 89% of patients were appropriately screened. Overall, 20% of the patients admitted to hospital were found to be current smokers. Interestingly almost equal numbers of patients of each sex were screened (307 M, 289 F), the rate of smoking in males was more than twice as high (27% M vs 12.5% F). The highest prevalence rate of smoking was in Mental Health (31%) followed by Respiratory-GI (25%).
Conclusion: The first step in being able to offer smoking cessation assistance is identification of smokers. This can be done by supporting the nursing staff to ask and document for smoking status during their admission assessments. After identification, a protocol for smoking cessation is being created in the hospital to begin smoking cessation efforts in the hospital, to be followed by the primary care practitioner in the community.
Conflict of interest and funding: none
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144: Very low rate and light smokers: smoking patterns and cessation-related behaviour in England, 2006-2011
Kotz D, Fidler J, West R
CAPHRI School for Public Health and Primary Care, Maastricht, the Netherlands
Aim: To examine changes in prevalence over the past 5 years, cessation patterns, and smoking and demographic characteristics of very low rate (<1cpd), light (1-9cpd) and moderate-to-heavy (10+cpd) smokers in England.
Method: We used data from a representative sample of 23,245 English smokers interviewed

between November 2006 and May 2011 of whom 4,147 (18%) provided data at 6-month follow-up.
Results: Very low rate smoking remained extremely rare (1.9% of smokers in 2006 to 2.8% in 2011) but light smoking became increasingly common (23.9% to 32.8%). Compared with moderate-to-heavy smokers, very low rate and light smokers were younger, more often female, and from a higher socioeconomic background. They were more motivated to quit and enjoyed smoking less. During the 6-month follow-up period, light smokers, but not very low rate smokers, were more likely to attempt to quit than moderate-to-heavy smokers. When they tried to quit, very low rate and light smokers used aids to cessation less than moderate-to-heavy smokers but still used them to a substantial degree: 18%, 31% and 44% used nicotine replacement therapy over the counter in their most recent quit attempt for the three types of smoker respectively. Even very low rate smokers had a substantial failure rate: 65% failed in their most recent quit attempt within 6 months.
Conclusion: Very low rate (<1cpd) and light (1-9cpd) smokers in England are at least as motivated to quit as heavier smokers. Although they use cessation medication less than heavier smokers and are more likely to succeed, they still use such medication and fail in quit attempts to a substantial degree.
Conflict of interest and funding: Robert West undertakes research and consultancy for, and has received travel expenses and hospitality from, companies that develop and market smoking cessation medications. He has a share on a patent for a novel nicotine delivery device. Daniel Kotz and Jennifer Fidler do not have a conflict of interest.
Corresponding author: Dr Daniel Kotz **Email:** d.kotz@maastrichtuniversity.nl

193: Identifying barriers to the provision of smoking cessation assistance among Romanian family physicians

Panaitescu C, Moffat M, Boros M, Tsiligianni I, Alexiu S, Oana CS
CMI Dr. Panaitescu Catalina, Bucharest, Romania
Aim: Smoking Cessation (SC) is the most effective intervention to prevent, to slow the progress of and to improve outcomes in a number of respiratory diseases and other health diseases. Romania has the appropriate legislation and a national programme against tobacco consumption. Previous local studies suggested however that only a small number of smokers are advised to quit by their family physicians. This study aims to describe the barriers to attempt smoking cessation assistance among Romanian family doctors.
Method: A qualitative evaluation was carried out 41 family physicians (FPs); 10 participated in a focus group and 31 took part in semi-structured interviews. The participants were recruited from urban and rural areas (purposive sampling). Participation was voluntary. The results are presented descriptively.
Results: Five main barriers were identified: minimization of the family physician's role in the SC, FPs'lack of time within the consultation, FPs' lack of motivation, patients' inability to support the drug therapy expenses and defective SC skills. Within this framework, a number of barriers were identified as having a special importance. Examples include: the absence of the habit or of a proper method to flag the smokers' files, the lack of information regarding the possibilities to refer the smoker, inadequate cessation clinical skills exposing to failure and frustration.
Conclusion: Some of the barriers that the Romanian family physicians encounter to providing SC assistance are similar to those faced by other specialists, but there are also barriers that apply most particularly to this activity within Romanian primary care.
Conflict of interest and funding: No conflict of interest. The focus group was organised with the support of the Servier pharmaceutical company.
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292: Smoking prevalence and willingness to quit in newly screened Danish patients diagnosed with airway obstruction

Dollerup J, Poulsen PB, Ulrik CS, Løkke A, Dahl R, Holt J, Cording PH, & Andersen KK.
Pfizer, Ballerup, Denmark
Aim: 436,000 Danes have chronic obstructive pulmonary disease (COPD) with one third diagnosed. 80-90% is tobacco related. Smoking cessation (SC) initiatives is primary intervention curbing disease progression. The Danish National Board of Health (NBH) recommends early detection of COPD focusing on: Age above 35 years. Smokers/ex-smokers and at least one pulmonary symptom. Aim: To evaluate the smoking prevalence and willingness to quit smoking in a population of newly diagnosed patients with airway obstruction in primary care in Denmark.
Method: Following the recommendations by the NBH, participating GPs (n=335; 10% of Danish GPs) offered consecutively spirometry to patients with no previous diagnosis of airway obstruction. Fixed ratio FEV1/FVC < 70 % was used for screening for airway obstruction. Demographics, spirometry, smoking status, smoking history and willingness to quit was recorded. The population indicated having COPD, was assed as to smoking status and smoking cessation initiatives.
Results: 3498 patients had spirometry, 1295 patients (37%, mean 61 years, 48% females) had airway obstruction. With more women than men (P=0.03) in total 64%, diagnosed with obstruction smoked (37 pack years, 17 cigarettes/day). 66% of smokers had a history of cessation attempts and 54% had used medication as part of the SC. 62% of the smokers liked to quit, but only 11% intended to start immediately.COPD severity and willingness to quit was not correlated.
Conclusion: Many patients identified with airway obstruction, indicating COPD, are current smokers. There is willingness to quit smoking, but only a few intend to initiate SC immediately, though guidelines recommend smoking cessation as primary intervention.
Conflict of interest and funding: Pfizer and Boehringer Ingelheim funded the project database and assisted in analyses. JD is an employees at Pfizer. CSU, AL and RD has received honorarium participating in the steering committee. LP is an employee at Boehringer Ingelheim. LCK, PHC and CD have recived honorarium in connection with designing, hosting the consolidated database.
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S16 Measuring health status, Friday 27 April 2012 14.00-15.30 in Sidlaw

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312: The association between small airways dysfunction and asthma symptoms based on the Asthma Control Questionnaire (ACQ) and the Clinical COPD Questionnaire (CCQ).
Schiphof-Godart L, van der Wiel E, van den Berge M, ten Hacken NHT, Postma DS, van der Molen T
University Medical Centre Groningen, Groningen, The Netherlands
Aim: To investigate the association between Small Airways Dysfunction and asthma symptoms based on the ACQ and CCQ questionnaires.
Method: We have investigated lung function variables in asthma patients from primary care practices referred to LabNoord, Groningen, The Netherlands. A total of 814 patients met the following inclusion criteria: asthma according to their GP, age > 18 years, availability of lung function measurements according to ATS-criteria and FEV_1 %pred > 90%. Their mean ± SD age was .53 ± 13,7 years, 32% were male). FEV1%predicted and PEF%predicted pre bronchodilator were considered to reflect large airway function and midexpiratory flow at 50% of the forced vital capacity ($MEF_{50\%}$) % predicted before bronchodilator was chosen as measure of SAD.
Results: $MEF_{50\%}$ was negatively correlated with ACQ wheezing and ACQ number of rescue puffs. The other items contained in ACQ and CCQ were not significantly correlated with $MEF_{50\%}$.FEV1 %predicted was associated with ACQ asthma symptoms, ACQ number of rescue puffs and CCQ functional. Finally, the strongest correlations were found with the PEF. Only ACQ number of rescue puffs and CCQ mental were not significantly correlated with PEF.
Conclusion: PEF is most strongly correlated to both ACQ and CCQ symptoms. PEF is a measure of large airway function in asthma, in contrast to $MEF_{50\%}$ which more closely reflects SAD. It therefore seems that the present ACQ and CCQ-items are not fit to assess symptoms of SAD-patients. The development of new patient reported outcome tools which assess symptoms of small airway

dysfunction should therefore be considered.
Conflict of interest and funding: None.
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316: Qualitative Study of the differences in symptoms or patient characteristics between Small Airways Dysfunction (SAD) and non-SAD in asthma.
Schiphof-Godart L, van der Wiel E, van den Berge M, ten Hacken NHT, Postma DS, van der Molen T
Research question: Do differences in symptoms exist between asthma patients with and without SAD?
Background: There has been increasing interest in the role of SAD in asthma. Thus far, little is known about the association between small airways parameters and asthma symptoms. Items contained in questionnaires such as the ACQ and CCQ mostly reflect large airway function. Therefore, the goal of this study is to realize a first step in the development of a questionnaire which might assess symptoms of SAD.
Possible methodology: First, the cooperation of GP's will be needed. Consenting GP's will authorize us to select asthma-patients in a regional database, meeting our inclusion criteria. Participating patients will be submitted to a series of asthma and lung function tests. Third, patients with confirmed asthma (with or without SAD) will be interviewed in order to collect information about their symptoms, complaints and characteristics possibly related to SAD. Differences between SAD- and non-SAD asthma patients may lead to items to be included in a new, SAD-Questionnaire.
Questions to discuss: The first question concerns the specific asthma-symptoms which might be different in SAD and non-SAD, and therefore should be mentioned in the interviews. Secondly, other, perhaps more general or not particularly asthma-related patient characteristics might allow distinguishing both sorts of asthma.
Conflict of interest and funding: None.
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253: Socioeconomic status, quality of life and health care access in COPD
Georgopoulou S, Wright AJ, Weinman J, Booth H, Thornton H, White P.
King's College London, King's Health Partners, Department of Primary Care and Public Health Sciences, London, UK
Aim: To seek associations between socio-economic status (SES) and health-related quality of life (HRQoL) and healthcare access (HA) in patients with COPD from a systematic review of the literature.
Method: Medline, IBSS, PsychInfo, Embase, Web of Science, Ingenta Connect and CINAHL were searched (1947 to May 2010) using search terms including "Chronic Obstructive Pulmonary Disease", "COPD" and "prevalence". SES was defined by education, income or occupation. HA was defined by utilisation as attendance, prescription pattern and specialist referral. HRQoL was defined as physical, functional, social and emotional well-being measured with validated instruments. Quality was assessed by design, external validity, measurement bias, instrument validation, definition of outcome and confounding. A key quality measure was inclusion of severity as a confounding element.
Results: 6,844 papers were screened, 4,837 abstracts were assessed, 72 articles were assessed in full, and 21 were included in the review, 16 on association between SES and HRQoL, and 5 between SES and HA. 6 studies were of adequate quality for the analysis of association: three between SES and HRQoL and three between SES and HA. SES was significantly correlated with HRQoL (lower educational attainment and household income were related to greater disease severity, poorer lung function, greater functional limitation and lower HRQoL) and to a limited extent with HA (lower education and household income were related to greater discussion of prognosis, and greater adherence to inhaler use).
Conclusion: In studies that controlled for the effect of disease severity low socioeconomic status in

COPD was associated with marginal increased access to healthcare but poorer outcome in quality of life.
Conflict of interest and funding: Ms Georgopoulou is funded by a King's College London PhD scheme. No conflicts of interest are declared.
Corresponding author: Dr Patrick White **Email:** patrick.white@kcl.ac.uk

339: Utility of COPD Assessment Test ("CAT") in primary care consultations
Gruffydd-Jones K, Marsden H, Holmes S, Kardos P, Escamila R, Dal Negro R, Roberts J, Nadeau G, Vasselle M, Leather D and Jones P
Box Surgery, Box, United Kingdom
Aim: The quality of a consultation can impact the quality of care and patient engagement in treatment decisions. We developed a novel study design to assess whether the COPD Assessment Test ("CAT") could improve the quality of communication between physician and COPD patient in a primary care consultation.
Method: Primary care physicians (PCPs) across Europe conducted six consultations with standardised COPD patients (played by trained actors), which included specific patient issues. PCPs were randomised to have the patient medical history only ("CAT-" arm), or the patient history plus the CAT ("CAT+" arm) in the consultation. The consultations were videoed, and PCPs were scored by independent assessors on their ability to identify and address individual patient issues (sub-score A), review standard COPD issues (sub-score B), their understanding of the case (diagnosis score) and their overall performance. The primary endpoint for the study was a global score (sub-scores A+B, scored out of 40).
Results: Of the 165 PCPs enrolled in the study, 147 were evaluable (at least one consultation assessed, and met eligibility criteria). No difference was seen between the arms in the mean global score (CAT- 20.3; CAT+ 20.7; 95% CI [-1.0:1.8] p=0.606). Similarly, no effect of the CAT was observed in sub-score A (p=0.255), however sub-score B mean was significantly different between the arms (CAT- 8.8; CAT+ 9.6; 95%CI [0:1.6] p=0.045). There was no difference between the arms in diagnosis score (p=0.824) or overall performance (p=0.655).
Conclusion: The CAT helps clinicians understand COPD-related symptoms, however needs to be used alongside good clinical practice for holistic management of co-morbidities
Conflict of interest and funding: This study was funded by GlaxoSmithKline (SCO114293) Marsden H, Nadeau G, Vasselle M, Leather D are employees of GlaxoSmithKline. All other authors received honoraria from GSK for participation in the steering committee of this study. In addition: Holmes S has received speaker fees, travel grants and honoraria for advisory board from AZ, Boehringer Ingelheim, Chiesi, GSK, MSD, Napp, Novartis; Roberts J has received speaker fees, travel grants and honoraria for advisory board from AZ, Boehringer Ingelheim, Chiesi, GSK, MSD, Novartis, Teva Kardos P has received honoraria for advisory board, travel grants and speaker fees from AZ, Boehringer Ingelheim, Chiesi, GSK, MSD, Novartis, Nycomed
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255: Validation of a questionnaire for the assessment of bronchial hyperresponsiveness to a Greek population
Ioannidis D, Porpodis K, Domvri K, Papakosta D, Tsiligianni I
Aristotle University of Thessaloniki, Greece
Aim: To validate the bronchial hyperresponsiveness (BHR) questionnaire to a Greek population
Method: A cross sectional study was conducted at the asthma outpatient clinic of the University Pulmonary Clinic of the Aristotle University of Thessaloniki, Greece. Inclusion criteria were males and females, age 14 to 75, with recent history of asthma symptoms and without any other known respiratory/systematic disease that affect BHR. During their assessment, translated copies of the BHR questionnaire were delivered to eligible subjects that gave their informed consent. The gold standard method chosen was the mannitol challenge test.

Results: 62 patients in total (21 males and 41 females) were recruited (mean value±SD): mean age 34±14.9, mean total score of the questionnaire 54.39±40.88 and mean subscores for symptoms and stimuli 28.29±19.97 and 26.10±24.07 respectively. During mannitol challenge subjects achieved a mean fall of FEV1 13.41±1.79 and a provocative dose of mannitol, mean PD15 373.11±61.7 mg. Correlations among variables have shown significant positive correlations among all score variables and negative correlations among the scores and the mannitol test results. Construct validity was assessed with principal component analysis identifying one reliable underlying factor that explain 42.4% of the variance. Reliability test has showed Cronbach's alpha: 0.957 that represents a very good reliability regarding the internal consistency of the questionnaire items. Sampling adequacy was assessed with Kaiser-Mayer-Olkin (KMO) statistic (KMO = 0.8). Receiver Operating Curve analysis has determined a cut off value of 26 of the total questionnaire score for BHR response with sensitivity of 57.1% and specificity of 80%.
Conclusion: BHR questionnaire was validated to a Greek population consisting thus an applicable tool for assessing BHR response to the community.
Conflict of interest and funding: None
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199: Sleep Obstructive Apnea and Epworth Sleepiness Scale
Vicente C., Freitas S., Catarino A.
UCSP Montemor-o-Velho, Portugal
Aim: Breathing disorders, such as Obstructive Sleep Apnea (OSA) are currently a major public health problem. Describing a population that underwent a cardio-respiratory polysomnography home study with posterior response to therapeutics, analyzing multiple parameters such as sex, age and cardiovascular risk. The main goal was to relate Epworth Sleepiness Scale(ESS) assessment before and after treatment as an instrument of diagnosis and treatment evaluation in Primary Care.
Method: One hundred and twenty clinical files of patients that underwent a cardio-respiratory polysomnography home study were randomly selected for diagnosis of OSA, between the years 2008 – 2010.
Results: Out of the 120 files included in the study, 11 were excluded due to insufficient data. Statistical correlation between the apnea/hypopnea index (AHI) and ESS was found. OSA was diagnosed in 96 patients who remained in the study, mostly males (77,1%) with an average age of 59,26 years. The medium BMI was 32,37 kg/m2. In 38.5% of the patients, short and broad neck was an objective finding. Considering hypertension (60,4%) and dyslipidemia (47,9%) a statistical relationship with the AHI was established .Drinking and smoking habits were found in 59.4% and 19.8% respectively Most patients referred loud snoring (91.7%) and excessive daytime sleepiness (75%). This was subjectively measured by ESS before and after treatment, with a reduction of 5, 36 points with statistical significance
Conclusion: Most results in this study were consistent with what was expected and with other studies reported in the literature. As a subjective measure of daytime sleepiness, the ESS can be easily implemented and used in Primary Care as a tool to screen potential OSA patients in which a cardio-respiratory polysomnography can be justified. It was also very useful in gauging the response to treatment.
Conflict of interest and funding: None
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233: Assessing health status in COPD. A head-to-head comparison between health status questionnaires
Tsiligianni I, van der Molen T, Moraitaki D, Lopez I, Kocks JW, Karagiannis K, Siafakas N,Tzanakis N
Department of general practice, UMCG, University of Groningen, GRIAC research institute, Groningen, The Netherlands
Aim: The aim of this study was to compare the COPD Assessment Test (CAT) and the Clinical COPD

Questionnaire (CCQ), while using the St. George Respiratory Questionnaire (SGRQ) as a gold standard to assess health status in COPD.
Method: We administered CAT, CCQ and SGRQ in patients with COPD all stages during three visits. Spirometry, BODE index, MRC scale and patients perspectives on questionnaires were recorded. Standard Error of Measurement (SEM) was used to calculate the Minimal Clinical Important Difference (MCID) of all questionnaires.
Results: We enrolled 90 COPD patients. Cronbach's alpha for both CAT and CCQ was high (0.86 and 0.89, respectively). Patients with severe COPD reported worse health status compared to milder subgroups. CAT and CCQ correlated significantly (rho =0.64, p<0.01) and both with the SGRQ (rho=0.65; CAT and rho= 0.77; CCQ, p<0.01). Both questionnaires exhibited a weak correlation with FEV1 (rho=-0.35;CAT and rho=-0.41; CCQ, p<0.01). Their reproducibility was high; CAT: ICC=0.94, total CCQ ICC=0.95, SGRQ ICC=0.97. The MCID calculated using the SEM method showed results similar to previous studies of 3.76 for the CAT, 0.41 for the CCQ and 4.84 for SGRQ. Patients suggested both CAT and CCQ as easier tools than SGRQ in terms of complexity and time considerations. 61.1% of patients preferred CCQ instead of CAT.
Conclusion: CAT and CCQ have similar psychometric properties with a slight advantage for CCQ based mainly on patients preference and are both valid and reliable questionnaires to assess health status in COPD patients.
Conflict of interest and funding: None
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235: Validation and implementation of the CARAT10 (Control of Allergic Rhinitis and Asthma Test) to assess asthma and rhinitis control in the Dutch population during the allergic season in The Netherlands

Tsiligianni I, Kocks JW, van der Molen T
Research question: To see the degree of acceptability (VAS-scale), levels of agreement of CARAT and ACQ5 questionnaire as well as to assess the stability and responsiveness of both questionnaires. To correlate CARAT10 and ACQ5 results with the pollen concentration counts during the allergic season.
Background: Asthma and rhinitis are very common diseases in the general population and also in The Netherlands. CARAT10 is a questionnaire validated to assess disease control of both asthma and rhinitis in the Portuguese population and it has been translated and culturally adapted for the Dutch population.
Possible methodology: Patients older than 18 years of age, with a medical diagnosis of asthma and/or allergic rhinitis will fill the questionnaires CARAT10, ACQ5 and VAS. Patients from allergology outpatients clinics well defined as having simultaneously asthma and allergic rhinitis will be used. Patients will be asked to complete the questionnaires on a random week 0 and 2, at the pollen season, and 4 months after the third visit,so outside the pollen season.
Questions to discuss: To what extent CARAT10 could be helpful in simultaneously assessing the control of both diseases? Is it possible to use CARAT10 to assess asthma replacing the ACQ5 questionnaire? Is there a good responsiveness to pollen season? To what extent CARAT10 and ACQ5 is correlated with different pollen count?
Conflict of interest and funding: None
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Friday 27 April 2012 (P4 COPD treatment)

123: Implementation an exercise program in COPD patients in primary care

Seoane J, Trillo C, Zarate MA.
Prevention Health Service ANTEA. Malaga (Spain).
Brief outline of context: Respiratory rehabilitation (RR) is recommended to COPD patients as a non-

pharmacological measure. Regardless of their stage, all COPD patients will benefit from rehabilitation programs that include physical training.
Brief outline of what change you planned to make: Implementation of a RR program based on physical exercise in Primary Care (PC).
Assessment of existing situation and analysis of its causes:: The RR programs are poorly developed in PC and they are usually offered almost exclusively at the hospital to patients with advanced stages of disease.
Strategy for change:: It is necessary to uptake COPD patients stage I, II or III in our PC Centres. Then, we would perform a Saint George Respiratory Questionnaire (SGRQ) and a 6-minute walk with heart rate control and degree of dyspnea (Borg scale) Test. Finally, we would implement a pulmonary rehabilitation program based on arms and legs exercises, followed by a different stages walk (distance) depending on the patient's previous training and also on the severity of their disease. Evaluation 3 months later.
Measurement of improvement: SGRQ and a 6-minute walk test 3 months later in which the improvement (from the initial assessment) would valued.
Effects of changes: Improvement in dyspnea, exercise tolerance and of quality of life progress.
Lessons learnt: With few resources we can be performed a RR program in PC.
Message for others: The benefits of RR can be similar or superior to those obtained with bronchodilators.
Conflict of interest and funding: None
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132: NVA237 once daily improves exercise endurance in patients with COPD from the first dose: the GLOW3 trial

Drollmann A, Singh D, Beeh K, Di Scala L, Smith R
Novartis Pharma AG, Basel, Switzerland
Aim: The fundamental characteristics of COPD are exertional dyspnoea and exercise limitation, which are associated with dynamic hyperinflation. We assessed the effects of NVA237 (glycopyrronium bromide), a once-daily long-acting muscarinic antagonist (LAMA), on exercise endurance in patients with moderate-to-severe COPD.
Method: Patients with COPD were randomised to a cross-over design of NVA237 50µg or placebo once daily for 3 weeks, with a 14-day washout. The primary endpoint was endurance time during a submaximal constant-load cycle ergometry test (SMETT) on Day 21 of treatment. Endurance time after first dose, dynamic hyperinflation (inspiratory capacity [IC] at isotime during exercise), morning trough FEV1 and plethysmographic lung volumes were also measured.
Results: 108 patients were randomised; mean age was 60.5 years, mean post-bronchodilator FEV1 was 57.1% predicted. 88.0% completed the study. Endurance time on Day 21 significantly increased by 21% with NVA237 vs placebo; the effect was significant from Day 1, with an increase of 10%. Both dynamic IC at exercise isotime and trough FEV1 showed significant and clinically relevant improvements from Day 1 that were maintained for the study duration. This was accompanied by inverse decreases in residual volume and functional residual capacity (Table). Overall, the safety profile of NVA237 was similar to that of placebo. Click here to see Table: NVA237 treatment effects versus placebo (opens in new window).
Conclusion: Once-daily NVA237 provided immediate and significant improvement in exercise endurance from Day 1. This was accompanied by sustained and significant improvements in IC at isotime, meaningful improvements in trough FEV1, and sustained reductions of lung hyperinflation. There was an improvement in endurance time during the study period, suggesting that mechanisms beyond improved lung function may play a part in exercise tolerance.
Conflict of interest and funding: The study was sponsored by Novartis Pharma AG, Basel, Switzerland. Dave Singh has received lectures fees, support for conference attendance, advisory board fees and research grants from a range of pharmaceutical companies including GSK, Chiesi Pharmaceuticals,

AstraZeneca, CIPLA, Novartis. Forest, MSD, Boehringer and Allmiral. Kai-Michael Beeh has received compensation for serving on advisory boards for Boehringer Ingelheim, Pfizer, Novartis, and other pharmaceutical companies. He has participated as speaker in scientific meetings or courses organized and financed by pharmaceutical companies (AstraZeneca, Boehringer, Novartis, Pfizer, Takeda) in 2006-2011. The institution where Kai-Michael Beeh is currently employed has received compensations for design and performance or participation in single or multi-centre clinical trials in 2006-2011 from multiple companies (Almirall, Altana, AstraZeneca, Boehringer Ingelheim, Cytos, Fujisawa, GSK, Medapharma, Merck Sharp & Dohme, Novartis, Pfizer, Revotar Biopharmaceuticals). AD, LDS, and RS are employees of Novartis.
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225: Patient as a co-protagonist in the sanitary education
Nualart-Feliu M, LLauger-Rosselló MªA, Dominguez-Olivera L, Gómez-Priego MªD, Izquierdo-Guerrero A
EAP Encants, ICS, Barcelona, Spain
Aim: The aging population and changing lifestyles are increasing incidence of chronic diseases. ICS began the expert-patient program with the intention that these will be more instructed, responsible and cope better their disease. COPD is a very common chronic disease that involves many annual costs
Method: The program is structured in 9 sessions of 1.30 hours per 12 week. The sessions are led by expert- patient previously trained and evaluated that can be supported by observers of the program. Before during and after the program (6 and 12 months) passed a test of knowledge about COPD in all participants
Results: -nº of participants:56 -level participation 98,3% -satisfaction 4,6/5 -Genus: 78% men 21% women -Age 20,83% (50-65 years) 33,33%(65-75) 41,66% (76-85) -Knowledge of COPD was 46,6% at the beginning and reached 72,5% in a year -At the end of the program 78% had a healthy lifestyle -The average number of visits has decreased:primary care from 4,3 to 1,8/year and casualty: from 0,5 to 0,1 in participants. -The number of admissions in hospitals decreased from 0,3 to 0,2
Conclusion: We have the results of the first 5 groups of 7 programs. -After a year the compliance program has reduced the number of primary care visits as well as the number of hospitalizations and exacerbations of COPD patients -The patient control better and more symptoms -Patients demonstrated increased knowledge of COPD desease -Patient-expert has lived a rich experience -The professionals can delegate health education and transfer responsabilities to the patient
Conflict of interest and funding: none
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179: The QVA149 IGNITE programme: dual bronchodilation as the future of COPD management
Banerji D, Chen H, Patalano F
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Aim: COPD symptoms are often inadequately controlled by bronchodilator monotherapy; GOLD guidelines recommend adding a second bronchodilator in such patients. Combining bronchodilators of different pharmacological classes improves lung function versus individual components, thereby improving symptoms, breathlessness, and QoL. Here we provide an overview of the QVA149 (fixed-dose combination of indacaterol and NVA237 [glycopyrronium bromide]) IGNITE programme and demonstrate the potential for the LABA/LAMA fixed-dose combination in COPD management.
Method: Review published LABA/LAMA combination data and provide an overview of the IGNITE programme.
Results: Several studies showed that lung function, breathlessness and QoL are improved with tiotropium once-daily plus formoterol/salmeterol twice-daily free combinations versus component monotherapies. The INTRUST study demonstrated that concurrent once-daily indacaterol and tiotropium use significantly improved bronchodilation (trough FEV1: 70–80mL improvement;

p<0.001) and lung deflation (trough inspiratory capacity: 100–130mL improvement; p<0.01) versus tiotropium monotherapy. QVA149, a novel once-daily dual bronchodilator is the most advanced fixed-dose LABA/LAMA combination in development. The efficacy and safety of QVA149 were demonstrated in two Phase II studies (NCT00570778 and NCT00558285), which showed QVA149 optimises bronchodilation (trough FEV1: 226mL improvement versus placebo; p<0.001), is well tolerated and demonstrates rapid and sustained bronchodilation. Phase III IGNITE trials, involving more than 5680 patients, will complete throughout 2012 (Table).
Conclusion: Dual bronchodilators, such as QVA149, offer superior bronchodilation versus increasing the dose of a single bronchodilator. By combining two long-acting bronchodilators in a single inhaler, once-daily QVA149 may simplify COPD management for patients requiring additional bronchodilation. As the QVA149 IGNITE studies report throughout 2012/2013, we will see whether optimising bronchodilation translates into better outcomes for COPD patients.
Conflict of interest and funding: DB, HC and FP are employees of Novartis.
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236: Rehabilitation effect on health care utilization in COPD patients
Jacobsen R, Frolich A, Rusch E, Andersen PK
University of Copenhagen, Copenhagen, Denmark
Aim: The Integrated Rehabilitation Programme for Chronic Conditions (SIKS) project implemented rehabilitation programmes for people with four chronic conditions in the local area of the municipality of Copenhagen. The objective of this study was to evaluate the impact of the SIKS project on health care utilization in COPD patients.
Method: Routinely collected datawas used. The following outcome variable were analyzed: COPD-hospitalizations, COPD-bed days, COPD ambulatory visits, COPD emergency room visits, GP visits, specialists visits, summary dispensed daily dose (DDD) of COPD specific. The data of the two following patient groups were analyzed: 1) intervention group: 118 COPD patients who participated the SIKS project; 2) control group: 236 COPD patients from the rest of the COPD patient population in the municipality matched with the intervention group by propensity score. The magnitude of the rehabilitation effect was assessed by calculating post-pre-rehabilitation differences of all the standardized outcomes in the intervention and the control groups. The significance the rehabilitation effect on health care utilization outcomes was assessed with difference-in-difference analyses on logarithmically transformed standardized outcomes
Results: COPD-specific hospitalizations and COPD-specific ambulatory visits increased statistically significantly in the control but not in the intervention group. COPD-specific bed days increased in both groups, but the changes were not statistically significant. COPD-specific emergency visits and specialist visits did not change statistically significantly in both groups, while GP visits and summary DDD of COPD-specific medicine increased statistically significantly in both groups. DID analyses showed that the rehabilitation effect was statistically significant with respect to the rehabilitation-related changes in COPD-specific hospitalizations and COPD-specific ambulatory visits.
Conclusion: Rehabilitaion dicreased health care utilization, which corresponds well to the literature and indicates that the rehabilitation slowes down COPD progression.
Conflict of interest and funding: None
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271: Preferences of patients with asthma or COPD towards active patient participation
Baan D, Heijmans M
NIVEL
Aim: To investigate preferences of asthma and COPD patients towards active patient participation in their own care. According to the chronic care model, patients should take this active role, but are patients willing to do so?
Method: A representative group of 750 patients with a medical diagnosis of asthma or COPD

completed a questionnaire assessing the level and content of current participation and preferences towards future participation.
Results: 47% of people with asthma and 53% of patients with COPD indicate that they never or only sometimes actively participate in their own treatment. From this group the majority doesn't even want to be more involved. A large group has no opinion about active participation (38% asthma, 48% COPD); only 20% of people with asthma and 14% of people with COPD want a more active role. Preferences, however, differ according to educational level and seriousness of the disease.
Main reason for patients with asthma to not become more active, is that they are satisfied with their current situation and judge their illness as not serious enough. The majority of COPD patients thinks their health care provider should be in charge for this active role. In addition, concerning their willingness to take a more active role, patients indicate that they don't want to take the lead, but want to be involved in a more passive way, e.g. by gaining more advice and information and to be kept informed on updates regarding their treatment.
Conclusion: Although active engagement is recommended within the chronic care model, a substantial part of people with asthma or COPD isn't actively involved nor wants to take an active role. It's important to further investigate the barriers for active involvement from the patient's perspective.
Conflict of interest and funding: This study was Funded by the Dutch Asthma Foundation. The authors declare that they have no competing interests.
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305: Cost effectiveness of an Ambulatory Oxygen (AO) Clinic
Cornish L, Dyer F, Webb L, Bott J
Respiratory Care Team, Chertsey, Surrey
Aim: Inappropriate oxygen prescription proves costly to the NHS. There is great need to review patients. We run an AO clinic to assess new patients and review oxygen usage. We assessed the cost effectiveness of this clinic.
Method: Data from a retrospective audit were analysed for all patients who attended clinic from April 2009 to November 2011. AO needs were assessed as per current guidance. Oxygen prescriptions for any mode (LTOT, SBOT, ambulatory) were reviewed to ensure the patient has the correct modality. HOOFs were amended to reflect correct oxygen usage or cancelled if no longer required. Costs of running the clinic were calculated along with actual oxygen savings to evaluate the effectiveness of this clinic (Table 1)
Results: Data were available for 251 patients (199 new, 52 reviews). Of the new, 35% (n=70) had a current oxygen prescription. Of these 13% (n=25) did not meet the criteria for the modality prescribed. Of those for review, 71% (n=37) had received AO when they had undergone pulmonary rehabilitation, the remainer (n=15) had been prescribed oxygen but had declined PR. 15 patients were non-concordant, HOOFs were amended to reflect actual oxygen usage. Table 1: Savings and Expenditure of AO clinic

Oxygen savings	
New patients	£29473
Reviews	£17037
Total	£43309
Clinic costs	£9942

Conclusion: This clinic is a cost effective way of reviewing patients AO and their other modality needs at the same time. We currently have 360 respiratory patients on some form of oxygen but do not have sufficient resources to review them. Moreover, if we were able to conduct these reviews in a more timely fashion, the period of inappropriate prescriptions could be shortened and the cost savings even greater

Conflict of interest and funding: None
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307: Illness uncertainty, worry, and depression in adults with chronic obstructive pulmonary disease

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Aim: To compare three subsets of adults living with chronic obstructive pulmonary disease(COPD)on illness uncertainty,worry,and depression.
Method: Three non-random subsets of adults with a physician's diagnosis of COPD completed the Michell Uncertainty Illness Scale- Community Version (MUIS), the Penn State Worry Questionnaire (PSWQ),and the Patient Health Questionnaire-Depression (PHQ9). Higher scores for each instrument mean higher levels in each of the states of illness uncertainty, worry, and depression respectively. Two of the subsets of adults were recruited from a pulmonary rehabilitation program (PR) and included: recent attendees (PRA), and graduates after at least 12 months (PRG). A third subset was recruited from Integrated Supportive Living for Seniors Health Program (ISSP).
Results: The sample included:n = 75 PRA,n = 74 PRG and n = 53 ISSP. Results of a MANOVA showed statistically significant differences between groups on the combined dependent variables, $F(6, 340) = 4.79$, $p = .00$, Pillai's Trace =.16, partial eta squared = .08. Separate ANOVA showed group differences on all variables, $p < .05$. Post-hoc analyses showed the ISSP and the PRG significantly differed on uncertainty and depression ($p < .01$). The PRA only differed from the ISSP and the PRG on depression ($p = .01$). Scores on the PHQ9 showed at least minor depression for 7% of PRA, 12% of PRG and 29% of ISSP. Scores exceeded the mid-range score of 69 on the MUIS for 26% of PRA, 17% of PRG and 40% of ISSP.
Conclusion: The findings have important implications in terms of informing patient education programs and psychological care.
Conflict of interest and funding: There are no conflicts of interest to declare. The project was funded by Alberta Lung Association
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310: Chronic Obstructive Pulmonary Disease taken seriously - Education in Primary Care and Control, Project Development - Maua, SP, Brazil.

Martins, S. M; Bressan, A. S. G.; Morais, C. A.; Marangoni, S. H.
Martins, S. M MD, director of the family health program in the city of Maua - SãoPaulo - Brazil. coordinator of the working group of respiratory problems in Brazilian society of family and community medicine

Brief outline of context: Maua has 22 Basic Health Units (BHU) distributed in 5 regions, with 46 teams of the Family Health Strategy (FHS) in place, consisting of Doctor, Dentist, Nurse, Nursing Assistant and Community Health Agent (CHA).The FHSs offer 45% population coverage.
Brief outline of what change you planned to make: To reverse the trend of increasing prevalence of COPD in the city, improve patient care, reduce hospitalizations and integrate primary care to other care.
Assessment of existing situation and analysis of its causes:: In progress
Strategy for change:: Discussion with and increasing of awareness of health managers; contact with the Coordinator of pharmaceutical care to organize the flow of medication dispensing; with the Tobacco Program Coordinator to organize the flow of routing, to improve COPD patients' access; to make it possible the decentralization of the program for BHUs, the multidisciplinary training for diagnosis and treatment, with expert meetings to discuss cases; implementation of the strategy of continuing education and to improve the access to spirometry.
Measurement of improvement: In progress
Effects of changes: In progress

Lessons learnt: COPD is a challenge for public health. The magnitude and seriousness of the problem contrasts with the fact that it is a preventable and treatable disease. The bond / longitudinality care that patients have with their FHS provide suitable conditions for disease management.
Message for others: we diposição for discussion.
Conflict of interest and funding: There is no
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346: Diagnosis of tuberculosis suspects at a district tuberculosis public health facility under dots
DR TAJ MUHAMMAD
Senior Medical Officer District TB Control Office Peshawar Pakistan.
Aim: The aim of the study was to screen the patient coming to the district health clinic for their chest symptoms, selecting TB suspects and advising sputum examination for their cough, and also showing the importance of the sputum examination, and after starting treatment the follow up examination at the end of 2nd / 3rd , 5th and 7th month.
Method: Patients visiting the health facility were advised for 3 sputum specimens, if positive started with anti TB medicine, if negative, chest X ray was advised and decision was made on personal history, family history, response to antibiotic. Extra pulmonary TB cases were received from the other specialities with their diagnoses and clinical evidences.
Results: [1st Sept – 31st Dec 2011] 1) New smear positive, (88) [male = 44, female = 44] 2) Previously treated, (12) [male = 7, female = 5] 3) Sputum smear negative, (39) [male = 15, female = 24] 4) New extra pulmonary, (130) [male = 72, female = 58] 5) Total All Cases, (269) [male = 138, female = 131]
Conclusion: DOTS method of Treatment cure rate is 90%. Diagnosis by Microscopy and prescription writing is most important. The priority is given to the Diagnosis and treatment of infectious i.e Sputum Smear Positive responsible for the spread of the diseases. The quarterly data as TB 07 shows the patients in a district with their sputum conversion and at the end of 2nd, 3rd month and treatment out come at the end of 12th- 15th month.
Conflict of interest and funding: self funding
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Friday 27 April 2012 (P5 Miscellany of primary care management)

124: Relationship between long-distance runners' performance and respiratory parameters
Trillo C, Seoane J, Zarate, MA.
Centro de Salud Puerta Blanca. Malaga (Spain).
Aim: To link healthy long-distance runners' output with the results obtained by exercise testing and through a forced spirometry.
Method: We studied 38 male runners from a Malaga athletic club: exercise testing on treadmill, forced spirometry, Cooper Test and time scoring while they participated in a half Marathon. We analyzed frequencies and linear regression by using, as dependent variables (performance), time spent in the half marathon and distance resulting from the Cooper Test. We analyzed as predictive variables the ones that were obtained by means of the effort test in the aerobic (AT) and anaerobic (RC) thresholds: maximum speed (MS), heart rate (HR), oxygen consumption and respiratory ratio (RER) and also spirometric variables: FEV1, FVC and FEV1/FVC.
Results: We found no significant relationship between spirometric parameters and performance. We found that the FEV1 (110%:78-140%; SE=14.78) and the FVC (109%:79-144; SE=14.59) of the population we studied was higher than the ones in general population. Finally, by a multivariate analysis, we obtained two equations that can predict the distance that runners could achieve in the Cooper Test and the time that they could spend in a half marathon: Half marathon time (minutes)=98.495–5.919 MS+0.2 HR_{max}+0.933 Height (R^2=0.866; SE=3.89; p<0.001); Cooper test

(meters)=974.560+122.431 MS-11.612 Weight+ 727.661 RER-RC (R^2=0.884; SE=110.028; p<0.001).
Conclusion: The number of healthy patients asking for some advice on how to develop a program of physical exercise is increasing in health primary assistance nowadays. There are few studies on respiratory parameters based on healthy runners. We did not find any relationship between performance and spirometric variables, although, we obtained two predictive models in runners.
Conflict of interest and funding: None
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148: Symptoms, function and health in patients with COPD and patients with chronic heart failure.
Theander K, Hasselgren M, Eckerblad J, Luhr K, Unosson M, Karlsson I.
Karlstad University, Karlstad, Sweden
Aim: To describe similarities and differences in symptoms, function and health between patients with COPD and patients with chronic heart failure (CHF) in primary health care (PHC).
Method: The study is cross sectional including patients with COPD (n=437) or CHF (n = 388), registered in the patient administrative systems of PHC. The patients received postal questionnaires; Memorial Symptom Assessment Scale, MRC dyspnea scale, Fatigue Impact Scale, and questions about psychological and physical health.
Results: The mean age was 70(10) years and 78(10) years for patients with COPD and CHF respectively (p=0.001). Patients with COPD (n=273) experienced more symptoms (11 (7.5)) than the CHF patients (n=211) (10 (7.6)) (p=0.035). The most prevalent symptoms for patients with COPD were; dyspnea, cough, lack of energy, dry mouth, difficulty sleeping, and, for patients with CHF; dyspnea, lack of energy, difficulty sleeping, numbness or tingling in hands and feet, and pain. Experience of dyspnea, cough, dry mouth, feeling irritable, worrying and problems with sexual interest or activity were more common in patients with COPD (p=0.05 - p=0.001) while experience of swelling arms or legs were more common among patients with CHF (p=0.001). There were no differences in functional limitations due to dyspnea or fatigue between the patient groups nor for health.
Conclusion: Patients with COPD and CHF seem to have a similar symptom burden. There were no differences in how the patients perceived their functioning according to their cardinal symptoms; dyspnea and fatigue and neither for health. An intervention for both groups of patients in order to optimize the management of symptoms and function is probably more relevant in PHC than focusing on separate diagnosis.
Conflict of interest and funding: Funding have been received from Uppsala-Örebro regional research council. Conflict of interest; none
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165: Rhinosinusitis in Primary Care: Improving management of rhinosinusitis and understanding research needs
Thomas M, Kaplan A, Price D.
University of Southampton, UK
Brief outline of context: Acute and chronic rhinosinusitis (with and without polyps) are common respiratory tract conditions that are frequently encountered by primary care clinicians. Rhinosinusitis is a common co-morbidity of other respiratory conditions such as asthma and allergic rhinitis. Despite the publication and dissemination of national (e.g. Canadian) and international (e.g. EP3OS) guidelines with explicit advice for primary care clinicians, understanding and confidence in management are often lacking in community practice. Significant evidence gaps remain for best practice in the community.
Brief outline of what change you planned to make: 1. Better dissemination of current guidelines relevant to primary care 2. Describe the evidence gaps and the research needs for primary care
Assessment of existing situation and analysis of its causes:: The IPCRG research committee has agreed that the current research needs in primary care document does not address rhinosinusitis,

and has formed a working party to assess the primary care research needs.
Strategy for change:: IPCRG research committee 'Rhinosinusitis' sub-committee in conjunction with the EP3OS guideline group and other experts will assess research needs and present preliminary suggestions at this meeting
Measurement of improvement: 1. Statement of research needs 2. Improved research 3. Improved care
Effects of changes: Focussed research, more appropriate management
Lessons learnt: IPCRG research needs document needs constant updating and expansion
Message for others: Improved research in rhinosinusitis is needed for best evidence-based practice
Conflict of interest and funding: No c/i
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172: House dust mite avoidance measures for perennial allergic rhinitis: an update of a Cochrane Review
Nurmatov U, Hurwitz B, van Schayck CP, Sheikh A
Allergy and Respiratory Research Group, The University of Edinburgh, Scotland, UK
Aim: To assess the benefits and harms of measures designed to reduce house dust mite exposure in the management of house dust mite sensitive allergic rhinitis.
Method: Systematic review of randomised controlled trials in which house dust mite control measures have been evaluated in comparison with placebo or other house dust mite avoidance measures, in patients with clinically proven allergic rhinitis.
Results: Nine trials involving 501 participants satisfied the inclusion criteria. These trials have investigated the effectiveness of bedroom environmental control programmes involving use of house dust mite impermeable bedding covers (n=4), acaricides (n=2), high-efficiency particulate air filters (n=2) and, using a factorial design, acaricide and house dust mite impermeable bedding covers in isolation and combination (n=1). Seven of the nine trials reported that, when compared with control, the interventions studied resulted in significant reductions in house dust mite load. Of the interventions studied to date, acaricides appear to be the most promising, although the findings from these studies need to be interpreted with care because of their methodological limitations. House dust mite impermeable bedding as an isolated intervention is unlikely to offer benefit.
Conclusion: Trials have tended to be small and of poor methodological quality, making it difficult to offer any definitive recommendations. Interventions that achieve substantial reductions in HDM load may offer some benefit in reducing rhinitis symptoms. Isolated use of HDM impermeable bedding is unlikely to prove effective.
Conflict of interest and funding: Aziz Sheikh has previously received a small travel grant from Allerayde, manufacturers and distributors of allergy control bedding. The other authors have no conflicts of interest. Funding: Maastricht University, The Netherlands.
Corresponding author: Dr Ulugbek Nurmatov

191: Behaviour Change in Ethnic Minority Groups – A systematic review of adapted interventions for smoking cessation
Wabnitz C, Liu JJ, Davidson E, Bhopal RS, White M, Johnson MRD, Netto G, Sheikh A
University of Edinburgh, UK
Aim: Some ethnic minority groups experience disproportionate levels of morbidity and mortality. Smoking is often the main preventable risk factor, and as some ethnic minority groups exhibit higher smoking rates, a health promotion priority is smoking cessation within these groups. We sought to identify smoking cessation interventions that have been adapted to meet the needs of the main UK ethnic minority groups (African-, Chinese- and South Asian-origin populations) and to assess their effectiveness in altering smoking behaviour.
Method: This formed part of a greater project involving a summary of high-level evidence, systematic review, qualitative interviews, and a realist synthesis. Two reviewers independently

extracted data from studies identified from eleven databases (Medline, Embase, Cochrane, Cinahl, Assia, PsycInfo, Biosis, IsiWos, Lilacs, Campbell, Sceh). Study quality was assessed, behaviour change techniques and adaptations were coded, and findings descriptively summarised and thematically synthesised.
Results: 25 studies were found, including 21 on African-Americans and four on Chinese-origin populations. Overall, the smoking cessation interventions had equivocal evidence of effectiveness, but appeared to increase acceptability. Only four studies directly compared a culturally adapted versus a standard health promotion intervention.
Conclusion: Possibilities to explain the lack of effectiveness of adapted interventions include that they offered too much information, that extra support was insufficient to attract or retain attention, or that heterogeneity among ethnic groups rendered them appropriate for certain subgroups only. Despite equivocal evidence of effectiveness, the adaptation of smoking cessation interventions for specific minority ethnic groups increases their acceptability, and they may thus be ethically preferable. The evolution of studies over time shows a shift to reflect this.
Conflict of interest and funding: Conflict of interest- None. MRC funded.
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202: The key challenges for practice nurses delivering respiratory care in the United Kingdom
Holmes S, Radwan A, Hall G, Scullion JE, McArthur R
The Park Medical Practice, Shepton Mallet, Somerset, UK
Aim: To establlish the key challenges for primary care nurses delivering respiratory care.
Method: 12 primary care COPD nurses had 60 minute in-depth interviews (six face to face, six by telephone). This was followed by four 90 minute focus groups of primary care COPD nurses (six nurses per group) in November 2011.
The nurses, all involved in treatment decisions for patients with COPD, were purposively sampled to include a range of prescribers and non prescribers from a range of different size practices across the UK.
Results: The research highlighted four main themes with sub-themes:
1. Time
- Consultations weren't long enough to treat the patient effectively
- Not enough time to see high volume of patients
- Felt like constantly playing catch-up
- Difficult to keep up to date with developments

2. Isolation
- Nurses reported a feeling of remoteness
- Felt often responsibility for patients lied solely with them
- Thought they were often more knowledgeable than GPs
- Received minimal support from 2° Care

3. Patients
- Lacked understanding of ‘seriousness’ of condition
- Non-Compliant
- Reluctant to help themselves
- Lacked conviction to take on board treatment and advice
- Didn’t accept condition
- Didn’t engage
- Disregarded smoking cessation

4. Resources
- Lack of space
- Old equipment e.g. spirometer
- Lacked materials to educate patients
- Lacked materials to educate themselves

Conclusion: Four important themes were identified representing key challenges to the UK practice nurse workforce that could be amenable to rectifying.
Conflict of interest and funding: Novartis funded the research project.
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207: Genotyping of M.tuberculosis from selected population of Kanpur city,north India
Krishna A, Katoch VM, Chaudhri S, Das R, Sharma P, Sampath A
GSVM medical college,Kanpur,India
Aim: Spoligotyping for detection and differentiation of M. tuberculosis from ZN stained sputum smears from selected population of Kanpur city and identify Rifampicin resistance by rpoB gene sequencing from same slides
Method: Two DMC cum DOTS centers' and nine DOTS Centers covering selected contiguous areas of Kanpur India were selected for study. A total of 139 sputum smear positive patients were randomly included in the study. Duration of study was from january 2009 –august 2010. Two Sputum smear were prepared per patients by Ziehl Neelson Method.DNA extraction directly from slides was done as described by van Embeden et al. Spoligotyping to detect 43 known spacers in the direct repeat (DR) locus was done as described by Kamarbeek et al. 350 base pair region of the rpo B gene was amplified using oligonucleotide primers.
Results: Spoligotyping was possible in only 98 out of 139 samples. Spoligotyping results were better in 3+/2+ slides. ST100/MANU 1 is the predominant spoligotype in the region. rpoB gene sequencing was attempted in all 139 samples but was possible in 14. Mutation was found in only 3 of the 14 samples.
Conclusion: ST100/MANU 1 is the predominant spoligotype in the region. one shared type is predominant in the region we can infer that the source of infection is within the region itself and is not outside the region. Using samples like sputum smears is time saving , simple and convenient compared with other culture based methods. There is strong possibility of retrospective studies also.
Conflict of interest and funding: none
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227: Do smoke-free spaces prevent people from taking up smoking and help people quit smoking? Spanish's opinion people after new band January 2011.
Barchilon V, Moran AM, Cobo MJ, Barros C
Spanish Society of Family and Community Medicine (SemFYC) Tobacco Use Research Group, Andalusian Respiratory Research Group, Spanish Primary Care Respiratory Group GRAP.
Aim: To know the opinion of Spanish people about free-smoke public premises (including night clubs, pubs/bars and restaurants) after the new 2011 Spanish free-smoke band, and to asses some changes in smoker's behavior.
Method: Transversal descriptive study.
Location: 60 Primary care settings in Spain Participants: 6999 (2935 in 2010 and 4064 in 2011) users of Spanish primary care health centers.
Self-administered questionnaire.
Results: Higher proportion of people thinks that smoke-free environment will improve the Spaniards health in a future (84.6% in 2010 and 88.8% in 2011, after the new band). This way of thinking has increased in smokers (69.7 in 2010 and 74% in 2011) much more than in no smokers (92,5 % in 2010 and 93,1 % in 2011).
After the 2011 band, the Spanish people increased these premises attendance (83.7% in 2010 and 88.2% in 2011), both smokers and no-smokers. No changes in ex-smokers.
Quit attempts have increased in the first months of the year after the band (36.8% vs. 31.4) and the perception of the doctors´ quitting advice has also increased (63.1% in 2010 vs. 74.6% in 2011).
Conclusion: After the smoke-free in public premises band, since January 2011, most of the Spanish population think that it will be better for their health; they have gone to these locals as always, or

even more. There is a smoking quitting attempts improvement during these months.
Conflict of interest and funding: None
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246: Study of immunization status of Children attending outpatient department.
Syed Hakeem Shah, Syed Hassan Shah
Consultant Paediatrician, Cantonment General Hospital Peshawar, Pakistan.
Aim: To assess the percentage of children upto 5 years of age having being given full or patial vaccination from the government immunization centres.
Method: 1000 children (upto 5 years age), attending outpatient pediatric department of the Cantonment hospital were assessed for there immunization status during the period of 6 months extending from july first till december 31st 2011. The parents were asked questions regarding the immunization of there children.
Results: 88.9% parents said that they had taken there children for the required immuniztion to the Government run clinics. Around 86% had been immunized against TB, 81% against DPT, HIB(pneumonia) and hepatitis B. The same number had been administered polio drops. Around 76% informed that there children had received polio drops for 10 times or more.
Conclusion: Hospital based study shows encouraging results about percentage of immunized children. This percentage is very high as compared to the community surveys which are very low. This shows that parents who come to the hospital are more aware about the importance of immunization.
Conflict of interest and funding: There was no outside funding for this study. All the printing of papers etc was done by myself.
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248: Smoking cessation in group sessions with 21 women in rural Sweden
Bergstrand K, Lisspers K
Kvarnsvedens Primary Health Care Centre and The Centre for Clinical Research Dalarna. Dep. of Public Health and Caring Sciences, Family Medicine and Clin. Epidem., Uppsala University, Sweden
Aim: This study was initiated in a small rural town in Sweden during 2011. Every fifth woman in the area smokes daily. The objective was to study the feasibility and outcomes of carrying out regular smoking cessation in group sessions.
Method: The group sessions followed a regular programme during 1 year, starting with 7 weekly meetings and thereafter follow-ups. It was modified to suit the large size of the group and in order to focus on a social perspective in addition to the individual viewpoint. All participants were municipal employees, mostly home care staff. All costs including working hours and nicotine replacement therapy were paid for by their employer. All of the participating women used nicotine replacement therapy or prescription drugs after an individual consultation with a pharmacist at the local pharmacy. The group where between 30 and 63 years and had between 11 and 60 pack years.
Results: The results showed that after 7 months 57 % of the women were non-smokers. The participants who still smoked had reduced their use of cigarettes by 48 %. The highest motivation gave 75 % non-smokers after 7 months. Low points, 1 - 4, in Fagerstrom score showed that 100 % where free from smoking. The 1-year follow-up is due in January 2012.
Conclusion: This small study indicates that there are clear benefits of working with this model of smoking cessation in group sessions. Of all participants 57% were non-smokers at 7 months. Among those who still were smoking, the cigarette use had been halved.
Conflict of interest and funding: None
Corresponding author: Dr Kristina Bergstrand **Email:** kristina.bergstrand@ltdalarna.se

328: Is daily handheld spirometry a useful predictor of exacerbation in patients with idiopathic pulmonary fibrosis?

Russell AM, Molyneaux PL, Adamali H, Fraser UH, Lukey PT, Renzoni EA , Wells AU, Maher TM
NIHR BRU, Royal Brompton Hospital, London
Aim: Idiopathic pulmonary fibrosis (IPF) is a devastating, progressive lung disease carrying a worse prognosis than many cancers. Characterised by a variable course; periods of evident disease stability are interspersed by sudden and often cryptogenic acute deteriorations. Acute exacerbations are a significant cause of morbidity and mortality presenting a challenge to primary care physicians. In lung transplant recipients, daily handheld spirometry has been shown to be an effective means of detecting acute rejection episodes. This exploratory study aims to determine the utility of daily handheld spirometry in IPF.
Method: Patients with IPF were recruited from new referrals to our unit. Baseline severity was assessed by FVC, DLCo, and 6 minute walk test. Patients were given a handheld spirometer (Carefusion, UK) and provided with instructions to self-administer spirometry. Patients recorded daily FEV1 and FVC values.
Results: 27 subjects have been recruited; 22 male, age 66.5 ±7.6 years (mean ± SD). Overall subjects have moderate to severe disease with FVC 73.4 ±19.8% predicted, DLco 39.6 ±13.3% predicted and 6 minute walk distance 325 ±124m. 24 subjects have completed at least 3 months of follow up. Mean handheld FVC correlates well with formal clinic spirometry(r2 0.934). Reproducibility of daily FVC has been good with mean variance 6.4% (range 1.7-15.5%).
Conclusion: This pilot data suggests that daily spirometry can be reliably and reproducibly performed by patients with IPF. It is hoped that by recording daily FVC a clearer insight in to the true natural history of IPF will be gained. Detecting acute exacerbations at an early stage could provide an opportunity for prompt and appropriate treatment.
Conflict of interest and funding: This research has been funded by a grant from the NIHR Royal Brompton biomedical research unit and by an unrestricted academic-industry grant from GSK.
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333: Can we use diabetes or hypertension to predict a diagnosis of obstructive sleep apnoea?
Goodwin, Daryl
Wand Medical Centre, Birmingham, UK
Aim: Sources suggest the prevalence of obstructive apnoea/hypopnoea (OSAH) syndrome is 2% in women and 4% in men. This is similar to the prevalence of diabetes in the UK. Our practice has a high proportion of patients with diabetes (7.4%) and a lot of data about their care. Diabetes and high body mass index (BMI) have been suggested as risk factors for OSAH. It is also known that drug resistant hypertension is linked to OSAH. Have we identified those patients with these morbidities and made a diagnosis of OSAH?
Method: Database search of all patients with diagnosis of OSAH, diabetes (type 1 and 2) and hypertension. Only patients with sleep study confirmed OSAH were included in final analysis. Contingency table analysis of comorbid diagnoses (two tailed).
Results: 480/6500 patients had diabetes mellitus 48/480 type 1. 840/6500 with diagnosis of hypertension. 42/6500 had diagnosis of OSAH, but only 29 confirmed by sleep study. Association between diabetes and OSAH was highly significant $p<0.0001$. None of the confirmed OSAH patients had type 1 diabetes making the link with type 2 significant at $p<0.0013$. LInks with hypertension were also highly significant at $p<0.0001$ with median antihypertensive 3 (range 0 to 5). Median BMI was 37.1 (range 20 to 51.5) 29/6500 = 0.45%
Conclusion: Underdiagnosis of OSAH overall. More likely to find OSAH in TYpe 2 diabetes and hypertensive patients with obesity. Uncontrolled hypertension or needing multiple agents to achieve control is another predictor. Targeting sleep studies in these populations is likely to be more efficient.
Conflict of interest and funding: Daryl Goodwin has received payment for speaking, advising or sponsorship for attending meetings from all the major pharmaceutical companies. ResMed, a supplier of non-invasive ventilation devices used in treating OSAH have indirectly paid for articles

and reviews.
Corresponding author: Dr Daryl Goodwin **Email:** darylgoodwin@doctors.org.uk

347: Assesment of ICT TB test done in 100 sputum smear positive patients
Dr Asif iqbal Safi,Safi Chest and TB clinic,peshawar, pakistan
Safi Chest and TB clinic,peshawar, pakistan.
Aim: To understand and asses the role and authenticity of ICT TB investigation for screening pulmonary TB in particularand extra pulmonary TB in general,because now adays private and public practitioners are using this diagnostic tool as qualitative measure to rule out TB.
Method: We took 100 smear positive patients aging between 16 to 60 years of age.All cases were recorded in year 2009,sputum microscopy was done via quality laboratory.ICT TB test was done for all sputum smear positive patients in same lab.
Results: 100 Smear positive cases were recorded in 2009,male 45 and female 55,.ICT TB test was done in all smear positive cases.Result were 70 individuals got ICT TB test negative and 30 Smear positives had ICT TB test negative results.
Conclusion: As sputum smear microscopy is investigation of choice for screening out pulmonary TB amongst individuals having fever more then 2 weeks and cough more then 3 weeks.On the other hand relying on simple investigation like ICT TB is not worth considering because of authenticity.2 times smear positive case will be much more likely TB then the same cases having ICT TB negative result.
Conflict of interest and funding: SELF FUNDING
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S17 Improving services, Saturday 28 April 2012 11.00-12.30 in Tinto

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224: Improving medicines management for COPD & Asthma patients
Blackaby C, Watson C, McLeod M, Porter A
NHS Improvement, Leicester
Brief outline of context: The practice participated in a national improvement programme to improve management of patients with COPD, focusing on the cost and quality of prescribing, and patient adherence.
Brief outline of what change you planned to make: To evaluate the cost- & clinical effectiveness of pharmacist-led reviews in improving medicines management
Assessment of existing situation and analysis of its causes:: Respiratory prescribing costs were high and there was scope to focus on medicines management as part of patients' annual review. Bringing in a clinical pharmacist provided additional skills to address this.
Strategy for change:: A highly qualified clinical pharmacist was employed one session a week to conduct annual reviews for respiratory patients. She used open questioning techniques to understand patients' attitude to medication and trainer devices to improve inhaler technique.
Measurement of improvement: Monthly prescribing costs and patterns, patient CAT score and admissions were monitored.
Effects of changes: Average monthly respiratory prescribing costs fell from £11k to £9.6k. CAT scores improved for 8 of the first 10 patients evaluated. No significant change in admissions was identified.
Lessons learnt: 30 minute appointments allow time to establish rapport with the patient and understand issues affecting adherence. Telephone calls in advance can reduce DNA rates.
Message for others: Pharmacist skills can provide a cost effective approach to medicines management and enhance the skill mix in the practice team.
Conflict of interest and funding: No conflict of interest.
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304: Implementing supportive self care models for COPD patients using service improvement methodology

Blackaby C, Porter A, Duncan P
NHS Improvement, Leicester, UK

Brief outline of context: Supportive self care is an important component of long term conditions management which may help patients cope with their condition and reduce the need for hospital admission.
Brief outline of what change you planned to make: Increasing COPD patients' ability to self care, by testing different approaches to implementation in two PCTs, a general practice and specialist team.
Assessment of existing situation and analysis of its causes:: There was no consistent approach to the form or delivery of self care plans or support. Small numbers of patients accounted for high proportions of admissions.
Strategy for change:: As part of a national improvement programme, sites analysed current pathways of care using service improvement methodology. Over 12 months, they tested different approaches to implementation including large scale roll out and targeted intervention.
Measurement of improvement: Measures included uptake of self care plans, use of urgent appointments, admission rates and patient satisfaction.
Effects of changes: Changes for individual sites included reducing the proportion of exacerbations resulting in admission from 8% to 5%, increase in uptake of plans from 10% to 82%, adoption of an agreed self management plan in 100% of targeted practices, 94% patients reporting a better understanding of their condition and 90% reduction in admissions for one targeted cohort of 34 patients.
Lessons learnt: Supportive self care requires time and rapport not just a comprehensive written plan. Focussed effort at practice or team level may be more effective than large scale roll out.
Message for others: Systematic investment of time and effort can allow existing resources to be used differently to deliver supportive self care more effectively.
Conflict of interest and funding: None
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299: Are disease management programs for COPD cost-saving?

Boland_MRS,Tsiachristas_A,Kruis_AL,Chavannes_NH,Rutten-van_Mölken_MPMH
EUR

Aim: Although disease management (DM) programs are generally believed to be cost-effective, the available evidence is inconclusive. The aim of this study is to review the impact of COPD-DM programs on healthcare costs and health outcomes. We also investigate whether this impact depends on disease-, intervention-, and study-characteristics.
Method: A systematic review was conducted to identify cost-effectiveness studies of COPD-DM programs based on predefined inclusion criteria. The data, results, and characteristics of the selected studies were grouped and included in a random-effects meta-analysis, where possible.
Results: Sixteen papers describing 11 studies were included. The meta-analysis showed that DM decreased the RR of hospitalizations (RR: 0.76, 95%CI: 0.63-0.93), and led to a statistically significant reduction of hospitalization costs of €1135 (95% CI: €679 to €1591) per person per year (PPPY). The average health care costs savings were estimated to be €2023 (95% CI: €1601 to €2445) PPPY. The costs of developing, implementing and managing the program were excluded from this estimate. The review showed that there is great variability in DM interventions, study characteristics, patient characteristics and quality of studies. There are indications that DM showed greater savings in hospital costs in studies with severe COPD patients (GOLD stage 3+), patients with a history of exacerbations, relative more smokers, non-RCT study design, a shorter duration of the intervention

(0-12 months), lower quality score and EU origin. Furthermore, hospital costs were greater when DM programs included 3 or more compared to 1-2 Chronic Care Model (CCM) components.
Conclusion: DM programs decreased the RR of hospitalization, hospitalization costs, and total healthcare costs (excluding program costs). However, more studies investigating the total costs of DM, heterogeneity of studies, changes in care delivery and healthcare behavior are needed to reach more certain conclusions.
Conflict of interest and funding: MRSB, AT,ALK, NHC and MRM: are part of the ongoing RECODE trial,which investigates the cost-effectiveness of integrated
care in primary care COPD patients in a cluster-randomised controlled trial in primary care. The Leiden University Medical Centre
received a grant by ZonMW (Dutch governmental agency) for the RECODE trial and the Erasmus University (iMTA), received and
additional financial support by Achmea (Dutch Healthcare Insurer) for the economic evaluation of the intervention in the RECODE
trial. In the future, our RCT will be included in the Cochrane Review.
MRM: is involved in cost-effectiveness studies of various COPD interventions, both pharmacological and non-pharmacological. She
was the project leader of the cost-effectiveness study of the INTERCOM trial, a trial which is included in this review.
NHC: As a senior researcher in the field of integrated disease management programs, involved in several initiatives promoting
education, developing software applications and providing ehealth solutions, that may be considered as a potential conflict of interest.
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137: A cluster randomised controlled trial of nurse and GP partnership for care of Chronic Obstructive Pulmonary Disease (COPD)
Zwar N, Hermiz O, Comino E, Middleton S, Marks G, Vagholkar S, Wilson S, Xuan W
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Aim: COPD is a major health problem managed in general practice. This cluster randomised controlled trial tested an intervention involving a nurse working in partnership with patients, GPs and other health professionals to provide guideline-based care.
Method: Mixed methods were used to investigate the complex intervention. 55 GPs from South West Sydney identified patients aged 40 to 80 years who had been prescribed respiratory medications and had a clinical diagnosis of COPD. 451 patients were recruited. In intervention practices nurses developed and helped implement evidence-based care plans for patients. The control group received usual care. Outcomes measures: St George's Respiratory Questionnaire, SF-12, smoking status, immunisation status; knowledge of COPD and health service use. Semi-structured interviews were conducted with intervention nurses and with GPs.
Results: Only 257 (57%) of patients had the diagnosis of COPD confirmed on spirometry. Patients from intervention practices had significantly better knowledge of COPD and more often attended pulmonary rehabilitation. There was a trend towards higher rates of pneumococcal vaccination. There were no significant differences in SGRQ, SF-12, smoking rates or self reported hospital attendances. The nurses involved thought that their input was valued by patients and GPs.
Conclusion: Improved outcomes for people with COPD is a major health issue and new models of care are needed. We found considerable disagreement between clinical diagnosis and spirometry. Patients in the intervention group received more care however this did not result in measurable differences in disease-related or overall quality of life at follow-up.
Conflict of interest and funding: No conflict of interest. Funding from National Health and Medical Research Council
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252: Primary care EarLy Intervention for Copd mANagement (PELICAN) study: progress on a cluster randomised trial

Zwar NA, Middleton S, Reddel HK, van Schayck CP, Crockett A, Dennis S, Marks G, Bunker J, Vagholkar S, Liaw T. Hasan I, Hermiz O.
School of Public Health and Community Medicine, University of New South Wales, Sydney, Australia

Aim: COPD is an important major health problem managed in general practice but diagnosis and intervention is often delayed. This cluster RCT is examining whether intervention by a practice nurse-GP partnership will improve outcomes for people with newly diagnosed COPD. In the intervention model there is active case finding in people aged 40 to 85 who are current or former smokers. These patients are invited to a case finding appointment with the practice nurse who has been trained in performing spirometry. Patients newly diagnosed with COPD are then offered early intervention or usual care depending on the practice randomisation.
Method: A cluster randomised trial is in progress in Sydney, Australia. Outcome measures include disease related quality of life, smoking status, immunisation, disease knowledge and inhaler technique.
Results: Forty one practices were recruited, four subsequently withdrew (two intervention and two usual care). Educational events have been held for practice nurses and GPs in the study according to group randomisation. To date letters of invitation have been sent to 8654 patients and 976 have attended a case finding appointment (11.3% of those invited). Regular feedback being provided to practice nurses on quality of spirometry. So far 170 new diagnoses of COPD have been made (17.4% of those attending).
Conclusion: The training of practice nurses in spirometry and early intervention has been feasible but support is needed in implementation. The rate of attendance at case finding appointments is lower than expected. The rate of new diagnoses is substantial.
Conflict of interest and funding: No conflicts. Funding is from the Australian National Health and Medical Research Council of Australia.
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320: Improving home oxygen services

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Brief outline of context: Home oxygen therapy is provided to about 85,000 people in England, costing approximately £110 million a year. Home oxygen service – assessment and review (HOS-AR) is variable and an estimated 24% to 43% of oxygen prescribed is not used or provides no clinical benefit.
Brief outline of what change you planned to make: Patient list review, specialist clinical assessment, therapy alteration or withdrawal, systematic and coordinated prescribing and improved multi-disciplinary care.
Assessment of existing situation and analysis of its causes:: Un-assessed patients were prescribed oxygen inappropriately, services lacked coordination, inaccurate patient registers, poor access to oxygen usage data, increasing costs and no clinical review.
Strategy for change:: A national improvement programme supporting 12 project teams of clinical and managerial staff undertaking service improvements through process mapping, examination of baseline oxygen usage data, measurement of demand and capacity and use of Plan-Do-Study-Act testing cycles in a range of hospital or community based settings from July 2010 to July 2011.
Measurement of improvement: Therapy usage and concordance data was analysed, focusing on flow rates, therapy modalities and over or under use.
Effects of changes: Improved data management and service coordination, strengthened clinical

governance and collective prescribing cost efficiencies totalling approximately £640,000 achieved by 9 out of the 12 project teams.
Lessons learnt: This work involved data review and management, clinical assessment and review and service integration for sustainability. Patient list cleansing, appropriate prescribing and rationalisation of therapy and equipment resulted in improved cost efficiency.
Message for others: Sustainable quality improvement requires collaboration, consistent communication and the effective use of data to focus improvement efforts.
Conflict of interest and funding: None
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S18 New technologies, Saturday 28 April 2012 11.00-12.30 in Moorfoot

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296: Patterns of symptoms and treatment in patients with COPD: data from the Telescot pilot study
Burton CD, Pinnock H, McKinstry B
University of Edinburgh, Edinburgh, UK
Aim: Telemonitoring of symptoms and physiological variables for patients with COPD is being widely deployed . Existing algorithms for interpreting data have been derived from paper-based studies in highly compliant patients. We aimed to describe patterns of symptoms and simultaneous physiological measures in relation to exacerbations among patients taking part in a pilot trial of telemonitoring for COPD
Method: Telemonitoring data were submitted daily by patients. Time series data were displayed graphically and two researchers categorised patients according to the pattern of their reported symptoms and use of antibiotic treatment for exacerbations. Physiological data were entered into multilevel logistic regression models to quantify changes in association with patients starting antibiotics.
Results: Data were obtained from 17 patients who recorded between 60 and 400 days of data. They were categorised into three groups: (a) rolling exacerbations – frequent antibiotics, symptoms rarely returning to normal levels; (b) intermittent exacerbations – intermittent antibiotics in association with temporary increase in symptoms; (c) over-ruled exacerbations – intermittent increases in symptoms without antibiotic treatment. In a multifactorial model, symptom score and heart rate were significantly increased on the first day of antibiotic treatment but FEV1 and SpO_2 were not.
Conclusion: The patients with COPD in our study commonly had complex patterns of symptoms rather than long periods of normality punctuated by discrete exacerbations. Physiological measures had little predictive value for these patients using conventional statistical models. Clinicians using telemonitoring for patients with COPD need effective and efficient algorithms which account for different patient types and behaviours.
Conflict of interest and funding: This pilot study was part of the Telescot programme and funded by the Chief Scientist Office, Intel / Tunstall and the Scottish Centre for Telehealth and Telecare.
The authors declare they have no conflict of interest.
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209: Perspectives of patients and healthcare professionals on the impact of telemedicine on hospital admissions for chronic obstructive pulmonary disease (COPD): a nested qualitative study.
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University of Edinburgh, UK.
Aim: Background: Early identification of exacerbations in COPD reduces hospital admission and may slow disease progression. There is increasing interest in telemedicine to support timely self-management of exacerbations. The TELESCOT randomised control trial based in Lothian, Scotland, is investigating the impact of a telemonitoring service for COPD. Aim: To explore the views of patients

and professionals participating in the trial about the impact of telemonitoring on hospital admissions.
Method: We undertook semi-structured interviews with patient and professional participants at different time points in the TELESCOT COPD trial. Transcribed, coded data were analysed thematically. Interpretation was supported by multidisciplinary discussion.
Results: 38 patients (47% male, mean age 67.5 years) and 32 professionals provided 70 interviews. Both patients and professionals considered that home telemonitoring reduced the risk of hospital admission. Patients used telemonitoring data to determine their state of health and to validate their decision to adjust treatment or contact healthcare professionals earlier in order to prevent admission. Professionals emphasised the role of telemonitoring in encouraging compliance and facilitating patient self management as a means of reducing admissions, though they also expressed concern that telemonitoring may increase patient dependence on services. The impact on the cost of services was a concern.
Conclusion: Enthusiasm for telemonitoring as a means of reducing admissions is tempered by concerns about increased demand on support services. However, patients are willing to embrace greater responsibility for their health when supported and permitted to do so by healthcare professionals.
Conflict of interest and funding: Conflict of interest: none. Funding: Chief Scientist Office, Scottish Government.
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182: User-survey of a software application for implementation of the latest NICE/BTS Guidelines for the Management of Asthma in Children
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Brief outline of context: BTS/SIGN asthma guideline is an evidence-based authoritative manual widely disseminated in the UK.
Brief outline of what change you planned to make: We aimed to assess the experience of healthcare professionals using of a software designed to implement the BTS/SIGN guideline.
Assessment of existing situation and analysis of its causes:: Previous clinical audits showed that the treatment of asthma in childhood is often suboptimal because of poor compliance with the guideline. Introduction and consistent use of a clinical guideline is a recognised strategy to improve the quality of management for both acute and chronic asthma.
Strategy for change:: A Microsoft windows software application with user-friendly interface was introduced into a paediatric department. It provides references to components of the BTS/SIGN asthma guideline including diagnosis, management, prognosis, patient education and self management (Figure 1).
Measurement of improvement: A semi-structured survey was conducted among 8 medical staff in a district hospital.
Effects of changes: 100% of the respondents described the software as “useful” or “vey useful”. 50% found it easy to use and 25% found it “very easy”. The respondents found the software useful as a quick reference guide (75%), for information on investigations and diagnostic algorithm (38%), checklist for effective management (50%) and appropriate follow-up planning (88%).
Lessons learnt: Doctors and other healthcare professionals actively engaged with the development of the software through focus groups and qualitative surveys.
Message for others: A software for the implementation of asthma guideline is welcomed by healthcare professionals and leads to a more consistent compliance with the guidelines.
Conflict of interest and funding: None
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334: Development of an innovative data warehouse to audit, monitor and improve primary care

respiratory services

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Brief outline of context: A respiratory improvement initiative highlighted a need for a real time tool to benchmark, monitor and drive up the quality of COPD services at practice level.
Brief outline of what change you planned to make: To develop a tool to understand the standard of COPD services and the variation between practices. The output would be used to improve quality and decision making.
Assessment of existing situation and analysis of its causes:: Initial analysis highlighted extreme variation between practices and that national guidance was not consistently practised. No real time, easily accessible practice data available for decision making or monitoring quality.
Strategy for change:: A multidisciplinary team worked closely with stakeholders to develop a tool which met their needs and requirements. Full testing of the system was carried out before full implementation.
Measurement of improvement: This tool will be used to audit the impact of a number of different strands of the integrated respiratory service, and provide real time feedback to GP practices about admissions and readmissions.
Effects of changes: The tool enables clinicians, commissioners and public health to access and mergethe data from the local acute services and general practices to provide a whole system picture of the care received by respiratory patients.
Lessons learnt: The reports are dependent on the quality of coded data. Data coding issues can report unexpected results, which require local investigation.
Message for others: Timely data is crucial for understanding the quality of care and the impact of service redesign. The tool is available for other healthcare providers.
Conflict of interest and funding: Nothing to declare

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323: Pulse oximetry in patients over 40 years with asthma/COPD in general practice.

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University of Oslo, Norway

Aim: The study aimed to evaluate possible predictors of decreased pulse oximetry in in general practice, in patients with COPD and/or asthma.
Method: Among 18931 adults aged 40 years or more, listed at 7 general practice offices, 1784 were identified in the medical records with a diagnosis of asthma or COPD within the last five years. Of these, a random sample of 1111 patients was asked to take part in the project. 380 patients took part in the baseline examination.The examinations included pulse oximetry, spirometry, a COPD questionnaire (CCQ) , weight and height. An oxygen saturation(SpO2) <96% was considered as abnormal value, and <93 as severely decreased value. Predictors of SpO2 <96% and SpO2 <93%% with a staistical significance of p<0,1were entered a binary logistic regression.
Results: The prevalence of SpO2 <96% was 22,5% and SpO2 <93% 3,2%. The frequency of SpO2 <96% and SpO2 <93% increased by decreasing levels of FEV1 % predicted from 7,4% and 0%,respectively, when FEV1% predicted ≥90, to 53,6% and 28,6% when FEV1% predicted <40. The frequencies increased with increasing CCQ score, from 9,7% and 1,1%, respectively, when CCQ<1, to 66,7% and 22,2% when CCQ≥4.. The strongest predictors of SpO2 <96% in the binary logistic regression were FEV1 <50% predicted with odds ratio (OR) = 4,6 (P<0.001), CCQ score ≥3 with OR=4,5(P<0.001), Body mass index (kg/m²) < 20 with OR=1,6(P<0.001), and a GP's diagnosis of COPD which was not combined with a diagnosis of asthma with OR=1,2(P=0.001).
Conclusion: Low pulse oximetry values were strongly associated with known indicators of severe obstructive lung disease. Easy to use and acceptable to patients, pulse oximetry may be useful in the monitoring of patients with obstructive lung diseases.
Conflict of interest and funding: None

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147: Development of a management decision support system for allergy in primary care
Brakel TM, Flokstra-de Blok BMJ, van der Molen T, Dubois AEJ
Research question: What should be the content of an efficient management allergy decision support system in primary care?
Background: IgE test scores are often unrelated to symptoms, and therefore difficult to interpret. Many GPs have difficulty in managing allergy in their patients. Guidelines are difficult to implement at the point of care. A management decision support system might be helpful.
Possible methodology: When an IgE test is ordered in primary care, the patient is asked to complete a questionnaire which has been developed to obtain key information about the patient's medical history. In the development phase, allergy specialists will evaluate this information together with IgE test results and formulate a case-specific diagnosis with recommendations for management. The content of these recommendations will be validated in relation to available evidence and/or expert opinion in different ways, including comparisons with real patient encounters and ascertainment of inter-observer variability. In the subsequent phase, GPs will be recruited and randomly divided into a group using the system and a group giving usual care. The efficiency and learning effect of the use of the system will be studied. We hypothesize that GPs will identify, manage and refer allergic patients in a more appropriate way and that specific IgE request will become more efficient. Finally, the system will be maximally automated.
Questions to discuss: What form should this system have and how should it function to be an effective management advisory system in primary care? How may GPs be convinced of the value of the project?
Conflict of interest and funding: The development of the allergy support system is funded by an unrestricted grant from Phadia.
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S19 Allergy, Saturday 28 April 2012 11.00-12.30 in Kilsyth

140: Adolescent hay fever and the impact of healthcare professional training: cluster randomised controlled trial in primary care.
Hammersley VS, Elton R, Walker S, Sheikh A
University of Edinburgh, Edinburgh, UK
Aim: We sought to establish the effectiveness of standardised allergy training for primary healthcare professionals in increasing disease-specific quality of life of adolescents with hayfever.
Method: This cluster randomised controlled trial took place during the summers of 2009-10 in UK general practices. General practice staff were centrally randomised to an intensive one-day training workshop on the evidence-based management of hay fever or distribution of guidelines (control). The primary outcome measure was the change in the validated Rhinoconjunctivitis Quality of Life Questionnaire with Standardised Activities (RQLQ(S)) score between baseline and 6-8 weeks post-intervention (minimal clinically important difference=0•5). Secondary outcomes of interest were whether attending the workshop enhanced competence and confidence of practitioners, changed clinical practice and/or prescribing and reduced adolescents' rhinitis symptoms. We undertook a complete case analysis using multi-level modelling.
Results: Thirty-eight general practices were randomised (20 in the intervention arm) and 246 patients (50•2% male, mean age 15 years) were included in the primary outcome analysis. Healthcare professionals' self-assessed competence and confidence significantly improved, but this did not translate into clinically or statistically significant improvements in RQLQ(S): -0•15, 95%CI -0•52 to +0•21. There were no differences in consultation frequency, treatments issued for hay fever or symptom scores.

Conclusion: Although associated with professionals' increased self-assessed competence and confidence, this intensive hay fever training workshop did not translate into improvements in disease-specific quality of life or reduction in rhinitis symptoms. Health professional educational interventions need to be evaluated using robust designs.
Conflict of interest and funding: Funding: Chief Scientist's Office of the Scottish Government. There were no conflicts of interest.
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171: An investigation of nutrients and foods for the primary prevention of asthma and allergic disorders: a systematic review and meta-analysis of epidemiological and experimental studies
Nurmatov U, Devereux G, Sheikh A
Allergy and Respiratory Research Group, The University of Edinburgh, Scotland, UK
Aim: To investigate the evidence that nutrient and food intake modifies the risk of children developing allergy.
Method: Systematic review and meta-analysis of epidemiological and experimental studies, searching 11 international databases and contacting an international panel of experts in this field. Studies were critically appraised using the Critical Appraisal Skills Programme (CASP) criteria. Meta-analyses were undertaken using the program Comprehensive Meta Analysis Version 2.
Results: We identified 62 eligible reports. There were no randomized controlled trials. Studies used cohort (n=21), case-control (n=15), or cross-sectional (n=26) designs. All studies were judged to be at moderate to substantial risk of bias. Meta-analysis revealed that serum vitamin A was lower in children with asthma compared with controls (odds ratio [OR], 0.25; 95% CI, 0.10-0.40). Meta-analyses also showed that high maternal dietary vitamin D and E intakes during pregnancy were protective for the development of wheezing outcomes (OR, 0.56, 95% CI, 0.42-0.73; and OR, 0.68, 95% CI, 0.52-0.88, respectively). Adherence to a Mediterranean diet was protective for persistent wheeze (OR, 0.22; 95% CI, 0.08-0.58) and atopy (OR, 0.55; 95% CI, 0.31-0.97). Seventeen of 22 fruit and vegetable studies reported beneficial associations with asthma and allergic outcomes. Results were not supportive for other allergic outcomes for these vitamins or nutrients, or for any outcomes in relation to vitamin C and selenium.
Conclusion: The available epidemiologic evidence is weak but nonetheless supportive with respect to vitamins A, D, and E; zinc; fruits and vegetables; and a Mediterranean diet for the prevention of asthma. Experimental studies of these exposures are now warranted.
Conflict of interest and funding: No conflict of interest. A project grant was awarded by the CSO the Scottish Government Health Department CZG/2/396
Corresponding author: Dr Ulugbek Nurmatov

282: Sublingual allergen extract immunotherapy in a rush pattern to reach the maintenance faster
* Naren. Pandey, * * Bibhore Sengupta, Saurabh Kole, S. P. Singh, Apoorva Krishna, Shankar Saha, S. Gupta Bhattacharya
** M.P.BIRLA MEDICAL RESEARCH CENTRE, * * Asst.Prof.(Chest& TB) K.P.C.MEDICAL COLLEGE*
Aim: Slit(sub lingual immunotherapy Rush immunotherapy was tried on some patients to evolve some faster and affordable immunotherapy modality to make the patient achieve the maintenance plateau within a very short time. Conventional method of immunotherapy is administered with long durations; rush immunotherapy is super fast methodology in attaining the maintenance/boosting module, But in this method, it was found that within 15-20 days the relief of the immunotherapy was reached.
Method: 186 patients out of which 48 with urticaria allergy and 138 with allergic Rhinitis Bronchial Asthma were selected. The therapy consists of administration of four vials of allergen extracts, The patients had been given pre-medication. Blood examination and IgG IgE level estimation were done before after 8 weeks
Results: It was observed in the patients symptom score showed marked improvement, some of the

patients showed local skin reactions which subsided without drugs and no systemic reaction was noted. There was substantial decrease in IgE increased IgG level, significant marked satisfactory relief was noted and the procedure was graded as a very fast affordable SAFE immunotherapy.
Conclusion: Hence it was noticed that , immunotherapy, in a rush pattern revealed very good quality of life and marked reduction was observed in drug administration and also the symptomatic relief was documented, and it can be graded as the most affordable, simple, methodology for control of allergic disorders like Asthma, Rhinitis, Urticaria & other allergic disorders,and the only immunomodulatory modality
Conflict of interest and funding: the project was not funded
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173: Oral and sublingual immunotherapy for food allergy: a systematic review and meta-analysis
Nurmatov U, Devereux G, Sheikh A
Allergy and Respiratory Research Group, The University of Edinburgh, Scotland, UK
Aim: To undertake a systematic review to assess the efficacy, mechanisms, safety and cost-effectiveness of orally administered (i.e. oral and sublingual) immunotherapy for food allergy.
Method: Systematic review of intervention studies, searching 11 international databases and contacting an international panel of experts. Studies were critically appraised using the Cochrane approach and meta-analysed.
Results: We identified 721 potentially relevant papers, from which we selected 16 reports of 15 eligible trials (12 randomized controlled trials and three controlled clinical trials) studying a total of 627 patients. Twelve trials evaluated oral and three investigated sublingual immunotherapy. Meta-analysis revealed a lower risk of persisting food allergy in patients receiving immunotherapy (RR=0.22; 95% CI, 0.11–0.45). Pooling of safety data revealed an increased average risk of minor oropharyngeal/gastro-intestinal adverse reactions in those receiving immunotherapy (RR=1.25; 95% CI, 1.01–1.56); there was a non-significant increased risk of systemic adverse reactions in those receiving immunotherapy (RR=1.08; 95% CI, 0.97–1.19). Meta-analysis of immunological data demonstrated that food allergen skin prick test responses significantly decreased in experimental groups compared to controls (mean difference -2.96mm; 95% CI, -4.48 – -1.45), whilst specific-IgG4 increased by an average of 19.9 µg/ml (95% CI, 17.1–22.6). Sensitivity analyses excluding studies judged to be at highest risk of bias and subgroup analysis of specific food allergens and treatment approach generated broadly comparable estimates of effectiveness and immunological changes.
Conclusion: Orally-administered immunotherapy substantially reduces the risk of persisting food allergy whilst on treatment, this effect being mediated by immunological mechanisms. The longer-term effectiveness and cost-effectiveness of this potentially curative treatment approach now needs to be established.
Conflict of interest and funding: No conflict of interest. A project was awarded by the CSO the Scottish Government Health Department CZG/2/493
Corresponding author: Dr Ulugbek Nurmatov

303: Aerobiological and proteonomics study of coconut pollen allergy
Pandey Naren,Saurabh Kole, Bibhore Sengupta,Bodhisattwa Saha , Apoorva Krishna, Shankar Saha,S.P.Singh M.P.BIRLA MEDICAL RESEARCH CENTRE; K.P.C.Medical College & Hospital
M.P.Birla Medical Research Centre
Aim: To prove that Coconut pollen is an important allergen causing Type I hypersensitivity in a significant proportion of human beings living in around Kolkata and to identifythe major allergenic protien through protein through proteomics and other techniques.Type I hypersensitivity is responsible for allergic Rhinitis and Asthma.
Method: Two year aerobiological study was conducted using Burkard volumetric sampler.Allergenicity of Coccus nucifera pollen was tested through skin prick test , LFT and ELISA. Protiens from pollen grains were obtained by initially defatting and then extracted with sodium

phosphate buffer. SDS page ,Western Blotting two dimentional Electrophoresis and immunoblotting were done.
Results: Maximum concentration of pollen was found in the month of august .The total protien from pollen was seperated on a SDS PAGE gel showed 2l prominent bands by coomassie Blue staining.Western blot with patient specific sera gave 3 bands out of which a major band was obtained at 60 Kd.This result was obtained in morethan 65% of the patients. 2D gel electrophoresis of the crude protien sample was performed which showed 120 protien spots in the PI range of 3-10 and molecular weight 14Kd-97Kd.Immunoblotting the 2D gel with pooled patient specific sera showed 20 spots thus implying IgE reactivity.
Conclusion: Thus coconut pollen grains are very common in the air and are an important airborne allergen.and causes typeI hypersensitivity and is also responsible for allergic Rhinitis and Asthma.
Conflict of interest and funding: Division of Plant Biology (Main Campus) Bose Institute of Sciences.
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S20 Spirometry, Saturday 28 April 2012 11.00-12.30 in Harris

196: Microbiological contamination of spirometers in general practices.
Hancock KL, Schermer TR, Holton C, Crockett AJ
The University of Adelaide, Australia
Aim: This exploratory study assessed the cleaning procedures and microbiological contamination of spirometers taken from a sample of South Australian general practices.
Method: 16 spirometers were swabbed in their "ready to use" state. Swabs were taken from the turbine, mesh, mouthpiece tube or flow head depending on the type of spirometer, and shipped in transport medium to the laboratory and processed using standard methods. Details of the spirometers, their use and cleaning routines were obtained via questionnaire.
Results: Eight of the practices (50%) reported having a protocol in place for spirometer cleaning. Three practices used spirometers that had disposable flow heads. The remaining thirteen practices used disposable cardboard mouth pieces with seven using one way valved mouthpieces. Three spirometers carried potentially pathogenic micro-organisms. Pseudomonas spp. were cultured from two spirometers and a pseudomonas like microorganism (Alcaligenes sp.) from another. Two were turbine spirometers and one a pneumotachograph. All three had been in use for less than three years, all three practices had written cleaning protocols in place and all stated that they were using a recommended detergent to clean the spirometers. All three practices reported a lower cleaning frequency than recommended by the manufactuer.
Conclusion: The potential for spirometers to be reservoirs of micro-organisms stresses the need for stricter attention to hygiene measures. Until further research clarifies the risk for general practice patients it is strongly recommended that general practices implement and adhere to a strict protocol for spirometry cleaning following the manufacturers' guidelines, consider use of appropriate barrier filters or use a spirometer with disposable flow heads.
Conflict of interest and funding: nil
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120: Validity of the spirometric technique. Experience from primary care
Hidalgo A, Quintano JÁ, Prieto JI, Pavón C, Farouk M, Fernández M
UGC Lucena I, Córdoba, Spain
Aim: The use of spirometry in Primary Healthcare (PHC) is essential for proper screening of COPD and improving its diagnosis.
However, it is known that this technique is rarely realized at PHC.
Method: Study Design:
Screening (active case finding), multicenter, multidisciplinary study.

Study Population:
Patients attending 5 PHC Centres of South Cordoba Health District, Andalusian Health Service.
Sample:
The screening applied randomly the questionnaire GOLD "Could be COPD" on patients over 40 years, smokers with respiratory symptoms who attended over 6 months our PHC Centres for any reason.
Variables:
Questionnaire GOLD "Could be COPD", which considers possible COPD when the patient answers YES to 3 or more of the 5 questions. Patients with positive GOLD were invited to realize Forced Spirometry.
Results: According to the results of the Questionnaire GOLD "Could be COPD", of 463 participants only 139 (30%) were identified as possible COPD. Of the 139 possible COPD patients, spirometry was realized on 126 patients. Spirometry technique was not valid in 32 (52.2%) cases, with equal gender distribution. The validity of Spirometry technique was similar between obstructive and non-obstructive or normal patterns (Mean 0.27 and 0.28 respectively). Invalid techniques were associated with the technician (Nurse) who realized it. ANOVA test showed statistical significant difference ($p< 0.01$) between technicians (Nurses). Significant linear relationship was found between the validity of the spirometry technique and the technician (Nurse) who realized it.
Conclusion: Poor practice of the spirometry technique was observed. Of 5 technicians (Nurse) only 1 (20%) realized invalid spirometries in 69% of the cases. Training is needed for technicians responsible for the implementation of spirometry at PHC.
Conflict of interest and funding: No
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169: Lung age: an update
Newbury W, Lorimer M, Newbury J, Adams R, Crockett A
University of Adelaide, Adelaide, Australia
Aim: To determine if the Morris lung age equations from data gathered in the 1960s are relevant for current-day populations.
Method: Study 1: Paired t-tests compared newly-developed Australian Lung Age (LA) equations (Newbury) with Morris LA equations using an independent workplace dataset (males only) Study 2: The 2 equations from Study 1(Newbury, Morris) and a further 4 developed from published predictive equations for FEV_1 from the USA, England, Europe and Australia were compared by regression analysis using a large independent dataset of randomly-selected community dwelling adults. (North West Adelaide Health Study (NWAHS)). Study 3: Further comparisons of 3 lung age equations from Study 2 (Morris, NHANES III and Newbury) with FEV_1/FVC lung age equations ('Harbor lung age equations'), used the same independent dataset.
Results: Study 1: Differences between mean Morris LA and mean Newbury LA were approximately 20 years, with Morris under predicting LA in both healthy never smokers and current smokers compared with actual age. Study 2: Regression analysis confirmed significant differences between the 2 oldest and the 4 newest equations. Study 3: Preliminary analysis shows the FEV_1/FVC LA equation results in greater variance in all subgroups (smokers/healthy never smokers) than the equations based on FEV_1 alone.
Conclusion: LA estimates differ with each equation used, apparently due to date of raw data collection, reflecting both cohort and period effects. International guidelines recommend updating predictive equations every 10 years. Our results support the use of recently-developed equations that are relevant to the population being studied. We hypothesise that more recently developed LA equations might have greater clinical utility for smoking cessation quit attempts.
Conflict of interest and funding: No conflict of interest. Australian government PhD scholarship and travel grant.
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116: Accuracy and precision of desktop spirometers in general practices.

Schermer TR, Verweij EH, Cretier R, Pellegrino A, Crockett AJ, Poels PJ
Department of Primary & Community Care, Radboud University Nijmegen Medical Centre, Nijmegen, the Netherlands

Aim: To establish accuracy and precision of desktop spirometers that are routinely used in general practices.
Method: We evaluated a random sample of 50 spirometers from Dutch general practices by testing them on a certified waveform generator using eight standard American Thoracic Society waveforms to determine accuracy and precision. Details about brand and type of spirometer, year of purchase, frequency of use, cleaning and calibration were inquired with a study-specific questionnaire.
Results: 39 devices (80%) were turbine spirometers, 8 (16%) were pneumotachographs, and 1 (2%) was a volume displacement spirometer. Mean age of the spirometers was 4.3 (SD 3.7) years. Average deviation from the waveform generator reference values (accuracy) was 25 (95%CI 12, 39) mL for FEV1 and 27 (10, 45) mL for FVC, but some devices showed substantial deviations. FEV1 deviations were larger for pneumotachographs than for turbine spirometers ($p<0.0031$), but FVC deviations did not differ between the two types of spirometers. In the subset of turbine spirometers no association between age and device performance was observed.
Conclusion: On average, desktop spirometers in general practices slightly overestimated FEV1 and FVC values, but some devices showed substantial deviations. General practices should pay more attention to calibration of their spirometer.
Conflict of interest and funding: Conflict of interest: none. Funding: Radboud University Nijmegen Medical Centre and the Netherlands Organisation for Health Research and Development.
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240: Microspirometry to preselect candidates for full spirometry when diagnosing COPD in general practice

Schermer TR, van den Bemt L, Denis J, Grootens-Stekelenburg J, Poels PJ
Radboud University Nijmegen Medical Centre, Department of Primary and Community Care

Aim: Diagnosing COPD requires post-bronchodilator (BD) spirometry. Point-of-care microspirometry testing by the GP during routine consultations may be an efficient way to preselect candidates for full diagnostic spirometry. Aim of this study was to determine the negative predictive value (NPV) of microspirometry relative to a full diagnostic spirometry test in subjects in whom GPs suspect COPD.
Method: Cross-sectional study in which the order of a microspirometry test (by Piko-6, Ferraris) and a diagnostic spirometry test was randomised. Study subjects were (ex-)smokers aged ≥50 years referred for spirometry by their GP because of respiratory symptoms that suggest underlying COPD. Positive microspirometry was defined as pre-BD FEV1/FEV6<0.73, positive diagnostic spirometry as post-BD FEV1/FVC<0.70. Alternatively, positive diagnostic spirometry was defined as post-BD FEV1/FVC < lower limit of normal (LLN). Subject recruitment and all spirometry tests took place in a primary care diagnostic centre.
Results: Preliminary analysis of the first 87 (of the required 102) subjects showed that the prevalence of airflow obstruction based on full diagnostic spirometry was 47.0% (for post-BD FEV1/FVC<0.70) and 33.3% (for FEV1/FVC<LLN), respectively. The majority of subjects were males (59%), 45% current smokers, mean age was 62.2 [SD 6.5] years, mean post-BD FEV1 % predicted was 82.1 [SD 17]. NPV was 95.3% (95% confidence interval: 90.9-99.7) for both definitions of positive diagnostic spirometry.
Conclusion: Preliminary analyses suggest that microspirometry has a high negative predictive value for the presence of airflow obstruction as established by full diagnostic spirometry. Use of microspirometry by GPs may be a valid and efficient approach to preselect candidates for further spirometry testing when diagnosing COPD in general practice.
Conflict of interest and funding: No conflicts of interest, funding by Boehringer Ingelheim, the

Netherlands
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242: Impact of spirometry training on test quality in Dutch general practices. Preliminary results
Schermer T, Rauws J, Grootens J, Pepels F, Denis J, Smeele I
Radboud University Nijmegen Medical Centre, Department of Primary and Community Care
Aim: Quality of spirometry in general practices is not always sufficient. In 2009 a spirometry course was developed and has now been implemented on a nationwide scale by the COPD & Asthma General Practice Advisory Group to improve spirometry test execution and interpretation in general practice. In this study we evaluate the impact of this so called 'CASPIR spirometry course' on the quality of spirometry tests.
Method: Before-after comparison of routine spirometry tests taken from the databases of two groups of practices: 15 that participated in the CASPIR course (5 modules for GPs and practice nurses, including e-learning and plenary teaching by a GP, pulmonologist and lung function (LF) technician; practise-teaching in a LF laboratory; assembling and assessment of a spirometry portfolio), and 15 that developed their own local spirometry quality improvement program (teaching of practice nurses by a LF technician; performing supervised spirometry tests in a LF laboratory). Random samples of 20 tests are taken before, and 20 tests after the CASPIR course or spirometry improvement program has been completed. Using ERS/ATS quality criteria, all tests are assessed by three LF technicians who are blinded for the origin and timing of tests.
Results: Preliminary analysis of tests from 6 practices (total of 207 tests) and after assessment by two LF technicians showed that the proportion of adequate tests increased from 76.5% to 82.2% in three 'CASPIR course' practices and from 55.6% to 72.1% in three 'local improvement program' practices.
Conclusion: Both approaches may lead to improved spirometry test quality in general practices. Final results of the study will be available in April 2012.
Conflict of interest and funding: No conflicts of interest, funding by the Dutch COPD & Asthma General Practice Advisory Group (CAHAG)
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335: Does owning a spirometer improve COPD care?
Barnes KM, Mountford J, Morris S, Meaker R, Koczan P, Parker M, Gungor G, Hudson R, Roberts CM
NECLES HIEC, Queen Mary University London
Aim: This study explored the association between Practice ownership of a spirometer and care quality indicators of validated COPD diagnosis, admissions and prevalence.
Method: Airways Nurses were deployed to 42 Practices in Waltham Forest to work with Practice staff. Availability of spirometers, numbers of registered COPD cases with diagnosis confirmed by spirometry, prevalence rates compared to Eastern Region Public Health Observatory estimates and 12 month unscheduled COPD admission rates were all recorded. Statistical analyses were performed to explore correlations between spirometer ownership and quality care measures.
Results: 36% of Practices (n= 15) had desktop spirometers, 38% (n=16) had handhelds, and 26% (n= 11) no spirometer. 19 percent of registered patients did not have their COPD diagnosis confirmed by spirometry with no statistical difference between practices with desktop (18%), hand held (16%) or no spirometer (18%). There was however a huge range between practices (0% and 97% patients not having spirometry confirmed diagnosis).The mean difference between estimated and recorded prevalence of COPD was 1.23 (desktop), 2.13 (handheld) and 2.16 (no spirometer), with no statistical difference between practice type. COPD admission rate for 2010/2011 was 35% for Practices with desktop spirometers and 31% for both Practices with handheld and no spirometers.
Conclusion: Owning a spirometer or a higher quality spirometer is not associated with improvement in quality of care indicators. Within all groups of practice there was very wide variation in these quality care indicators suggesting that targeted clinical support for practices is required and not

simply new equipment.
Conflict of interest and funding: Airways nurses performing audits were non- promotional private nurses funded through a collaboration with Boehringer Ingelheim.
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130: Free Respiratory Evaluation and Smoke-exposure reduction by primary Health cAre Integrated gRoups Eritrea study
Ghezai B, Henrichsen SH, Østrem A, Department of primary care, University of Oslo
Research question: 1. What is the prevalence and burden of COPD in a rural area in Eritrea? 2. Is it feasible and acceptable to reduce the main contributory factors such as tobacco smoke and exposure to biomass fuel use? 3. How could the effectiveness and cost benefit of reducing the main contributory factors be measured? 4. Do educating health workers on sprometry and COPD make a change on detecting, treating, and preventing COPD?
Background: Tobacco smoking has traditionally been the main factor responsible for the development of chronic obstructiv lung disease (COPD). Many peple, however, are still unaware of the damage caused by indoor pollution particularly in sub Saharan Africa, which disproportionally affects women and children. Biomass fuel use has been shown to be an independent risk factor for COPD. There is scarcely data on the prevalence of COPD and its risk factors in sub Saharan Africa.
Possible methodology: The main objective of this survey is to conduct a population-based cross-sectional epidemiological study on the prevalence of COPD and its risk factors in resource-poor rural settings in Eritrea among 300 men and 300 women above the age of 20. Direct exposure to biomass smoke will be measured. Furthermore a qualitetive survey will be conducted, concerning cooking traditions, type of fuel used, characteristics of the house and where the family members spend their time.
Questions to discuss: 1. How best can the research questions be answered? 2. What would be the best way involving local health workers? 3. Biomass smoke exposure starts at early age, would this have an impact on early onset of COPD?
Conflict of interest and funding: None Funded with unrestricted grant from Lunger i Praksis.
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150: ACATIB (Asthma and COPD Assessment Tools In Balearic Islands)
Roman M, García M, Gorreto L, Urendez A
Research question: May an educative intervention in doctors and nurses improve asthma and COPD follow up in the asthma and COPD population?
Background: The measure of disease control and quality of life in asthma and COPD, have proven to be important tools in assessing disease severity and prognosis. There are questionnaires that collect this information uniformly and promote better outcomes. The latest GINA review recommends asthma management based on symptoms control.One of the best validated tools is the Asthma Control Test. Both MRC and CAT questionnaire have been recently introduced by GOLD as one of the main dimmensions for COPD clasification. Thought these tools are included in the primary care clinical registers, the ignorance and a lack of training on their proper use, causes a clear underuse among doctors and nurses. The Balearic Society of Family Medicine has developed an education program to encourage their use in primary care practice
Possible methodology: After measuring the current use of these tools among primary care nurses and doctors, we will develop an educative program based on a bread crumbs strategy. The program will begin by traning the respiratory experts from each one of the primary care practices in Baleares. They will be incentivated to train theis colleagues in the primary care centre in a predeterminated period. We will finally measure the attitude and behaviour changes by observing the use of the tools 6 months after the implementation
Questions to discuss: 1 which is the best metodology to run such an educative project
2 which is the best way to incentivate primary care professionals to develop the project

Conflict of interest and funding: Funded by a resticted grant from GSK Spain
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S21 Improving medical records, Saturday 28 April 2012 14.30-15.30 in Tinto

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340: Will moving from Read to SNOMED-CT clinical coding systems improve the quality of allergy/asthma recording in UK primary care?

Mukherjee M, Simpson CR, Fernando B, Sheikh A

Research question: To see if a move from Read to SNOMED-CT codes is likely to improve the comprehensiveness, accuracy and clinical utility of allergy/asthma coding in primary care (PC).

Background: Paper-based coding systems are increasingly replaced with electronic health record systems internationally, since they have the potential to improve the quality, safety and efficiency of healthcare, if there is proper coding of clinical information in these record systems. Although Read coding system is mainly used in UK PC, the limitations are clinical gaps, lack of granularity, difficulties associated with mapping onto the ICD codes used in UK hospitals and limited opportunity for international comparisons. Consequently, the UK Government declared to have the more detailed multi-axial SNOMED-CT as the sole supported terminology in the NHS, by April 2015.

Possible methodology: Beginning with a comprehensive clinical terminological framework/taxonomy of allergy/asthma related codes, as an exemplar clinical area, we seek to assess the extent to which these can be mapped onto and between Read and SNOMED-CT with a view to identifying areas of congruence, dissonance and further development. Related qualitative work may be undertaken to understand the challenges of real-time clinical coding and how this can be meaningfully supported.

Questions to discuss: What would GPs want from a clinical coding system? Are there experiences from using SNOMED-CT elsewhere that the UK can draw upon? Is the move to SNOMED-CT likely to improve the standards of allergy/asthma care? Are there potential collaborators in this line of research?

Conflict of interest and funding: No conflicts of interest. This work has received no direct funding,
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267: Development of an asthma electronic patient record to validate a minimum data set for asthma

Coyne L, Price D, Nolan D, Holohan J

Research question: Development of an asthma electronic patient record as a model for data collection, to facilitate best practice asthma management, and validate a minimum data set for asthma

Background: Development of an Asthma Electronic Patient Record (EPR) may facilitate guideline based asthma management in primary care, disease specific data collection and health service planning and decision making. A variety of practice management systems are commercially available but none have a consistent asthma module. This is in part because there is no agreed national or international minimum data set for asthma. This leads to variations in data recording and resulting asthma management contributing to the large variability in outcomes observed and cost of care.

Possible methodology: The EPR will be developed using an agreed minimum data set for asthma, developed with international collaboration. The EPR will be implemented in a pilot cohort of primary care teams. The implementation will examine current practices and identify opportunities to optimise data entry.

The EPR will be assessed for acceptability and the minimum data set validated in terms of its ability to predict future asthma control and risk, as well as concordance with guideline based care

Questions to discuss: Meet clinical guidelines, optimise care and audit clinical outcomes Optimise data collection for national chronic disease management Discuss the essential data to collect versus the "nice to have" information. Standardise contribution to European/International data collection instruments Set standards to enable information to be shared electronically (interoperability

standards).
Conflict of interest and funding: No conflict of interest, the study will be undertaken by the Asthma Society of Ireland to improve care for asthma patients in Ireland in collaboration with Irish College of General Practitioners. International collaboration will be welcomed. Initial funding will be provided by the Asthma Society of Ireland. Co-funding may be sought from research funding programmes providing support for not-for-profit organisations. Engagement with commercial providers of clinical management systems is anticipated post development to facilitate roll-out if successful.
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297: Specialised questionnaires aid asthma review consultations in primary care
Coyne L, Holohan J
Research question: Does a specialised asthma questionnaire completed in the waiting room aid asthma specific consultations in Primary Care?
Background: Patient visits to their GP are brief lasting approximately 8-10mins. During this time the healthcare professional (HCP) must assess patient control, discuss treatment, prevention and education, while dealing with the current reason for presentation; if not a scheduled asthma review.
Possible methodology: A specialised asthma questionnaire (AQ) would be implemented in a number of nationally representative Primary Care Teams. Patients would be requested to complete the AQ in the waiting room prior to their consultation. A carbon copy would be placed in the patients file. Structured baseline interviews and surveys regarding an asthma patient visit would be completed with HCP prior to implementation of the AQ. Patients would be recruited opportunistically as they present to the practice – AQ would differentiate between scheduled and unscheduled visits. The AQ would be implemented for a 6 month period and completed AQ would be anonymised with a practice code only, for later interrogation. Structured exit interviews and survey would be completed with HCP to investigate the advantages or disadvantages of an AQ. A representative cohort of patients would be invited to be interviewed and complete the survey, balanced from scheduled and unscheduled visits.
Questions to discuss: Does a structured AQ benefit asthma review in primary care? What are the benefits of the AQ in scheduled versus unscheduled visits? Can the AQ be sent to the patient to be filled out at home and brought to the practice? Could this form the basis of the reminder notification to the patient?
Conflict of interest and funding: No conflict of interest, the study will be solely undertaken by the Asthma Society of Ireland to improve care for asthma patients in Ireland. Funding will be provided by the Asthma Society of Ireland.
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247: New codes are needed to record COPD severity in UK primary care - a modified Delphi Exercise
Sims E,Price D, Jones R
Research in Real Life
Aim: In the UK electronics are used to classify COPD severity, but there is confusion about codes used in primary care for recording COPD. The aim was to explore which codes are needed for coding severity and for measures of health status and future risk of exacerbation.
Method: A Delphi exercise in 3 rounds was used: in Round1 questionnaires, consisting of background information and unstructured, open ended questions were email to PCRS-UK members. Round 2 questionnaires: areas of high uncertainty: using structured and open ended questions. 'Best approach' recommendations and preferred measures were used in Round 3 structured questionnaire, distributed to delegates at the 2011 PCRS-UK conference.
Results: Response rates were 20 in Round 1, 11 in Round 2 and 55 in Round 3. In Round 1 respondents the most frequently reported measures of COPD severity were MRC score (90%), FEV1 % predicted (75%), exacerbations (55%), CAT score (40%), DOSE Index (35%) and CCQ score (20%).

75% of respondents agreed that new codes, or a revision of current codes is required for recording of lung function severity. In Round 2, respondents preferred CAT to CCQ and willingness to use DOSE score were identified. In Round 3, 96% of delegates agreed to use the CAT score and DOSE Index as preferred measures of health status and risk of future exacerbation; 89% agreed that current COPD severity codes should be replaced with new codes.
Conclusion: Strong support exists within the primary care respiratory community for the introduction of new READ codes to replace the outdated current codes, and for the CAT score and DOSE Index to be used routinely in the primary care management of COPD.
Conflict of interest and funding: Professor David Price has consultant arrangements with Altana, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Merck, Mundipharma, Novartis, Pfizer, Sandoz and Teva. He or his research team have received grants and support for research in respiratory disease from the following organisations in the last 5 years: UK National Health Service, Aerocrine, AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Merck, Mundipharma, Novartis, Nycomed, Pfizer, and Teva He has spoken for: Almirral, AstraZeneca, Boehringer Ingelheim, Chiesi, Cipla, GlaxoSmithKline, Kyorin, Merck, Mundipharma, Pfizer and Teva He has shares in AKL Ltd which produces phytopharmaceuticals. He is the sole owner of Research in Real Life Ltd. Dr Erika Sims is an employee of Research in Real Life Ltd Dr Rupert Jones - No conflict of interest
Corresponding author: Professor David Price **Email:** david@rirl.org

157: COPD disease severity stratification obtained by electronic review of routinely collected primary care data
Ryan FD, Blackaby C, Jones RCM, Price DB
Woodbrook Medical Centre
Brief outline of context: In COPD little is known with regards to quantification of different strata of severity and identification of high risk patients.
Brief outline of what change you planned to make: To characterise the burden of COPD by severity in our local health economy.
Assessment of existing situation and analysis of its causes:: Beyond raw data concerning recorded prevalence of disease and hospital admissions, no characterisation of our population existed
Strategy for change:: Practice databases were interrogated for routinely held data for COPD using OPC software. Reports were provided at individual, practice and locality level. Following analysis a practice visit was undertaken by a member of OPC (FDR) to provide feedback.
Measurement of improvement: Stratification by severity

Severity	Severity of COPD patients (n)	Severity of COPD patients (%)
Mild	438	14.2
Moderate	1534	49.8
Severe	28.8	887
Very Severe	221	7.2

Effects of changes: Further stratification employing the DOSE index revealed 177 high risk patients, suitable for active case management http://171.66.122.149/content/early/2009/09/24/rccm.200902-0271OC.full.pdf.
Lessons learnt: Stratification should facilitate individualised patient management by permitting therapy mapping. Furthermore, it permits the identification of those patients who are most at risk of exacerbation/hospitalisation.
Message for others: Electronic review of routinely held data using appropriate software offers the potential to improve individual patient care,practice level care and planning for community infrastructure by characterising disease severity
Conflict of interest and funding: No conflicts of interest.
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203: Development of medical record keeping software in Bangladesh

GMM Habib
President IPCG-Bangladesh

Brief outline of context: Medical record keeping is poorly developed in primary care setting of Bangladesh. Software is developed by the IPCG-Bangladesh for the same. Patients with the loss or unavailable previous records (which are common) can be reviewed from the medical records instantly, even in over the telephone consultation. Analysis of data within seconds will help to audit the practice, identify the causes of non-achievements and adopt appropriate practice strategy.
Brief outline of what change you planned to make: We planned to

- Keep electronic patient data
- Provided printed prescription to patients
- Analyse data periodically for clinical audit
- Develop follow up and referral strategy
- Develop a data base of patients for research

Assessment of existing situation and analysis of its causes:: Primary Care Physicians (PCPs) prescribe with only few data noted on a sheet including name of drugs with incomplete information. Those handwriting prescriptions are not always well read by the pharmacist and wrong drugs are dispensed at times, the prescriptions are lost frequently. PCPs do not keep a copy of the prescription which is the only medical record of the patient. Most of PCPs do not maintain a patient register as well.
Strategy for change:: A team of quality assurance will assess every six
Measurement of improvement: as above
Effects of changes: Structured care
Lessons learnt: Software care can change a practice with huge positive impact
Message for others: Good medical recording with digital method is a part of good practice
Conflict of interest and funding: None
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S22 Integrated care, Saturday 28 April 2012 14.30-15.30 in Moorfoot

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325: Integrated working across boundaries to improve COPD diagnosis and management in primary care

Patel IS, Lord Z, Porter A, Sayers D, Petri A
Imperial College Healthcare NHS Trust; NHS Hammersmith and Fulham, London, England.

Brief outline of context: Integrated respiratory team participated in a national improvement programme to improve the quality of respiratory services.
Brief outline of what change you planned to make: Introduction of specialist support to primary care to deliver quality assured spirometry, workplace based training and quality reviews to improve quality and reduce variation across the PCT.
Assessment of existing situation and analysis of its causes:: High admission rates and poor outcomes for COPD patients. 52% of patients admitted for COPD exacerbations were not recorded on GP disease registers. Approximately 5,000 patients were undiagnosed and few practices had access to spirometers and few operators met recognised standards.
Strategy for change:: Pareto analysis targeted practices with highest admissions and readmissions. The integrated respiratory team and GP Lead worked with practice staff to improve skills and knowledge, and support quality NICE quality standard COPD reviews.
Measurement of improvement: Data relates to the first three practices. Patient and practice level

data was collected before and after intervention.
Effects of changes: Staff in practices received both workplace based and modular education and training. 145 patients had a quality COPD review inline with NICE quality standards. Results include 44% of patients undergoing changes to prescribed pharmacotherapy and significantly improved recording of FEV1, exacerbations and breathlessness. Practices agreed to a sustainable plan of future reviews and ongoing care for their patients.
Lessons learnt: Implementation of the chronic care model in COPD pathway can improve outcomes.
Message for others: Shared aims and joint working across traditional boundaries has the potential to build sustainable improvements.
Conflict of interest and funding: Points audit programme provided by GSK
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315: Development of an integrated respiratory service in West London
Patel I, Lord Z, Sayers D, Petri A.
Imperial College Healthcare NHS Trust/Central London Community Healthcare.
Brief outline of context: Imperial College Healthcare NHS Trust and NHS Hammersmith and Fulham have been working together to improve services and outcomes for patients with COPD.
Brief outline of what change you planned to make: An integrated COPD patient pathway was agreed and a respiratory redesign group was convened, chaired by a local GP.
Assessment of existing situation and analysis of its causes:: The PCT had poor outcomes for COPD, with high admission rates costing £1,014,817 a year. 52% of patients admitted with COPD exacerbations were not recorded on GP registers. 5,000 patients were estimated undiagnosed with few practices having access to spirometers and few operators meeting recognised standards.
Strategy for change:: Service developments included: community pulmonary rehabilitation; early supported discharge and rapid response telephone service; community respiratory consultant clinics; specialist respiratory nurse-led support to primary care; multidisciplinary respiratory education and training for community healthcare professionals and close working between the community and secondary care respiratory teams with a regular MDT.
Measurement of improvement: Acute COPD admissions and readmissions, length of stay and outpatient attendances were reviewed.
Effects of changes: Compared to 2009/10: Acute admissions reduced by 19%; Readmissions reduced by 66%; patients admitted with COPD exacerbation as new diagnisis of COPD reduced from 50% to 10%; Reduction in first and folow up chest clinic attendances.
Lessons learnt: An innovative integrated service supported by improvement methodology has improved and will continue to improve the quality of patient care, delivering better patient outcomes and value for money.
Message for others: Shared aims and joint working across primary, secondary and community care, with engagement of commissioners have been critical to this process.
Conflict of interest and funding: None
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345: Nurse led team admission avoidance (AA) for chronic obstructive pulmonary disease (COPD) exacerbations.
Pearce L, Pulimood T, Knolle M, Laroche C.
West Suffolk Hospital, UK
Brief outline of context: COPD exacerbation AA reports consist of doctor/nurse assessments in emergency department/community clinic followed by community management.
Brief outline of what change you planned to make: Patients referred by GPs to Suffolk COPD Services, visited in their home on same day.
Assessment of existing situation and analysis of its causes:: Respiratory team reviewed 132 consecutive referrals for one year period.

Strategy for change:: Data analyzed using SigmaPlot™, expressed as mean (±SEM). Summary report of anonymised patient satisfaction data routinely collected over 2 years includes study population.
Measurement of improvement: 16 referrals resulted in admission: four with severe hypoxia/acute type II respiratory failure; three myocardial infarctions; three after failure to respond to treatment, others for various reasons. There were two deaths. One referred for terminal event support. The 2nd admitted, too unwell for home management.

Characteristic	Admission Avoided	Admitted
episodes (N)	116	16
patients (N)	91	14
age (years)	71.64 (±1.07)	74.06 (±2.25)
FEV1 (l/min)	0.79 (±0.33)	0.67 (±0.09)
FEV1/FVC (%)	43.8 (±16)	35.2 (±16)
O_2 sats (%)	92.1 (±4.1)	89.3 (±4.3)
MRC breathlessness Score	3.9 (±0.7)	4.8 (±0.6)
Mortalities (N)	1	1

Effects of changes: Patients spent average 4.9 (±0.4) days under service, received 3.7 (± 0.2) visits, 0.9 (± 0.1) telephone consultations. 252 satisfaction surveys were sent. 178 responded, 119 were very satisfied, 13 satisfied, 2 dissatisfied, 1 very dissatisfied. Our service prevented 87% of potential admissions.
Lessons learnt: Referral by GPs to trained specialist nurses presents a safe form of AA for COPD exacerbations. 96% of patients were very satisfied / satisfied.
Message for others: This may be an effective way to reduce admissions, directing work away from emergency departments/clinics.
Conflict of interest and funding: None
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251: Edinburgh Community Respiratory Team: An innovative approach to managing the COPD population
Benn L, Buchanan L, Daniell E, Groom L, Harborrow G, Sparrius C, Thomson A, White W
Edinburgh Community Respiratory Team, NHS Lothian.
Brief outline of context: In NHS Lothian, Scotland 1.48% of the population has COPD.
Brief outline of what change you planned to make: We aimed to develop a new service to meet the challenge of providing proactive primary care services to people with COPD
Assessment of existing situation and analysis of its causes:: A new physiotherapy-led team was designed to supplement existing primary care services
Strategy for change:: Since April 2008 a specialist physiotherapy-led Community Respiratory Team (CRT) has provided a 7-day service managing acute exacerbations, supporting early discharge, and providing home-based pulmonary rehabilitation for COPD patients in Edinburgh.
Measurement of improvement: We collected routine data and administered the Talking points questionnaire, designed to measure outcomes important to users of the community care services in Scotland. We received 105 responses (50% response rate)
Effects of changes: In just under four years, the CRT received 1613 referrals and conducted 10,492 home visits. 94% of patients reported they were able to access the service without difficulty. 83% of patients reported the service had supported them to “stay as well as I can be” and 56% to “live where I want to live” and “keep active”.
Lessons learnt: The CRT has helped to ensure that the right care is delivered at the right time and in the right place, working to assist COPD patients to optimise the self management of their long term

condition.
Message for others: This new way of working has created a model that respiratory services are now considering replicating within other NHS health boards.
Conflict of interest and funding: No conflict of interests and funding all provided byl NHS Lothian
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198: Implementing integrated care (ic) for asthma/COPD in primary care (pc) by bundled payment; results after 3 years.
Smeele I, Meulepas M , Meulemans C, Reus I
Care Group DOH, Eindhoven, Netherlands
Brief outline of context: The DOH Caregroup implements IC for COPD and asthma in PC by bundled payment.
Brief outline of what change you planned to make: Implementation of structured multidisciplinary care.
Assessment of existing situation and analysis of its causes:: Baseline measurements showed deficiencies in care.
Strategy for change:: In care group DOH (100.000 patients) 50 GP's and 23 practice-nurses are working in grouppractices (Dutch College certified). Implementation of the IC programme was done by educational sessions (10), protocolbooks on care and registration, additional support through website/newsletter, annual feedback meetings and two times a year benchmarkdata feedback.
Measurement of improvement: Measurements (4) were done in 2008-2009-2010-2011 using the Dutch National set of quality indicators. Patients where treated in PC only. The practice registration system was primary source of data.
Effects of changes: The prevalence of COPD in the care program was on average 1%, asthma 1.9%. Specialist treatment in COPD was 0.9% and in asthma 0.7%. Baseline measurement showed much room for improvement both on registration and care provided. On average 25% of patients used no medication. After 2 years clear improvements from baseline were seen (37% in asthma and 34% in COPD). Results after 3 years will be presented including MRC-score, CCQ, exacerbations and physical activity. Referalls for physical activity where to low.
Lessons learnt: The diagnostic process is complex. Collecting indicators of care is possible. Changes in patients outcomes can only be seen after several years. Focus should be on smoking cessation and PC rehabilitation interventions.
Message for others: Implementing IC for asthma and COPD by bundled payment is possible and shows demonstrable improvements.
Conflict of interest and funding: None
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276: Nurse initiated intervention provides timely rescue therapy to relieve patients of their acute respiratory exacerbations in public primary care clinics in Singapore
Tan NC, Tay IH
SingHealth Polyclinics, Singapore
Brief outline of context: Timely response to patients with acute respiratory exacerbation (AE) due to bronchoconstriction with rescue therapy is critical to avert a potentially life-threatening event. Such access could be delayed by exisiting barriers at local polyclinics.
Brief outline of what change you planned to make: A protocolised intervention would be developed to provide timely management of AE patients.
Assessment of existing situation and analysis of its causes:: The patient's waiting time prior to rescue theray varied between 15 to 90 minutes, due to absence of triage system and multiple clinic processes prior to doctor consultation.
Strategy for change:: After multiple plan-do-study-assess cycles by the espiratory workgroup, a Nurse-Initiated Breathless Patient Protocol (NIBPP) was developed. Registered nurses were trained

to assess patients' respiratory status and to initiate inhalational rescue therapy based on protocol.
Measurement of improvement: The time of patient's registration to the time of initiation of rescue therapy is defined as the "Registered to Rescue therapy" ("RTR") and is used as a process indicator. These data was collected monthly and processed to determine the proportion of AE patients, with "RTR 15" timing of within 15 minutes.
Effects of changes: From August08 to July10, 10 047 patients received rescue therapy using the NIBPP, with proportion of patients with "RTR 15" increased from 23% to 69%, with no significant adverse event.
Lessons learnt: The NIBPP resulted in timely and safe treatment for patients with AE. It is now incorporated as routine practice in these polyclinics.
Message for others: Timely access to appropriate acute care can be improved with re-design of system and role of healthcare professionals.
Conflict of interest and funding: Nil
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S23 Asthma research, Saturday 28 April 2012 14.30-15.30 in Kilsyth

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288: Are primary care asthma patients at high risk of becoming depressed? Preliminary results of a dynamic primary care cohort.
Van den Bemt L, Van der Meer J, Termeer E, Bor H, Schermer T
Radboud University Nijmegen Medical Centre, Department of Primary and Community Care, Nijmegen, the Netherlands
Aim: The aim of this study was to assess whether primary care asthma patients were more likely to be diagnosed with depression by their general practitioner (GP) compared to patients with another chronic condition (i.e., diabetes mellitus; DM) and 'healthy' control individuals during follow-up.
Method: This dynamic cohort study included asthma patients ≥ 18 years from the Nijmegen Continuous Morbidity Registration (CMR) database. The incidence of depression was compared with 2 control groups (DM patients and 'healthy' controls). A Cox's proportional hazard regression model was used to identify the risk of a first episode of depression in patients with asthma compared to both control groups. Covariates were gender, general practice and presence of comorbidity. Patients with a diagnosis of depression prior or at the same time of a diagnosis of asthma, diabetes mellitus or the dummy date of diagnosis (selected follow-up start date of the healthy controls) were excluded from the analyses.
Results: The hazard ratio (HR) for a first diagnosis of depression in patients with asthma (n=410) compared to DM patients (n=861) was 1.74 (BI 1.04, 2.90) and the HR for the comparison with healthy controls (n=727) was 1.71 (BI 1.02, 2.87). After correction for covariates the differences between the groups were no longer statistical significant. Moreover, the HR for asthma versus DM was reduced substantially after the correction for covariates (HR=1.19).
Conclusion: Although asthma patients were more likely to receive a first diagnosis of depression by their GP than patients with diabetes or healthy controls were, these results were no longer statistical significant after correction for covariates. More advanced analysis using propensity scored matching of control subjects and correction for time-dependent comorbidity are needed to confirm these results.
Conflict of interest and funding: No conflict of interest
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138: Asthma and anxiety and depression. Walking together?
Lamarca L, Flor X, Fraga MM, Poblet R, Méndez J, Feijoo MV, Álvarez S.
Unitat Docent Medicina Familiar i Comunitaria. EAP Chafarinas.
Aim: To determine the proportion of mental disorders (anxiety and/or depression) in our asthmatic

patients compared to the non asthmatic population, and to assess the relationship between the severity and control level of asthma and the presence of psychiatric comorbidity.
Method: A transversal descriptive study was developed with 317 asthmatic and 306 non asthmatic patients, from 17 to 70 years old in an urban primary care centre. The Goldberg test for screening of anxiety and depression was performed. Other analyzed items were: age, gender, previous anxiety and /or depression, chronic diseases, severity of asthma and level of control.
Results: 70.3% of the asthmatic patients were women versus 51.3% on the non asthmatic group, the average age was 42 (SD 16.89) and 47 (SD 14.09) years old respectively. 57.1% had intermittent asthma, 16.7% mild persistent and 26.2% moderate persistent. 62.7% presented controlled asthma, 23.4% partially controlled and 13.9% uncontrolled asthma. The Goldberg test score of the asthmatic group showed anxiety in 51.1% compared to 34.6% on the non asthmatic group ($p<0.0001$) and depression in 57.4% compared to 38.9% on the other group ($p<0.0001$). Better asthma control was associated with lower anxiety ($p=0.002$) and depression ($p=0.004$). The association between the severity of asthma and the presence of mental disorders was not proven.
Conclusion: The asthmatic group showed greater proportion of anxiety and depression compared to the non asthmatic group. Better asthma control was associated with lower anxiety and depression. No other associations were significant.
Conflict of interest and funding: No conflict of interest.
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313: Temporal variations in early gut microbial colonization are associated with allergen-specific immunoglobulin E but not atopic eczema at 2 years of age
Storrø O, Øien T, Langsrud Ø, Rudi K, Dotterud C, Johnsen R
Norwegian University of Science and Technology (NTNU), Trondheim, Norway
Aim: We investigated, in a prospective study design, whether allergen-specific IgE (sIgE) and atopic eczema are associated with variations in gut microbial colonization patterns in an unselected population during the first 2 years of life.
Method: Faeces from 94 infants were repeatedly sampled from 10 days, 4 months, 1 and 2 years postnatal and analysed for 12 different bacterial species by quantitative real-time PCR. Venous blood samples from the infants collected at 2 years of age were analysed for sIgE for 12 specific allergens. The temporal gut colonization patterns for 42 sIgE-positive (sIgEX0.35 kU/L) and 52 sIgE-negative children (sIgE 0.1 kU/L) were then compared. The association between colonization pattern and phenotype as atopic eczema according to UK Working Party (UKWP) criteria were also described.
Results: Subjects with atopic sensitization had lower levels of Escherichia coli at 4 months and 1 year, higher levels of Bifidobacterium longum at 1 year and lower levels of Bacteroides fragilis at 2 years. For E. coli and B. longum, the differences were only transient and had disappeared by 2 years of age. For other species, there were no differences in colonization patterns, and we found no association between colonization pattern and atopic eczema.
Conclusion: We found temporal and transient variations in gut microbial colonization patterns associated with differences in sIgE sensitization at 2 years of age. A full understanding of the principles and mechanisms that underlie intestinal microbial colonization and diversity and host–microbiota relationships will be pivotal for the development of therapeutic approaches that manipulate the intestinal microbiota to maintain human health.
Conflict of interest and funding: Conflict of interest: none. Funding:The Norwegian Department of Health and Social affairs, GlaxoSmithKline AS, Norway. Siemens Medical Solutions Diagnostics.
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254: Yearly change of spirometry in Vietnamese asthma patients managed by Global Initiative for Asthma (GINA) guideline: a 5 year follow-up study
Nguyen NV, Le TTL and Pham HK
University of Medicine and Pharmacy, Ho Chi Minh City, Viet Nam

Aim: To assess the yearly change of spirometry of asthma patients have managed by GINA guideline for 5 years in Ho Chi Minh City, Viet Nam
Method: Prospective and retrospective descriptive study including all asthma patients registered in Respiratory Care Center, University Medical Center at Ho Chi Minh City Viet Nam in five years from 01/2006 to 01/2011.
Results: 4554 patients were included in the first year with average age of 33 and females comprise 42%. The numbers of patients were followed after 1, 2, 3, 4 and 5 years are 853, 685, 629, 545, and 464, respectively. All spirometry parameters were improved significantly after one year therapy: percent predicted FVC (%FVC) was improved from 81% to 88%, percent predicted FEV1 (%FEV1) from 79% to 85%, percent predicted PEF (%PEF) from 71% to 84% and percent predicted FEF25-75 (%FEF25-75) from 64% to 75%. %PEF was improved much more than others were as 13% and that made it be changed from abnormal values (≤80%) to normal values (≥80%). %FEV1 reach its peak after 12 weeks (males) to 48 weeks (females) and have maintained without significant change for next 4 years. %FVC, %PEF and %FEF25-75 reached their peaks after 12, 24 and 12 weeks, respectively, and have been continuously stable in the subsequent years without significant difference between two sexes.
Conclusion: All spirometry parameters of Vietnamese asthma patients were significant improved and reach their peaks after 1 year of management based on GINA guidelines and were stable after reaching these peaks in the following 4 years.
Conflict of interest and funding: No conflict of interest, funding from University of Medicine and Pharmacy at Ho Chi Minh City, Viet Nam
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194: Clinical implications of using the Royal College of Physicians three questions (RCP3Q) in routine asthma care
Burton C, Price D, Lester H, Campbell S, Keeley D, Gruffydd-Jones K, Hoskins G, Pinnock H
The University of Edinburgh
Aim: Annual recording of the RCP3Q is rewarded under the terms of the UK general medical services contract. We aimed to investigate its performance as an instrument for assessing control in real-life practice when compared to the gold standard of the validated Asthma Control Questionnaire (ACQ).
Method: We compared the RCP3Q score extracted from the patients' computerised medical record with the ACQ self-completed after the consultation. The anonymous data were paired by practice, age, sex and dates of completion. We calculated the sensitivity and specificity of the RCP3Q scale compared to the ACQ≥1 (the threshold for good/poor control).
Results: Of the 291 ACQ questionnaires returned from 12 participating practices, 129 could be paired with complete RCP3Q data. 25/27 patients who scored zero on the RCP3Q were well controlled (ACQ<1). An RCP3Q score ≥1 predicted inadequate control (ACQ≥1) with sensitivity of 0.96 of patients and specificity of 0.34. Comparable values for RCP3Q≥2 were sensitivity 50% and specificity 94%. An intra-class correlation of 0.13 indicates substantial heterogeneity between practices. Exacerbations and use of reliever inhalers were moderately correlated with the ACQ and may reflect different aspects of control.
Conclusion: In routine practice an RCP3Q score of zero indicates good asthma control and a score of two or three indicates poor control. An RCP3Q score of one has good sensitivity but poor specificity for sub-optimal control and should be interpreted in conjunction with other factors such as exacerbations and use of reliever inhalers.
Conflict of interest and funding: None
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344: Home visits for improving asthma follow-up consultation attendance
Corbalán J, Soto MT

Family Medicine Society of Chile, Primary Care Respiratory Group of Chile
Brief outline of context: Regular review is a marker of quality care and relates to better asthma control. Non-attendance is a frequent and concerning problem.
Brief outline of what change you planned to make: Improve attendance to asthma follow-up consultations.
Assessment of existing situation and analysis of its causes:: The Child Asthma Program provides care for around 500 patients. Every 6 months the population under control is reviewed. Since December 2010 non-attendance (missing appointments for more than 3 months) was recorded, 37.2% were non-attenders.
Strategy for change:: We implemented a home visit strategy. Every month the non-attenders were identified and a home visit was planned. Completed visits considered a survey, asthma control assessment and a medical appointment.
Measurement of improvement: We measured at 6 and 12 months the non-attenders and if the home visit lead to attendance or not.
Effects of changes: 147 home visits were done. 67 were completed, with a 65.7% of success (patient attends to appointment). 80 home visits failed and only 16.3% of those patients had spontaneous appointments. At 6 months 17% of patients were non-attenders, and 24% at 12 months. In one year the nonattendance rate was reduced in 13.2%.
Lessons learnt: Improving attendance is feasible. Patients appreciate interventions outside the health center. In many cases management doesn't match the indicated prescription. Causes of non-attendance are diverse and had to be explored deeper. Feeling well despite of uncontrolled asthma and difficult to access appointments are worrisome.
Message for others: Looking for non-attenders is an important issue for managing asthmatic children. Home visits also provide the opportunity to reinforce prescriptions in patient´s natural environment.
Conflict of interest and funding: None
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S24 General and environment, Saturday 28 April 2012 14.30-15.30 in Harris

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298: Skin Lesion In Chronic Arsenicosis -Evaluation Of Lung Function Test
Saurabh Kole, Bibhore Sengupta, Pandey Naren, Apoorva Krishna, Shankar Saha,S.P.Singh
M.P.Birla Medical Research Centre
Aim: About 8 million people of west bengal(12 districts)region are at potential risk of consuming arsenic contaminated drinking water and a major section of them showed many symptoms including alteration of Lung function. More than 37% of our population in twelve districts of West Bengal are using arsenic contaminated water. the permissible range of arsenic in drinking water as per WHO guidelines is 0.01 mg/litre So it was our first step in strategy formulation to make out the total number tube wells by testing equipments and pft evaluation
Method: After detection of the arsenic prone tube wells – these tube wells are marked and aware the villagers not to use them for drinking purposes present study was conducted on chronic arsenicosis patients in selected area at karimpur to assess lung function status by measuring FVC, FEV1, FEV1/FVC% PEFR
Results: 240 subjects with 20-50 years of age including both sexes were selected 80 non arsenic skin subjects were selected, who were not exposed to arsenic contaminated water and were grouped as healthy control 160 subjects from area exposed 80 were patients or chronic arsenicosis with skin lesion and were considered as experimental group & exposed to arsenic contaminated water for>6 months, 80 healthy control. lower in chronic arsenicosis patients in comparison to those of non-arsenic exposed and experimental group with the exception of FEV1/FVC%.
Conclusion: Populations consuming higher arsenic concentration in drinking water are at the risk of

lung function impairment and ultimately may lead to respiratory disorders, though it would be better to draw a definate conclusion from a further study involving large sample size
Conflict of interest and funding: no conflict of interest was there
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149: Educational interventions to improve antibiotic use in primary care - systematic review.
Roque F, Herdeiro MT, Soares S; Breitenfeld L, Cruz e Silva OAB, Figueiras A
Centre for Cell Biology (CBC/UA), UDI/IPG, UBI - Portugal
Aim: To carry out a critical review about the effectiveness of educational interventions on changing habits of antibiotic prescription by physician and/or habits of antibiotic dispensing by pharmacists, in primary care.
Method: Review all studies published, from January 2001 to December 2010, about educational interventions in physicians and/or pharmacists to improve antibiotic use in primary care, by searching the scientific MEDLINE database, using PubMed. Data extraction included study design, type of interventions, population targeted and outcomes measured.
Results: Forty-two studies were included in this review. Educational interventions, to improve antibiotic use, in primary care, occurred mainly in physicians. In seven studies, interventions were made in pharmacists and in 15 studies the interventions were extended to patients and their caregivers. In 31 articles, the authors studied the use of antibiotics in respiratory infections, and the remaining (26%) did not identify the pathology. Mostly studies include active interventions (associated or not with passive interventions) on health professionals. In 3 studies interventions include improvement of communication skills with patients. In 25 studies, authors reported positive results for all measured outcomes, in 11 studies (28%) some outcomes have positive results and others were not statistically influenced by intervention. When educational interventions include improvement of diagnostic procedures, it leads to very positive results.
Conclusion: Respiratory diseases were pathology targeted in most studies, and educational interventions revealed to be effective to improve antibiotic use in these patients. We concluded that it is important to perform educational interventions in heath professional, to improve antibiotic use, and, interventions should be active, multiple and tailored taking into account the attitudes and knowledge of professionals.
Conflict of interest and funding: Supported by Fundação para a Ciência e Tecnologia (FCT). Funding references: PTDC/SAU-ESA/105530/2008.
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336: Going for Gold
Goodwin, Daryl
Wand Medical Centre, UK
Brief outline of context: Patients with COPD in England are high users of urgent care. Each episode costs many times the resource allocated for primary care of that patient. In current climate it is necessary to reduce recurring high costs.
Brief outline of what change you planned to make: Adoopting the Gold guidelines as more comprehensive than the then current Nice guidelines.
Assessment of existing situation and analysis of its causes:: Nice guidelines at the inception (2009) did not include the psychological dimension for the patient, nor did they recognize the milder severity in Gold. Patients were disatisfied at being taken to any one of three emergency centres where they received different advice or treatment (often conflicting). There was a lot of panicked, emergency admissions with exacerbations.
Strategy for change:: Improve the diagnosis and make it earlier in the process. Educate, inform and empower patients so they have an alternative to emergency admission. Implement self-management plans and provide standby treatment. Buy in specialist nursing and train in-house staff, invest in spirometry and use it more widely and often. Funding of £9,000 covered two years.

Measurement of improvement: Emergency admission rates; grade of severity; exacerbations and implementation of self-management plans.
Effects of changes: Lowest emergency admission rate for size of COPD poulation amongst 63 practices. 80% now have self-management plans and standby treatment versus 10% initially. More "mild" patients; fewer "very severe". Exacerbations increased at all severity levels.
Lessons learnt: Attending to to the mental wellbeing and improving of self care reduces emergency admissions. Costs can be cut after initial investment in resources and time. Self-management plans are not feasible for everyone. Ought to have measured satisfaction.
Message for others: Look after the whole person.
Conflict of interest and funding: The author has received speaker's payments and sponsorship for meetings from all the major pharmaceutical companies. The majority of the funding was from Freed Up Resources (FURs) derived through practice based commissioning. Thanks to Allen&Hanburys and Boehringer Ingelheim for part sponsorship of the specialist nurse and to GSK for the Points software used in tracking and monitoring patients.
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186: REFRESH: Reducing children's exposure to second-hand smoke in the home - an innovative intervention in the community
Turner SW, Wilson I, Mills, L, Shaw A, O'Donnell R, Ritchie D, Amos A, Semple S
University of Aberdeen, Aberdeen, UK
Aim: To determine whether an intervention based on indoor air quality feedback would reduce young children's exposure to SHS.
Method: Mothers who smoked and who had a child aged 1-5 years were identified through primary care records. Participants were randomised to standard intervention (motivational interview) or enhanced intervention (motivational interview plus feedback of indoor air quality). There were 4 home visits over a one month period which involved two 24 hr. measurements of home air quality ($PM_{2.5}$) and a motivational interview. The enhanced group received their air quality data as part of their motivational interview at visit 2; the standard (control) group received that information at visit 4. The child's salivary cotinine was measured before and one month after the intervention
Results: Of the 1693 mothers invited to participate, 54 were recruited and 48 completed the study. Both groups experienced reductions in $PM_{2.5}$ concentrations. The maximum $PM_{2.5}$ fell from 135 to 67 $\mu g/m^3$ in the enhanced intervention and from 190 to 148$\mu g/m^3$ in the control group ($p=0.006$ for between group difference). The proportion of time above the recommended $PM_{2.5}$ concentration fell from 3 to 0% in the enhanced intervention and from 7 to 4% in the control group ($p=0.017$). There were non-significant trends for greater reductions in mean $PM_{2.5}$ concentration and salivary cotinine for the enhanced intervention group compared to the control group.
Conclusion: In the primary care setting, providing mothers who smoke with personalised results about the indoor air quality of their homes along with a motivational interview is feasible and has an effect on improving household air quality.
Conflict of interest and funding: No conflicts to declare. Funding was provided by the Big Lottery Foundation.
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337: A sex specific effect of parental smoking cessation in the prevention of asthma among 2 years old children. A controlled interventional multicentre study in primary health care - the prevention of allergy among children in Trondheim (Pact) study.
Dotterud CK, Storrø O, Johnsen R, Øien T
Department of Public Health and General Practice, Norwegian University of Science and Technology
Aim: Environmental factors as tobacco exposure, indoor climate and diet are identified to be involved in the development of allergy related disorders. The aim was to study the effect of altered exposure to these factors during pregnancy and infancy on the incidence of allergy related diseases

at 2 years of age.
Method: Children from a non-selected maternal population were recruited to a controlled, interventional multicentre study in primary health care. The interventions focused on an increased maternal and infant intake of cod liver oil and oily fish, reduced parental smoking, and reduced indoor dampness during pregnancy and the first 2 years of life. Questionnaires on baseline data and risk factors, and health were collected at 2 years of age.
Results: The odds ratio for the incidence of asthma was 0.72 (95% CI, 0.55-0.93; p=0.01; NNT_b 53), and 0.75 for the use of asthma medication (95% CI, 0.58-0.96; p=0.02). The odds ratio for girls was 0.41 (95% CI 0.24-0.70; p<0.01; NNT_b 32), and for boys 0.93 (95% CI 0.68-1.26; p=0.63). There were no significant change for atopic dermatitis, and allergic rhino-conjunctivitis.
Conclusion: Reduced tobacco exposure during pregnancy and early childhood might be effective in reducing the incidence of asthma at 2 years of age. The differential effect in boys and girls indicate that the aetiology of asthma is dependent of the children's sex.
Conflict of interest and funding: None declared
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308: Environmental lead and childhood Asthma: An Analysis of Pediatric Asthma Hospitalization and Lead Toxicity in New York
Dosanjh A. Koziol J
Rady Childrens Hospital, San Diego,CA, USA
Aim: The goal of this study was to examine rates of pediatric asthma hospitalization and lead toxicity from 2000 to 2005. Enviornmental lead has been identified as an immunoactive heavy metal associated with T helper 2 responses, IgE levels and eosinophil counts. Childhood asthma is complex,multifactorial and influenced by environmental exposures.
Method: Available data from links provided by the Department of Health and publically available databases were searched for citywide, borough and neighborhood statistics on lead toxicity and pediatric asthma hospitalization rates. A p value of <0.05 or r- >0.5 was defined as significant.
Results: The citywide pediatric asthma hospitalization rates did not change appreciably and remained steady 6.1 and 6.0/1000 from 2000/1 to 2004/5 respectively.The incidence of toxic lead levels defined as >/= 10ug/dL declined significantly during the same period from 2.9 to 1.78/1000. In all 5 boroughs there was a decline in lead toxicity; Brooklyn had the highest incidence, 4.39/1000 and also had one of the highest rates of asthma hospitalization (9.3/1000). All boroughs had no significant change in the rate of asthma hospitalization, with a mean change of 0.18/1000 at risk. In some high risk neighborhoods, eg Bedford-Stuyvesant there were high rates of both lead toxicity and asthma hospitalization.
Conclusion: Based on the potential immunomodulatory properties of lead, this study describes the trends over time in both NYC lead toxicity and asthma hospitalization among a pediatric population. There were no citywide correlative trends. Some neighborhoods at high risk and with similar trends in both lead toxicity and asthma hospitalization were identified. Further investigation of local environments and cellular studies will be performed to further investigate.
Conflict of interest and funding: none
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Saturday 28 April 2012 (P7 Asthma general)

129: Study on knowledge of asthma and assessment of Airway condition by peck flow meter in rural community in Bangladesh.
Rowshan SM
Department of Community Medicine,Rangpur Medical College,Bangladesh
Brief outline of context: To determine knowledge about asthma and air way condition by peck flow

meter
Brief outline of what change you planned to make: Create awareness among the rural community about asthma and training need assessment of health worker
Assessment of existing situation and analysis of its causes:: Knowledge level of asthma and air way condition. Involve of root level health worker,training need assess of health worker
Strategy for change:: Up-zilla health adminstrator,Arrange training of health worker, it is a continous process.
Measurement of improvement: Measure knowledge level of asthma and air way condition by peck flow meter
Effects of changes: Decrease incidence of asthma and increase inhaler user
Lessons learnt: Grass root level health worker are not well trained about asthma
Message for others: Conduct community based study and compair developed country
Conflict of interest and funding: No chance of conflict .Study cost beared by Rangpur medical college.
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143: Asthma quality of life: a dream or a fact?
Flor X, Lamarca L, Méndez J, Poblet R, Baena J
Universidad Autónoma de Barcelona. Unidad Docente de Medicina Familiar y Comunitaria de Barcelona Ciudad. EAP Chafarinas.
Aim: To find out whether the quality of life (QL) of our asthmatic patients is worse in relation to the severity and level of control of their asthma. To assess its relation with various items.
Method: A transversal descriptive study was developed with 250 asthmatic patients between 17 and 70 years old, out of 536 registered in an urban primary care center. The self-application of the mini-AQLQ, which assesses QL in different dimensions (symptoms, activity limitation, emotional function, environmental stimulus) was used. Score 1 (major disability)to 7 (major autonomy). Analyzed items: age, gender, smoking, associated chronic prevalent diseases, associated anxiety and/or depression, allergic rhinitis, type of asthma and control level.
Results: 250 asthmatic patients of which 55.1% Intermittent Asthma, 8.4% Mild Persistent, 36.4% Moderate Persistent. 56.1% Controlled Asthma, 30.8% Partly Controlled, 13.1% Uncontrolled. We find directly proportional relation between QL and control level (p=0.0001), between QL and type of asthma (p=0.002 globally and among the dimensions, except for environmental stimulus, which results were not statistically significant (p=0.08)). The average scoring of the mini-AQLQ was 5.54.
Conclusion: Major severity and minor control of asthma were related to worse QL. The other analyzed items did not show any relation with QL. In spite of the control of asthma can be improved, quality of life is acceptable.
Conflict of interest and funding: No conflict of interest.
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154: Occupational asthma on primary health care
Hernandez E, Rabell V, Vila R, Panadés R, Sivecas J, Blanché X.
Institut català de salut, Spain
Aim: To determine the prevalence of occupational asthma and non-occupational aggravated by work conditions attended by primary health care centers. To determine the proportion of patients diagnosed with occupational asthma that were treated by work insurance.
Method: Descriptive, cross-seccional and multi-centric study. Asthmatic patients aged between 16 to 64 years who work or have worked. -Appointment with patients to sign the informed consent and fill a questionnaire. -Review of questionnaires and classify as common asthma (CA), occupational asthma (OA) or common asthma aggravates by work (WA).
Results: 482 asthmatic patients were recruited, 23,6% did not attend, with a final sample of 368 patients. The prevalence of OA was 18,2% and WA was 14,7%. Therefore, the prevalence of asthma related work (ARW) is 32,9% Of the patients with OA only 16,4% (11 out of 67) had been treated for

asthma by their work insurance and, of those, only 5 patients had been fully monitored by it, while the rest have been attended by the public health system. Thus only 7,5% of patients with OA are followed up througt their work insurance.
Conclusion: There is a considerable prevalence of asthmatic patients whose illness is caused or aggravated by the labour activity (32,9%) The work insurances, who should attend to all these patients, only takes care of a minimal part. If they had to assume all the real costs related to the diseases caused by work, fewer public resources would be spent. It is likely that they would undertake much stronger programs in security and health in work environment and labour activity.
Conflict of interest and funding: There is not conflict of interest in this study The project was funded by the first price from the "Institut d'Investigació en Atenció Primària" (IDIAP), summing 12.000€
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168: Effects of socio-economic status, life style patterns and demographic factors on the onset of asthma in adult Brahmins in Delhi., India
Bhuker M,Kapoor S.
Department of Anthropology,Delhi University,India
Aim: The overall goal of our study was to identify the contribution of socio-economic, demographic factors as well as life style patterns to the risk of asthma in adult Brahmin population of Delhi, India.
Method: A community based study of 50 cases and 50 controls ranging in age from 18 to 50 years was undertaken in Delhi region of India. The cases were collected from Dr. B.R Ambedkar Hospital, Rohini. The controls were chosen from the same demographic region. Statistical package for social studies (SPSS ver.17) was used to find statistical significance.
Results: In clinical cases of asthma, poor sanitation and water supply ($p<0.01$), low education level ($p<0.01$), low income ($p<0.01$), positive family history and low physical activity ($p<0.01$) were found to be associated with asthma. We also found that low education level ($p<0.001$,6.75 times), low family income ($p<0.001$,9.11 times), low personal income ($p<0.001$,12.5times), poor sanitation ($p<0.01$,29.9 times) and high sensitivity to allergy ($p<0.001$,17.07 times), positive family history ($p<0.01$,2.78 times) were likely to increase the risk of asthma in the population under study. Our study also suggested that house wives are 4.80 times ($p<0.05$) and inactive individuals are 9.54($p<0.001$) times more at risk of developing asthma.
Conclusion: This study indicates that low socio-economic status, positive family history of asthma, higher sensitivity to allergy, inactive life style and indoor environmental risk factors are the potential risk factors for asthma in adult Brahmin population in Delhi., India.
Conflict of interest and funding: Monika bhuker is highly thankful to University grant commison for its financial assistance.
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180: Prevalence and risk factors of COPD in a spanish population
Bruscas MJ, Naberan K, Lamban MT, Bello S.
SALUD, Spain
Aim: The objective of this study was to know the prevalence of COPD and observe the risk factors of developing COPD in Aragón (Spain).
Method: Based on a population of 1,300,000 persons, a random sample of 1185 individuals between 40 and 75 years was chosen. The selection was done proportionally in accordance with the health card records from the Heath Service. A spirometry with bronchodilator test was performed in all subjects and they answered several questionnaires: IPCRG diagnosis of asthma, IPAG for diagnosis of COPD, respiratory symptoms CECA, demographic variables and clinical history. The quality of life was measured in the COPD patients with the St. George Respiratory Questionnaire. The diagnosis of COPD was considered in accordance with the GOLD criteria (postbronchodilator FEV1/FVC ratio <0.7).
Results: We detected 123 patients with obstructive pattern, 10.4% (CI 9.8 to 11.0), 16.9% males and

5.7% women. Only 21.1% of COPD subjects had a previous diagnosis. Factors associated with COPD in logistic regression analysis were age over 70 years (OR 4,3; 1,9-10), male gender (OR 2,3; 1,4-3), smoking history of >15 packs/year (OR 4,7; 2,5-9) and lower educational level (OR 2,5; 0,8-8,1). The prevalence of respiratory symptoms among smokers and former smokers (n=688) was wheezing 36,7%, usually cough 16,2%, expectoration 16,1% and dyspnea after a flight of stairs 14,5%. Wheezing and cough increased in accordance with accumulated smoking ($p<0,05$). There was a direct relationship between worse quality of life and severity of COPD (p=0,011).
Conclusion: The underdiagnosis of COPD is a problem in primary care. We should pay more attention in older people, smokers, low educational level and symptoms.
Conflict of interest and funding: This study has been funded by a grant from Boehringer Ingelheim
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213: Study of parents of asthmatic children as diagnosis screening of asthma.
Rey-Pardo C, González-Troncoso E, Praena Crespo M
Research question: To verify that the study of parents of asthmatic children is a profitable tactic to improve the diagnosis of asthma in patients with previously undiagnosed respiratory symptoms.
Background: Asthma is a disease of familial aggregation. Study of parents of asthmatic children could be a useful strategy for screening diagnosis
Possible methodology: Study cohort, case-control; mixed. Study Population: children (n=967) and their parents of office pediatric at a basic health zone of Seville followed in the period 1990-2000. Selection of participants: Table of random numbers generated by computer. Sample size: 93 children, 82 fathers and 82 mothers. Study variables: a) dependents: baseline spirometry and bronchodilation test in children and their parents b) independent: Genre, age, somatometry, atopy, smoking. Statistical analysis: a) Mean and standard deviation for quantitative variables and proportions of them. b) bivariate analysis: Comparison of Means and Chi-square test for qualitative variables. Measurement tools: Medical history, symptoms, pulmonary function tests and Prick-test. Outcome Measures: number of newly diagnosed cases of asthma.
Questions to discuss: After the study, we found 10 fathers with obstructive pattern (4 of them reversible and 6 no reversible), and 12 mothers with reversible obstructive pattern on spirometry (9 reversible and 3 no reversible). The prevalence of obstructive respiratory disease before the study was 7% for fathers and 4.8% in mothers. After studying the prevalence changed to 19.5% in fathers and 19.5% in mothers at the studied group. 57.9% of children with persistent asthma had positive skin test. The association of having persistent asthma and atopy in the child reaches statistical significance (p = 0.004)
Lung function study of parents of children with asthma is a useful strategy to improve the diagnosis of asthma previously unrecognized
Conflict of interest and funding: We have no Conflict of interest
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215: Eleven years of postgraduate education in childhood asthma
Lora-Espinosa, A Praena-Crespo M. and “Grupo de Vías Respiratorias-AEPap”
Andalusian Health Service, Málaga, Spain
Brief outline of context: In Spain in 2000, the health care of patients with asthma was not incorporated yet into the service portfolio of primary care pediatricians (PAP), or defined its powers and diagnostic resources available in office.
Brief outline of what change you planned to make: Conduct postgraduate teaching by enhancing the ability of PAP through the knowledge, skills and attitude training in asthma
Assessment of existing situation and analysis of its causes:: In Spain the children with asthma were studied in hospital. The asthma care was not in the service portfolio of the PAP
Strategy for change:: The "Grupo de Vías Respiratorias de la AEP" taught 22 presential courses at different locations with 8980 doctor learners and 3 e-learning courses with 5225 doctor during 9

years
Teaching is directed and performed at the request of the PAP. Integrated management courses adolescent-child with asthma by workshops for 10 hours:
Workshop: Spirometry, Prick-test, Asthma Education.
Workshops: Critical reading literature, case reports, rational drug use.
Skills, attitudes and skills oriented citizen. Role-playing, multimedia. Organization of services and health area. Asthma education Individual and group.
The spread of the courses are made via the Internet at www.aepap.org/gvr, home page of "Grupo de Vías Respiratorias"
Accreditation by rating agencies with 8.7 Continuing Medical Education
Measurement of improvement: Adequacy of the prevalence of asthma and prescription asthma drugs
Effects of changes: 9 Regional Asthma Plans and indicators of quality of care established and enforceable.
Lessons learnt: Medical education provided by primary care physicians improve the training of their peers and the quality of services
Message for others: Peer training is a useful strategy to bring about changes and should be promoted
Conflict of interest and funding: The courses were funded by Phadia Diagnostics and Regional Health Services
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268: Asthma in competitive adolescent swimmers in Ireland
Coyne L, Guiney F, Holohan J
Research question: Investigation of asthma and allergic rhinitis in competitive adolescent swimmers in Ireland
Background: Typically swimming has been recommended for people with asthma due to warm humid environment of swimming pools. Recent studies have shown that up to 20% of endurance athletes, including swimmers, at the Olympic Games in 2008 had a diagnosis of asthma. In the 2000 Olympics the USA swim team coach reported that nearly 1 quarter of the team had some form of asthma.
Possible methodology: A questionnaire would be developed based on the ISAAC Questionnaire to investigate asthma and allergic rhinitis in a group of competitive adolescent swimmers in Ireland. It would be piloted at a gala swim meet with a view to be carried out at further scheduled events throughout the year. The questionnaire would investigate the prevalence of asthma and allergic rhinitis, asthma and allergic rhinitis symptoms and control, treatment regimes, steroid use and would investigate the group's knowledge of Exercise Induced Asthma. The study will focus on adolescent competitive swimmers. Individuals would be recruited at nationally scheduled gala swim meets following a pilot. The questionnaires would be anonymised. The Asthma Society of Ireland will provide sole funding for the study.
Questions to discuss: Can the collated information be used to gain a better understanding of asthma in competitive swimmers in Ireland?
Can the information be used to develop an asthma management guideline for healthcare professionals and swim coaches, and can that guideline be developed for international use?
Conflict of interest and funding: No conflict of interest is reported, the Asthma Society of Ireland will solely fund the study and dissemination of the data.
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269: Fluticasone/formoterol provides a more rapid bronchodilation than fluticasone/salmeterol over 12 weeks of treatment in patients with asthma
Aalbers R, Brusselle G, McIver T, Grothe B, Bodzenta-Lukaszyk A

Department of Pulmonary Diseases, Martini Hospital, Groningen, The Netherlands
Aim: Assess the onset of bronchodilation with fluticasone propionate/formoterol fumarate (fluticasone/formoterol) and fluticasone propionate/salmeterol xinafoate (fluticasone/salmeterol).
Method: This was a post-hoc analysis of data from an open-label study in which 202 adult patients with asthma were randomized to fluticasone/formoterol administered via pMDI (100/10 or 250/10 µg b.i.d.; N=101) or fluticasone/salmeterol, pMDI (100/50 or 250/50 µg b.i.d.; N=101) for 12 weeks. Forced expiratory volume in 1 second (FEV1) was measured at pre-dose and 5, 10, 30, 60, 90 and 120 min post dose on days 0 (baseline), 14, 42 and 84. Results are presented as least-squares mean percentage change from pre-dose, with least-squares mean between-treatment differences, for 5, 10, 30 and 120 min post dose on days 0 and 84.
Results: Baseline mean FEV1 was 2.1±0.6L (66.1±10.1% predicted) and 2.1±0.5L (68.6±9.2% predicted) in the fluticasone/formoterol and fluticasone/salmeterol groups, respectively. Fluticasone/formoterol consistently provided more rapid bronchodilation than fluticasone/salmeterol throughout the study. On day 0, improvements in FEV1 were larger with fluticasone/formoterol than fluticasone/salmeterol at 5 min (13.1% vs 6.6%; difference, 6.5%; p<0.001), 10 min (14.8% vs 9.4%; difference, 5.4%; p=0.002), 30 min (18.0% vs 12.4%; difference, 5.7%; p=0.001) and 120 min (19.7% vs 16.5%; difference, 3.2%; p=0.067) post dose. On day 84 there were greater improvements in FEV1 with fluticasone/formoterol than fluticasone/salmeterol at 5 min (5.4% vs 3.4%; difference, 2.0%; p=0.126), 10 min (8.4% vs 5.5%; difference 2.9%; p=0.022), 30 min (9.2% vs 5.6%; difference 3.6%; p=0.005) and 120 min (11.4% vs 8.5%; difference 2.8%; p=0.027) post dose.
Conclusion: Fluticasone/formoterol provides more rapid bronchodilation than fluticasone/salmeterol, and this effect was sustained over 12 weeks of treatment.
Conflict of interest and funding: A. Bodzenta-Lukaszyk has received speaker fees from: Novartis,Torrex Chiesi and HAL Allergy.
R. Aalbers has received honoraria from AstraZeneca, Chiesi and Mundipharma for advisory board meetings.
T. McIver and B. Grothe are employed by Mundipharma Research Limited. Writing assistance, supported by Mundipharma Research Limited, was provided by Oxford PharmaGenesis™ Ltd. The study was funded by MundipharmaResearch Limited.
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270: Evaluation of guideline structured asthma management in Primary Care: A nursing perspective

Guiney F, Forsythe R, Coyne L, Holohan J
Asthma Society of Ireland
Aim: Poor asthma control places a significant burden on patients, their families and the health care system. Sub-optimal asthma control can incur expensive emergency care, possible hospitalisation and premature deaths. To address this the Asthma Society of Ireland developed a guideline based theoretical and clinical programme.
Method: Primary health care professionals participated in modules addressing asthma management in addition to a clinical workshop. Five asthma nurse specialists were appointed to support practice nurses, specific areas being:

- Spirometry
- Inhaler technique
- Patient education
- Self care management

An online electronic patient record (EPR) was developed and installed in each practice. This template assisted in the capture of quantitative and qualitative data.
Results: In summary Nurses identified the following;

§ Structured guideline based care facilitated improved decision making and team work.
§ Improved patient care
§ Encouraged patient empowerment
§ Enabled protected time for patient education
§ Encouraged patients to self manage their asthma
§ Increased uptake of flu vaccine
§ Opportunity to support smoking cessation
§ EPR was time consuming
§ Level of spirometry skill varied, although many considered it an essential component.
§ Majority of patient management was performed by practice nurses
§ The lack of consistency in prescribing medication was noted
§ Poor utilisation of home monitoring devices

Conclusion: Practice nurses demonstrated they are committed to delivering a high standard of guideline structured asthma care. They identified protected time as a necessary component for the appropriate care and education of patients; recognising the importance of patient empowerment, compliance and control.

Conflict of interest and funding: The Asthma Society of Ireland does not report any conflict of interest and the project was funded solely by the Asthma Society of Ireland

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341: Exclusive Asthma Project for the Education Department in Dubai Health Authority (DHA)

Brereton J, Mahboub B, Ibrahim D
Dubai Health Authority

Aim: A twelve month asthma project for Dubai Health Authority, focus on the management of asthma in schools.

Method: In Dubai each school is allocated a school nurse aiming to introduce health education. Dubai is 80% expats, therefore asthma care to be reviewed in British, French, American, Indian, Asian and Arabic schools. The treatment of asthma in all of the schools revolves around the nebulizer. For this project we concentrated on the Dubai Health Authority schools. There are 150 schools with a population of 200,000 children. The education department allocated the nurse who was participating in the asthma programme to be dedicated for a twelve month period to review as many asthma children as she could. Due to time restraints for this project the focus was to remain for the diagnosis of asthma only and not allergy. It is believed many children are diagnosed with allergy when they actually have asthma, but parents in Dubai are reluctant to accept the diagnosis of asthma.

Results: Across the 150 schools 3,000 children were found to have a diagnosis of asthma and were collated onto an asthma register for the first time in each school. The next stage which is ongoing is for each child to be interviewed with the Asthma Control Test.

Conclusion: To develop asthma registers and introduce the Asthma Control Test with each child.

Conflict of interest and funding: GSK

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342: Exclusive Asthma Project for the Middle East: Asthma project over twelve months across the Middle East, aims and objectives of a proactive approach to the management of asthma care through training and up-skilling 160 health professionals.

Brereton J, Mahboub B, Ibrahim D
Dubai Health Authority

Aim: Set to influence evidence based medicine in line with GINA

Method: One study from across the UAE and Near Gulf focused on morbidity. A general apathy in believing a high morbidity of asthma by local doctors is not evidenced, however the study showed the opposite. E.g. in Dubai Health Authority there is a variety of asthma care, with very little

evidenced based medicine for asthma being practiced. The main line of asthma therapy offered by hospital emergency departments and primary healthcare is a short acting bronchodilator via a nebuliser. We therefore set to influence evidenced based medicine in line with GINA. Patients seen within primary and secondary care may live in local Bedouin camps, immigrant working camps, poor environmental apartment blocks to more westernized homes. Health professionals attended the Respiratory Education UK Diploma Programme.
Results: Evidenced practice has since been achieved by the programme. Dubai has seen the introduction of the first asthma specialist nurses within the UAE and Near Gulf. On World Asthma Day the doctors and nurses led many activities across Dubai promoting asthma awareness. This twelve month project has highlighted the further need to understand respiratory disease more.
Conclusion: Further evidenced based education is required.
Conflict of interest and funding: GSK
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Saturday 28 April 2012 (P8 Organisation of care)

128: An outcome evaluation of a local respiratory support service
Dale L, Brocklebank D
Worcester University
Aim: Domiciliary nocturnal non-invasive ventilation (NIV) for the management of chronic hypercapnic respiratory failure remains inconsistent and limited. This study tested the hypothesis that a local domiciliary nocturnal NIV for chronic hypercapnic respiratory failure patients was a worthwhile intervention, by reducing hospital admissions and changing daytime blood gases. The physiological impact on the patients and reduction in hospital admissions were audited before and after initiation of domiciliary nocturnal non-invasive ventilation.
Method: This was a retrospective service evaluation of 20 patients who had commenced domiciliary nocturnal NIV for longer than 4 weeks and continued for up to 3 years. Case note analysis of daytime capillary blood gases (CBGs) pre and post-commencement of domiciliary nocturnal NIV were included. Using the hospital Oasis system, in addition to exploration of hospital case notes, to determine reasons for and numbers of hospital admissions one year pre and post-commencement of domiciliary nocturnal NIV. An Encore Pro database was utilised to download the smartcard taken from the patients NIV machine.
Results: Domiciliary nocturnal NIV with mean inspiratory/expiratory pressures (IPAP/EPAP) of 21±2/9±2 cmH_2O and mean pressure support (PS) of 12±2 cmH_2O led to statistically significant improvements in daytime blood gases and hospitalisation rates. A statistically significant increase in daytime PaO_2 values $p<0.001$ and a decrease in daytime $PaCO_2$ values $p<0.001$ was observed following domiciliary nocturnal NIV. A significant reduction in hospital admissions for cardio respiratory conditions in the year following domiciliary nocturnal NIV $p<0.005$ was detected.
Conclusion: High intensity domiciliary nocturnal NIV (HI-NIV) improves daytime CBGs and reduces hospital admissions for a group of patients with chronic hypoventilation secondary to COPD, OHS ± OSA, OL and kyphoscoliosis. A small general hospital can provide a worthwhile long term domiciliary NIV service for local patients
Conflict of interest and funding: no funding
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159: The UK Primary Care Respiratory Quality Award
Small IR, Gruffydd-Jones K, Bryant T, Fletcher M
Primary Care Respiratory Society UK
Brief outline of context: UK Primary Care delivers a minimum standard of quality through its national outcomes framework.

Brief outline of what change you planned to make: Develop and implement a quality primary respiratory care award
Assessment of existing situation and analysis of its causes:: A multi-agency Quality Award Development Group formulated the standards, set down the framework for submission and assessment and tested the award in practice
Strategy for change:: Award content is as follows Module 1; Clinical • 1.1 The Practice demonstrates a Health Promotion policy to prevent respiratory disease. • 1.2 The practice has a system for early and accurate diagnosis of respiratory disease • 1.3 COPD and asthma patients are offered regular structured review. • 1.4 Practices have an effective system for the recognition, assessment and immediate management of patients with acute respiratory problems Module 2; Organisational • 2.1 Practices have access to, and can use effectively, equipment necessary to assess, diagnose, review and treat patients with respiratory conditions Module 3; Practice Team • 3.1 The Practice works in an effective, comprehensive multi-disciplinary way to meet the needs of respiratory patients, supporting staff to fulfill their role, working across organisational boundaries to benefit patients and staff • 3.2 People with respiratory disease should have access to an effective, coordinated service provided by appropriately skilled health care professionals
Measurement of improvement: The award has now been tested successfully
Effects of changes: Achieving award status has significantly benefitted practices and patients
Lessons learnt: The three components of the system (development, submission and assessment) are robust, achievable and reproducible.
Message for others: Practices achieving this standard provide a quality service, that is likely to provide care consistent with national and international objectives
Conflict of interest and funding: The award was developed in association with PCRS UK, Education for Health, Respiratory Education UK, Asthma UK, British Lung Foundation, British Thoracic Society, Royal College of General Practitioners, Association of Respiratory Nurse Specialists The Award is supported by project grants from Allen & Hanburys, the specialist respiratory division of GlaxoSmithKline UK Ltd, AstraZeneca UK Ltd, Boehringer Ingelheim Ltd / Pfizer Ltd, Chiesi Ltd, MSD UK Ltd, Napp Pharmaceuticals and Teva UK Limited
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200: Variation in availability of pulse oximetry in UK practice
Holmes S, McArthur R, Small I
Primary Care Respiratory Society UK
Aim: To determine the availability of pulse oximetry in primary care practices in the United Kingdom
Method: Despite widespread agreement that pulse oximetry is a useful clinical assessment tool within the UK there has been a variety of research showing variable access in primary care. More recently in Essex (ERS Abstract, 2011) in 60 practices 33% had no oximeter (20 practices). In July 2011 we provided an on-line survey for members of the Primary Care Respiratory Society to highlight whether they have access to pulse oximetry within their work environment.
Results: We had results from 322 practices. 98.1% of practices had a pulse oximeter (316). 70.4% of practices had easy access in their consulting rooms all the time with 5.3% not having easy access in their consulting room. Tis figure dropped when easy access all the time when on routine and urgent visits (62.8%) When asked about confidence of the team in use of pulse oximetry (n=321) 3.1% of responses indicated they were unsure how well the team were able to use oximetry – but 96.9% were assured that use was competent.
Conclusion: The up to date survey from PCRS members and their practices are much closer to the national guidelines and use than were found in the smaller survey in Essex. Most PCRS UK practices have easy access to pulse oximetry. It does indicate that it would be hard to justify not having access to pulse oximetry.
Conflict of interest and funding: This on line survey was funded by PCRS. Conflict of interest declarations for the three authors are declared as part of the PCRS charity.

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201: Availability and use of spirometry in PCRS member practices in UK general practice 2011

Holmes S, McArthur R, Small I
Primary Care Respiratory Society UK

Aim: Availability and use of spirometry in PCRS member practices in UK general practice 2010
Method: In July 2010 we surveyed our membership to establish use of spirometry in practice as well as training in undertaking of the procedure and reading of spirometry.
Results: We had results from 313 practices. 97.8% of practices had spirometry. Calibration usually took place according to manufacturers instructions (92.6%) though in 3.5% this did not happen and 3.9% of responders did not know. 60.6% had more than 5 years of experience in undertaking spirometry and 52.2% had more than 5 years experience interpreting. We found that 12.1% of people had neither training nor assessment of their competence in the last three years. The figure relating to interpretation rose to 16.2% who had not had training or assessment in the last three years.
Conclusion: Most practices have access to spirometry, and calibrate in accordance with the manufacturers instructions. The workforce in the majority of situations is experienced and has been trained though there is still room for improvement.
Conflict of interest and funding: Conflict of interest declarations are declared annually to PCRS =UK
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211: Using Cochrane reviews to support decision-making

Welsh EJ, Cates CJ, Hasan M, Li P
St George's University of London, London, UK

Aim: Results from clinical trials can appear impressive, but are results from a single trial enough to justify a change clinical practice? The Cochrane Collaboration supports the production and publication of systematic reviews of interventions ranging from drugs to education to physiotherapy. Systematic reviews summarise evidence from multiple clinical trials according to pre-specified methods and frequently incorporate meta-analysis. Cochrane Airways Group reviews cover lung and respiratory diseases such as asthma, COPD, bronchiectasis and idiopathic pulmonary fibrosis. Here we present the results of a review on asthma education delivered in the home and considers implementation in practice.
Method: We conducted a systemic review of randomised trials of asthma education delivered in the home to children, caregivers or both compared to a control group receiving either usual care or similar education in an alternate setting.
Results: We included evidence from 12 studies involving 2342 children. The studies were of good methodological quality and 11 were conducted in North America in urban or suburban settings in vulnerable populations. Trials differed in age of the children, severity of asthma and content of the educational interventions. These differences were too large to allow reliable interpretation of an overall average result.
Conclusion: There is inconsistent evidence for home-based asthma educational interventions. Although education remains a key component of managing asthma in children, advocated in guidelines, this review does not distinguish whether there is an important impact in delivering education in the home instead of more usual settings such as GP clinics or the ED.
Conflict of interest and funding: The Cochrane Airways Group is funded by the NIHR. This project was funded by the National Institute for Health Research. The views and opinions expressed therein are those of the authors and do not necessarily reflect those of the NIHR, NHS or the Department of Health.
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249: Analysis of dyspnea dealt with by a primary care emergency response unit in an urban area

Morán A, Dominguez I, Pousada M, Barchilón V, Pérez I, Fernández A.
Primary Care Urgency Units. Bahía de Cádiz-La Janda District, Cádiz, Spain.
Aim: Analyse patients with dyspnea in our environment: main diagnoses and socio-demographic profile.
Method: Descriptive transversal study. Revision of patients attended with dyspnea by outpatient primary care team, in 4 months in our city. Variables: age, sex, time of calling, diagnosis and referral.
Results: The profile of patients were: 51,5% men and 48,4% women. Age: 46,3% more than 80 years old; 70 to 80: 28,6%; 60 to 69: 10,9%; 50 to 59: 4,1%; 40 to 49: 2,08%; 15 to 39: 3,6%; and less than 15, 4,1%. Time-calling: From 8:00 to 15:00 hours: 34,3%; 15:00 to 00:00: 27%; 00:00 to 8:00: 38,5%. The diagnosis were: COPD exacerbation: 24,47%; acute heart failure: 18,22%; pulmonary aedema: 4,16%; high airway infection: 2,6%; acute bronchitis: 8,33%; pneumonia: 13,02%; asthma: 3,12%; anxiety: 12,5%; oncological causes: 5,2%; deceased: 1,56% ; other : 6,77%. The most common causes of dyspnea were: more than 60 years old: COPD-E (23,9%) and acute heart failure(18,2%) ; 15 to 40: anxiety (3,64%); and less than 15: asthma (2,6%). 38,02% were remained at home; 33,3% were transported to hospital in a conventional ambulance and 28,64% with a medical team.
Conclusion: Most common causes of dyspnea calls in primary care in our environment are COPD-E, acute heart failure and pneumonia. The profile of patient is a male or female with more than 65 years old who requires assistance at nights. The majority are referred to hospital. The majority of COPD patients are male, the majority of anxiety ones are female, and there is not a high differences between men and women with acute heart failure.
Conflict of interest and funding: None
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289: Algorithm for identification and review of patients on high dose inhaled corticosteroids
Gaduzo S, Wilson J
Research question: How do we identify patients in general practice on high dose ICS and review the appropriateness of their treatment?
Background: Quality & Outcomes Framework, NICE quality standards and treatment guidelines suggest regular review of patients with COPD and asthma. Recall of patients to be reviewed is not always pro-active or structured. Prioritising those on high dose ICS would help identify patients with the wrong diagnosis, inappropriate prescribing, (eg: ICS alone for COPD), and failure to step down treatment for asthma.
Possible methodology: An algorithm was developed and lists of Read codes applicable to data extraction from GP clinical computer record systems were applied to 4 arms: High dose ICS alone, in combination with long-acting beta-agonist, for asthma and COPD. This is being piloted at CMP and other practices in the locality.
Questions to discuss: Initial reports suggest it facilitates data extraction and prioritised patient recall. Is this applicable and useful on a larger scale? We think it will also help to reduce QOF exception rates.
Conflict of interest and funding: None
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291: Adoption of admission and discharge bundles for COPD patients
Gaduzo S, Roberts R, Fern K, Monkhouse R, Dev D
NHS Stockport
Brief outline of context: Discharge bundles have been shown to reduce re-admission rates. Admission and length of stay protocols are also being piloted. We set out to combine both bundles by consensus between all stakeholders, including patients and primary care
Brief outline of what change you planned to make: Stockport Integrated Respiratory Network has a core group consisting of clinicians and managers from primary and secondary care. We convened a larger group with representation from emergency department, acute medicine, respiratory

medicine, senior nurses from respiratory ward and community team, GPwSI, hospital management and primary care commissioners. The original protocols were reviewed and altered to make them locally relevant and implementable. We also consulted local Breathe Easy patient group and GPs at locality meeting.
Assessment of existing situation and analysis of its causes:: Stockport has above average length of stay. There is no set protocol for assessment of patients on arrival at hospital. There is poor understanding among GPs of secondary care processes.
Strategy for change:: Use of bundles commenced in November 2011
Measurement of improvement: Initially uptake of bundles, later we will measure effects on length of stay and re-admissions.
Effects of changes: We hope use of bundles will become the cultural norm, leading to improved patient outcomes
Lessons learnt: Existing bundles can be adapted for local use
Message for others: Work together and involve all stakeholders in development
Conflict of interest and funding: None
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293: Skimming stones model of clinical engagement
Gaduzo S, Roberts J, Williams J, Sud P
NHS Northwest
Brief outline of context: In 2010 DH national and SHA regional respiratory leads were appointed. Our survey of Northwest PCTs and hospital trusts highlighted variation in respiratory services provided, and arrangement for integrated working.
Brief outline of what change you planned to make: We aimed to improve services by local action planning
Assessment of existing situation and analysis of its causes:: Our survey found 30% never met and a further 25% only met when there was a crisis to manage. Our medical director contacted FTs and PCTs asking them to put together teams of clinicians and managers across primary and secondary care, to attend regional meetings and work on integration issues.
Strategy for change:: We organised a series of clinical best practice and networking meetings on respiratory care including pulmonary rehabilitation, early supported discharge, early diagnosis, admission avoidance, self-management, medicines management. Teams were sat together geographically, many were meeting for the first time. Keynote address was followed by discussions sharing best practice and workshops formulating action plans. We regularly followed these up, asking for progress reports. Teams were also encouraged to hold similar meetings in their locality, continuing to spreading innovative work down to individual practice or unit level.
Measurement of improvement: Our web-based community of practice has >260 members, including most attendees; it houses data, presentations, action plans, discussion forum
Effects of changes: Action plans have led to setting up of services where gaps were identified, piloting of admission and discharge bundles, local networks, reduced oxygen prescribing costs, publication of local work.
Lessons learnt: We call this “Skimming Stones” model of stakeholder engagement
Message for others: Multiple points of impact with serial action plans can lead to improved care pathways and patient care
Conflict of interest and funding: None
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295: Patient consultation in development of COPD self-management plan
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NHS Stockport
Brief outline of context: Various self-management action plans (SMP) are in use in UK. Stockport

community respiratory team use our own version of the PCRS SMP developed in Plymouth. Uptake and use outside our team is disappointing.
Brief outline of what change you planned to make: We wanted to involve patients in development of a new SMP acceptable in both primary and secondary settings.
Assessment of existing situation and analysis of its causes:: Comments from patients suggested it's too "wordy" and a simpler design would make it easier to use.
Strategy for change:: Patients consulted in Breathe Easy and pulmonary rehabilitation settings suggested use of the term "warning signs", and greater prominence of the traffic light action plan graphic. Primary and secondary care doctors and nurses were also consulted. A final version was agreed by consensus and produced with assistance from IT department.
Measurement of improvement: The final document was approved by all stakeholders, praised for its clarity and embraced enthusiastically. Pharmaceutical company sponsorship was obtained for a large print run, there's been high demand from both primary and secondary care.
Effects of changes: The Stockport SMP has been adopted by all parts of the local healthcare community as part of the integrated pathway. Three of the four GP localities have decided use of SMP will form part of local targets the new QIPS section of QOF.
Lessons learnt: Involvement of all stakeholders, including patients, proved very rewarding and greatly enhanced the final product.
Message for others: Development of patient resources should involve all stakeholders
Conflict of interest and funding: Chiesi pharmaceuticals paid for SMP printing
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309: Benefits of a multi-skilled, multi-professional team delivering care for patients with respiratory disease.
Furnival B, Williams J, Meek J
Respiratory Chartered Physiotherapist Clinical Lead Warrington and Halton Hospitals NHS Foundation Trust
Brief outline of context: A team of clinicians (physiotherapists & nurses) established to reduce hospital admissions for patients with exacerbations of COPD. It was the first team in the UK that assessed the patient at home. This approach was expanded to include patients with all respiratory diseases.
Brief outline of what change you planned to make: To develop a gold standard of respiratory care for admission avoidance, early supported discharge, pulmonary rehabilitation, oxygen service, non-invasive ventilation service, advising palliative care teams,clinics, utilising the same multi-disciplinary team.
Assessment of existing situation and analysis of its causes:: Existing service delivery relied on clinicians working independently. Absences meant services were cancelled, waiting lists grew, patients received a disjointed service. Peer review and bench marking was limited. A visit to Canada to research respiratory therapy practise acted as a catalyst to change.
Strategy for change:: Integrated in-service training. Shared clinical practice. Regular multi-disciplinary team meetings with consultant. Flexible Staff cover all clinical areas.
Measurement of improvement: Patient satisfaction questionnaires, higher number of patients seen in all areas with retention of staff, good feedback from users.
Effects of changes: Sharing of skills has improved the delivery of seamless episodes of care, services are never cancelled and Staff enjoy a wider variety of skills.
Lessons learnt: Inter-professional boundaries can be overcome.
Message for others: Integrated working improves the quality of patient care and expands the horizons of clinicians aspirations.
Conflict of interest and funding: None
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319: Audit of inhaler technique

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Aim: Inadequate inhaler technique in patients with chronic respiratory conditions is a common problem and can result in poor drug delivery. Many patients are not receiving inhaler technique instruction and many have not had their technique checked. Educating patients on inhaler technique has been shown to improve patients' technique and has consequently also improved symptom severity in some cases. This audit aimed to assess whether patients with chronic respiratory conditions have had their inhaler technique assessed when first prescribed their inhaler and in the last 12 months, and whether their inhaler technique is adequate.
Method: A questionnaire and assessment of inhaler techniques in patients on a hospital respiratory ward was performed on 31st October 2011.
Results: Overall, 50.3% of inhaler devices were demonstrated poorly. 50% of inhaler devices were not demonstrated to the patient when first prescribed, which is not compliant with the NICE COPD and BTS Asthma guidelines that specify that all patients prescribed inhalers should have inhaler technique demonstrated. Of these inhaler devices, 53.8% were demonstrated with poor technique. Similarly, 57.7% of inhaler devices had not been demonstrated to patients within the past 12 months, and 80% of these inhaler devices were demonstrated poorly, showing the need for regular inhaler technique counselling.
Conclusion: The results of this audit suggest a great need for tuition in inhaler technique and its regular assessment. Recommendations from this audit are for the hospital pharmacist to aim to assess all patients' inhaler technique on admission to the respiratory ward, and counsel if necessary. Inhaler technique will then be re-audited in three months time.
Conflict of interest and funding: None
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S25 Top four conference abstracts, Saturday 28 April 2012 14.30-15.30 in Pentland Suite

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119: Asthma Mortality in Australia in the 21st Century

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Aim: Previous Australian asthma mortality studies were undertaken between 1986 and 1997. As asthma mortality has declined and more effective medications are available, circumstances surrounding recent deaths remain unknown. In order to target effective interventions, we undertook a study to investigate reasons for asthma deaths between 2005 and 2011.
Method: We identified the number of deaths in each state and territory and age at the time of death. The National Coroners' Information System (NCIS) database was searched for the International Classification of Diseases (ICD-10) code for asthma as the underlying cause of death. Available coroners' findings, autopsy, toxicology and police reports were reviewed to ascertain if the death was attributable to asthma and whether the death was preventable.
Results: Examination of available data in those under 70 years identified risk factors associated with asthma death. These included physical barriers (rural and remote location, living in residential care), being socially disengaged (living alone, not employed, mental illness), smoking, drug and alcohol dependence, and delay in seeking help.
Conclusion: Further reductions in the number of asthma related deaths in Australia in those under 70 years of age will require health professionals working in primary care settings to develop initiatives to improve asthma related health literacy especially among those with mild or episodic asthma. At the community level, reforms are needed to address issues of inequity in health care

delivery to 'reach the un-reached' as well as awareness of the dangers associated with smoking, drug taking and excessive alcohol use.
Conflict of interest and funding: Helen Macpherson Grant from the Asthma Foundation of Victoria. No conflict of interest
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115: Change in lung function over time in male metropolitan fire-fighters and general population controls
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Aim: To compare changes in lung function over time between male metropolitan firefighters and general population controls, and to investigate associations between fire-fighters' use of respiratory protection devices and accelerated lung function decline.
Method: 3-year longitudinal comparison of FEV1 (forced expiratory volume in 1 second) and forced vital capacity (FVC) between 281 fire-fighters and 933 population controls from the North West Adelaide Health Study. Repeated measures and logistic regression models were used to compare course of FEV1 and FVC and risk of accelerated (>0.050 L/yer) FEV1 decline between the cohorts. Within the fire-fighter cohort, risk of accelerated FEV1 decline was compared between subgroups based on use of respiratory protection devices.
Results: Population controls showed very similar mean annual declines for FEV1 and FVC across age categories, whereas fire-fighters aged <45 years showed increasing values over time (p=0.005). Fire-fighters had a lower odds of accelerated FEV1 decline compared to controls (OR=0.60, 95%CI 0.44; 0.83), but fire-fighters who never or rarely used respiratory protection during fire knockdown had a higher odds of accelerated FEV1 decline compared to those who used it often or frequently (OR=2.20, 95%CI 1.02; 4.74).
Conclusion: Younger generations of fire-fighters showed an increase in lung function relative to their older colleagues, while population controls consistently showed decline of lung function across all ages. Fire-fighters who reported to never or rarely use their respiratory protection had an increased risk of accelerated FEV1 decline. This study further highlights the importance of consistent use of respiratory protection devices by fire-fighters and monitoring of their (respiratory) health.
Conflict of interest and funding: Conflict of interest: none. Funding: South Australian Metropolitan Fire Service and University of Adelaide
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131: Next of kin's experience of living with a patient suffering from COPD: two years after a nurse-led multidisciplinary programme of pulmonary rehabilitation in primary care
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Family Medicine Research Centre, Örebro University, Sweden.
Aim: To describe next of kin's experience of living with a patient suffering from COPD, two years after the latter's participation in a primary care nurse-led multidisciplinary rehabilitation programme.
Method: Descriptive, qualitative design as part of a longitudinal study comprising a nurse-led multidisciplinary programme for patients with COPD where next of kin were invited to one session. Semi-structured interviews were conducted with twenty next of kin and analysed by means of qualitative content analysis.
Results: One theme emerged: Life remains overshadowed by illness; and two sub-themes: Life has its positive sides and Living with a sense of vulnerability. Fluctuations between feelings of togetherness, one significant aspect of the positive side, and heavy burden which was related to the experienced vulnerability were caused by the patient's current condition. Next of kin have a heavy burden of responsibility; life was experienced as still overshadowed by illness, despite the nurse-led

multidisciplinary programme.
Conclusion: Next of kin have a heavy burden of responsibility; life was experienced as still overshadowed by illness, despite the nurse-led multidisciplinary programme. However, there were positive outcomes even two years after the programme, including better communication with a closer relationship and planning life together, although next of kin need more support.
Conflict of interest and funding: This research was funded by the Foundation of Maja Johansson and Maria Brantefors scholarship fund in Örebro University for developmental work in health- and medical service and the Research Committé of Örebro County Council.
There is no conflict of interest to declare.

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241: Improved asthma outcomes with FENO-guided anti-inflammatory treatment: A randomised controlled trial

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Aim: To examine the effects of anti-inflammatory treatment guided by fractional exhaled nitric oxide (F_ENO) on asthma-related quality of life, asthma control and exacerbation rate in adult patients with allergic asthma.
Method: This was a randomised controlled, multicentre study (17 sites). A total of 181 non-smoking participants (18-64 years) with confirmed perennial allergy and regular inhaled corticosteroid (ICS) treatment were randomly assigned to one of two treatment arms: a control group (n=88), where F_ENO was blinded for both patient and physician and the anti-inflammatory treatment adjusted according to routine clinical practice, and an active group (n=93), where the anti-inflammatory treatment was adjusted according to F_ENO. Participants were followed for one year (5 visits). F_ENO was measured and questionnaires on asthma-related quality of life (mini-AQLQ) and asthma control (6-item ACQ) were completed. All participants received a logbook in which they noted health care contacts and other asthma events between visits.
Results: The change in mini-AQLQ overall score over one year was not significantly different between the groups (p=0.20). However, the improvement in the symptom domain of the mini-AQLQ instrument was significantly larger in the F_ENO-guided group (p=0.041). In line with this, the ACQ score improved significantly more in the F_ENO-guided group vs. control group (p=0.045). A significantly lower cumulative incidence of moderate exacerbations was found in the F_ENO-guided group than in the control group (p=0.009), but no difference was found for severe exacerbations (p=0.73). Mean use of ICS over the study period was similar in the two groups (576 vs. 572 mg/daily budesonide equivalents, p=0.95).
Conclusion: Using F_ENO to guide anti-inflammatory treatment improved asthma outcomes in adults with atopic asthma without increasing overall ICS use.
Conflict of interest and funding: Kjell Alving is an associate and minority shareholder of Aerocrine AB. Jörgen Syk has received research support from Aerocrine AB. The study was primarily funded by the county council of Stockholm (PickUp). Support was also received from the Centre for Allergy Research at Karolinska Institutet, Aerocrine AB, MSD Sweden, Phadia AB, and Meda AB.
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