

OR-001

GENDER DIFFERENCES IN ASTHMA AND ALLERGIES IN RELATION TO SPORTS

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Aim: Asthma and allergic diseases are common among children and adolescents. Before puberty the prevalence of asthma is higher in boys than in girls. A gender switch occurs in adolescence, with adult females having a higher prevalence than males. **The aim** of the study was to investigate and compare sex-related differences according to symptoms and treatment of asthma, allergy and health among elite athletes and a reference group.

Methods: Adolescent elite swimmers in training (n=101), tennis players (n=86) and a reference group (n=1628) answered a questionnaire about respiratory symptoms, allergy, health behavior, psychosomatic symptoms, self-esteem and well-being. Atopy was assessed by skin prick tests and fractional exhaled Nitric Oxide (FeNO) measured. The athletes performed a mannitol provocation test and a sport-specific exercise provocation test. Mannitol positivity was defined as either direct FEV₁ PD15 (ordinary criteria) or in combination with b2-reversibility (15%) after challenge (extended criteria). A direct positive exercise test was defined as a drop in FEV₁ of 10% (ordinary criteria) or in combination with beta 2-reversibility (15%) after challenge (extended criteria).

Results: Asthma symptoms during the last 12 months were common in all the groups. The females in both the reference group (29.1%) and athlete group (56.4%) reported more asthma symptoms during the last 12 months than the males in each group (22.3% reference group, 40.2% athletes). At the same time there were no differences in physician-diagnosed asthma or in the treatment with inhaled corticosteroids. The female athletes were more often reversible after mannitol provocation, (47.4%) than the males (29.0%), and had more positive mannitol provocations, extended criteria (48.7% females, 35.8% males). The female swimmers were also more often positive in exercise provocation tests, both ordinary criteria (22.2%) and extended criteria (35.6%) than their male colleagues (7.7% and 15.1% respectively). The FeNO values were higher among the male athletes (p=0.021) but there was no difference in the frequency of positive skin prick tests.

Conclusion: We found a higher prevalence of asthma symptoms in the females, both in the reference group and among the female athletes. At the same time, frequency of doctor diagnosed asthma and the prescription of inhaled corticosteroids were the same in both genders. This could be in line with tendency of not being sufficiently aware of the asthma diagnose in females.

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OR-002

THE CONTRIBUTION OF HEALTH PROFESSIONALS IN LTOT AND NIV TO THE STABLE COPD

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Aim: The aim of the study is to determine the contribution of health professionals to the basic principles of monitoring of non-invasive ventilation (NIV) and Long-term oxygen treatment (LTOT) in patients with stable chronic obstructive pulmonary disease (COPD).

Methods: Extensive literature review was conducted and three electronic databases (PubMed, Scopus, Google Scholar) were searched for relevant articles. The keywords used for the study were: «oxygen therapy», «NIV», «COPD». The search was limited to articles published in the last decade.

Results: The rehabilitation of patients with LTOT increases patient survival rates, as it creates a positive effect on hemodynamic and hematological characteristics, improves lung mechanics, the mental status of the patient such as their ability to exercise and their quality of life by reducing anxiety and depression. A prerequisite for implementing oxygen is smoking cessation, which should be enforced as it is the only command that decelerates the progression of the disease. Vaccination for influenza is necessary on all stages of COPD severity.

Conclusion: The contribution of health professionals in pulmonary rehabilitation programs is multipurpose and includes exercise, patient education about the disease and psychological support. The surveillance program providing home care improves the conditions of use, and reduces the costs.

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OR-003

GOAL-SETTING INTERVENTION IN PATIENTS WITH ACTIVE ASTHMA – IS IT ACCEPTABLE? IS IT USEFUL?

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Aim: Supporting self-management behaviour is recommended guidance for people with asthma. Patient-centred methods that improve patient involvement, skills and self-efficacy are effective for enabling self-management¹. Such methods involve shared agenda setting, collaborative goal-setting and skill and confidence building to help achieve goals. This paper reports on the acceptability and perceived utility to patients and health professionals of a patient-centred, goal-setting intervention delivered in the context of a primary care asthma review consultation.

Methods: A qualitative study embedded within a two-armed cluster randomised controlled trial². The intervention involved completion of a goal-eliciting tool by patients prior to their asthma review, collaborative goal-setting during the review and action planning to facilitate goal-achievement. Ten practice nurses and 14 patients took part in semi-structured interviews exploring perceived usefulness and feasibility of the intervention. Patients were selected purposively based on age, gender, study arm, GP practice, and asthma severity to obtain maximum variation in views and experiences. Data were analysed using thematic analysis approach.

Results: Patients were positive about the intervention as reviews normally concentrated on physical check-ups and medication management with little discussion about everyday life and aspirations. Focussing on goals gave patients the chance to become active members of the healthcare team rather than passive recipients of instruction; care was seen to be more holistic and there was a perception of enhanced rapport with the nurse. However, nurses reported time constraints as a major barrier to successful intervention implementation and admitted screening-out patient goals they believed unrelated to asthma.

Conclusion: The goal-eliciting tool gave people with asthma an opportunity to raise issues that may not otherwise have been addressed. However, delivery of this intervention in the context of a routine asthma review is problematic due to consultation constraints. Despite perceived value there are practical difficulties for implementing patient-centred self-management support.

References:

¹De Silva, D (2011) Evidence: Helping people help themselves. The Health Foundation, London.

²Hoskins G, Abhyankar P, Duncan E, Donnan P, Sheikh A, Pinnock H, van der Pol M, Taylor A, Williams B 2013. Goal-setting intervention in patients with active asthma: protocol for a pilot cluster randomised controlled trial. *Trials* **14**:289

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OR-004

IMPACT OF MULTIMORBIDITY IN COPD PATIENT

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Research question: is multimorbidity a barrier for primary care management of COPD according to french guidelines?

Background: COPD patients

are often suffering from multiple pathologies which makes their support complex

are often suffering from multiple pathologies which makes their management complex. There are multiple guidelines to follow for them. Our study addresses this issue by describing how multimorbidity can affect COPD management.

Possible methodology: Audit study based on COPD patients records extracted from electronic health record systems of a representative sample of French general practitioners will be conducted. We will compare the real management to french COPD management guidelines which points are lacking. Multimorbidity (number and type of pathology) and number of guideline to follow is identified for each patient. Difficulties to follow COPD management guideline are categorized by questionnaire.

Questions to discuss: How identify the real impact of multimorbidity?

How quantify this impact?

is it the right method to use ?

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Disclosure of Interest: None Declared

OR-005

ASTHMA SYMPTOMS, MANNITOL REACTIVITY AND EXERCISE-INDUCED ASTHMA IN YOUNG ATHLETES, SWIMMERS VERSUS TENNIS-PLAYERS.

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Aim: Asthma and allergies are common diseases in adolescents and the risk increases with physical activity in any sport on the elite level. **The aim** of the study was to investigate and compare the prevalence of asthma and allergy among elite and aspiring elite swimmers and tennis players and to compare the results by two different provocation tests, mannitol and exercise.

Methods: 101 adolescent swimmers and 86 tennis players answered a questionnaire about respiratory symptoms and allergy. Atopy was assessed by skin prick test and fractional exhaled Nitric Oxide (FeNO) measured. Mannitol provocation and sport specific exercise challenge were performed. Mannitol positivity was defined as either direct FEV₁ PD15 (ordinary criteria) and/or an increase in FEV₁ of (15%) with β_2 -agonist after the provocation, (extended criteria). A direct positive exercise test was defined as a drop in FEV₁ of 10% (ordinary criteria) and/or an increase in FEV₁ of (15%) with β_2 -agonist after the provocation, (extended criteria). Clara Cell protein (CC16), 11b-prostaglandin (11- β PGF_{2a}) and leukotriene E₄ (LTE₄) were measured in urine before and after challenge.

Results: Asthma symptoms were common in both groups during the last 12 months. The swimmers had a higher frequency of exercise-induced symptoms (77.2% resp. 50.0%) and current asthma (56.4% resp. 37.5%) compared to the tennis players but the frequency of allergic asthma (16.8% resp. 10.7%) was similar in the two groups. The frequency of positive mannitol provocation test was higher among the swimmers both with ordinary criteria (24.8% resp. 6.3%) and extended criteria (42.6 resp. 16.7%) while the number of positive exercise tests did not differ between groups. After exercise challenge test there was an elevation of CC16 levels in both groups and the increase was significantly higher among the tennis players. A corresponding increase was not found after the mannitol provocation. There were no differences in frequency of atopy, rhinitis or FeNO between the groups.

Conclusion: We found a high prevalence of asthma among elite swimmers and tennis players. The swimmers had a higher frequency of current asthma and a higher rate of positive mannitol provocation tests. This may indicate an unfavorable exercise environment for the swimmers where trichloramine might play a role.

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OR-006

SAFETY AND EFFICACY OF TIOTROPIUM RESPIMAT VERSUS HANDIHALER IN COPD: THE TIOSPIR TRIAL

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Aim: Tiotropium Respimat 5 µg and HandiHaler 18 µg are equally effective as therapy for chronic obstructive pulmonary disease (COPD). While tiotropium HandiHaler showed lower mortality than placebo, pooled data from Tiotropium Respimat 5 µg registration studies showed a higher number of deaths compared to placebo, particularly among patients with history of cardiac arrhythmia. The aim of the TIOtropium Safety and Performance In Respimat (TIOSPIR) trial was to compare the safety and efficacy of tiotropium Respimat (5 and 2.5 µg) with tiotropium HandiHaler 18 µg.

Methods: TIOSPIR was a large-scale, 2-3 year, randomized, double-blind trial that compared safety and efficacy of once-daily Respimat 5 and 2.5 µg with HandiHaler 18 µg. Primary end points were time to death (noninferiority, Respimat 5 µg or 2.5 µg vs. HandiHaler) and time to first COPD exacerbation (superiority, Respimat 5 µg vs. HandiHaler).

Cardiovascular safety, including in patients with stable cardiac disease, was also assessed.

Results: Overall, 17,135 patients were treated. Across groups, there was similar time to death (Respimat 5 µg versus HandiHaler: hazard ratio [HR], 0.96; 95% confidence interval [CI], 0.84-1.09; Respimat 2.5 µg versus HandiHaler: HR, 1.00; 95% CI, 0.87-1.14) and time to first exacerbation (Respimat 5 µg versus HandiHaler: HR, 0.98; 95% CI, 0.93-1.03). Noninferiority of Respimat 5 and 2.5 µg to HandiHaler 18 µg in time to death was shown, while superiority of Respimat 5 µg to HandiHaler 18 µg in time to first COPD exacerbation was not shown. Overall, causes of death and incidences of major cardiovascular adverse events were similar between groups.

Conclusion: Contrary to initial safety concerns with tiotropium Respimat, the results from this trial showed that tiotropium Respimat 5 and 2.5 µg and tiotropium HandiHaler 18 µg have similar safety and exacerbation efficacy profiles in patients with COPD.

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OR-007

USING THE COPD DIAGNOSTIC QUESTIONNAIRE (CDQ) TO SELECT AT RISK PATIENTS FOR SPIROMETRY: AN EVALUATION IN AUSTRALIAN GENERAL PRACTICE

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Aim: The gold standard for diagnosis of chronic obstructive pulmonary disease (COPD) is post bronchodilator spirometry. Barriers to its use exist in primary care such as lack of expertise in performing spirometry and the time consuming nature of pre and post bronchodilator spirometry. Using the COPD Diagnostic questionnaire (CDQ) as a selection tool for spirometry could potentially improve the efficiency and accuracy of COPD diagnosis in at-risk patients. In its original form the CDQ had two cut points, creating an intermediate group where the decision to perform spirometry was not clear cut. Our aim was to identify an optimal single cut point for the CDQ that divides primary care patients into low or high likelihood of COPD, with only the high likelihood patient progressing to spirometry

Methods: Former or current smokers aged 40 to 85 years with no prior COPD diagnosis were invited to a case finding appointment with the practice nurse (PN) from 36 general practices in Sydney, Australia. The CDQ was collected and pre and post bronchodilator spirometry was performed. Cases where complete CDQ data was present and the spirometry met quality standards were analysed. Cut points were selected from a receiver operating characteristic (ROC) curve comparing CDQ score with COPD diagnosis.

Results: Of 1631 patients who attended case finding recruitment, 1054 (65%) could be analysed. The area under the ROC curve was 0.713. A CDQ cut-point of 14.5, corresponded to a sensitivity of 91%, specificity 35%, negative predictive value 96% and 31% of patients scoring below this cut point. A cut-point value of 19.5 had the optimal combination of sensitivity (63%) and specificity (70%) with two-thirds of patients scoring below this cut point.

Conclusion: The CDQ can be used as a selection tool for patients at risk of COPD to undergo further spirometry using a single cut point. We suggest consideration of two possible cut points. A cut point of 14.5 has a high sensitivity and negative predictive value thus including more potential COPD cases but with a higher rate of false positives and a reduction of the number of patient requiring spirometry by only 30%. The higher cut point of 19.5 excludes a higher proportion of patients from undergoing spirometry but with the trade-off of more false negatives. The pros and cons of this approach and the proposed cut points warrants debate in the primary care respiratory community.

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OR-008

ETHNICITY AND COPD PREVALENCE IN SOUTH-EAST LONDON – IS COPD LESS COMMON IN THE BLACK POPULATION?

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Aim: COPD is an important health burden in the UK, costing the NHS over £800m annually. Evidence from previous studies suggests a lower prevalence of COPD in Black populations in London. Ethnic differences in the prevalence of COPD have been poorly studied. We aimed to explore differences in COPD prevalence between ethnic groups in an inner-city London population.

Methods: Retrospective observational study using routinely collected primary care data from Lambeth DataNet in south London. Lambeth DataNet holds data on more than 360,000 patients in 51 general practices. Recording of ethnicity data is complete in >80% of patients. Prevalence of COPD in Black and White populations was compared, controlling at patient level for smoking, age, sex, deprivation and practice clustering. Data on spirometry and drug use has been obtained but was obtained too late to include in the abstract. It will be included in the presentation.

Results: Routine data were available on 366,322 patients. 3376 (0.92%) had a recorded diagnosis of COPD. 115,871 (31.6%) were smokers or ex-smokers, 177,522 (48.5%) were never-smokers. Smoking data were missing on 72,929 (19.9%). 171,740 (46.9%) were White, 72,362 (19.8%) Black or Black British, 17,919 (4.9%) Asian, 30,611 (8.4%) other with 73,690 (20.1%) unknown.

Prevalence of COPD was 1.46% in the White population and 0.54% in the Black population. Black people were significantly less likely to have a diagnosis of COPD than White people (odds ratio 0.47; 95% confidence interval 0.42 to 0.57) when adjusting for age, sex, smoking, deprivation, and practice clustering. Differences in treatment and use of spirometry by ethnic group will be reported at conference.

Conclusion: Black people in south London were less than half as likely as White people to be diagnosed with COPD when controlling for age, sex, smoking, deprivation, and practice clustering. These findings are unlikely to be significantly influenced by spirometry results and treatment factors which will be included in the analysis at conference. If we can show that Black people receive medical care that is comparable to White people in this population, then the factors responsible for these differences in prevalence of COPD between Black and White people in London may be explained by differences in the impact of smoking on these two ethnic groups.

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OR-009

PELICAN: A RANDOMIZED CONTROLLED TRIAL IN DUTCH GENERAL PRACTICES TO ASSESS THE EFFECTIVENESS OF INDIVIDUALISED SELF-MANAGEMENT FOR PAEDIATRIC ASTHMA

We do not have consent to publish this abstract on-line

OR-010

DEVELOPMENT OF A SYMPTOM-BASED QUESTIONNAIRE TO HELP DIFFERENTIATE BETWEEN ASTHMA AND COPD IN PRIMARY CARE: THE ACIRA STUDY.

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Aim: Asthma and COPD remain underdiagnosed and wrongly diagnosed in primary care mainly because of the overlap of clinical presentation with each other and with other respiratory disorders, and the under use of Spirometry. The Asthma and COPD differentiation in Respiratory symptom Analysis (ACIRA) study is aimed at developing a set of symptom-based questions that will offer maximum sensitivity and specificity to help differentiate between asthma and COPD for primary care physicians.

Methods: Based on previously published studies, 500 patients and relatives visiting the Respiratory Clinic at Chest Research Foundation are being administered a set of questions that capture symptoms and risk factors related to Asthma and COPD. They also undergo Spirometry and Body Plethysmography to obtain physiological measurements of airway obstruction. Qualified and experienced physicians evaluate patients using history, clinical examination and physiological measurements and offer a physician- based diagnosis, which form the gold standard diagnosis for Asthma and COPD. The symptoms are correlated with physician diagnosis and those questions having maximum sensitivity and specificity to differentiate between Asthma and COPD will be selected. So far, a total of 77 subjects have been investigated and we present here the preliminary results.

Results: Among 77 patients who visited our respiratory clinic 32 were labeled to have Asthma, 23 to have COPD, 7 had respiratory symptoms but no Asthma and COPD and 15 were labeled as healthy.

Symptoms of cough with sputum production, cough > 3 months in a year, presence of phlegm in absence of cold, phlegm >3months per year, worsening breathlessness were strongly indicative of COPD (COPD vs Asthma: 95% vs 59.1%, $p=0.007$; 90% vs 54.5%, $p=0.017$; 87% vs 46.9%, $p=0.004$; 75% vs 35.7%, $p=0.035$; 91.3% vs 41.4%, $p=0.00$; respectively).

Symptoms of cough and wheeze when exposed to cold air, presence of phlegm in absence of cold which is difficult to bring up, wheezing in chest in last 12 months, intermittent symptoms were strongly indicative of Asthma. (Asthma vs COPD: 59.10% vs 25%, $p=0.033$; 80% vs 45%, $p=0.046$; 75% vs 47.80%, $p=0.05$; 87.50% vs 13%, $p=0.000$; respectively).

Sensitivity and specificity of symptom-based questions could not be established presently due to small sample size. However, the study is ongoing and we will get more reliable observations as more subjects will be recruited.

Conclusion: In this preliminary analysis, we could identify a set of 5 questions that were strongly associated with COPD, and a set of 4 questions that were strongly associated with Asthma. However as more subjects will get recruited in our study we will be able to make definitive conclusions.

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OR-011

OSTEOPOROSIS PREVENTION IN INHALED CORTICO-STEROID USERS

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Aim: The use of inhaled cortico-steroids(ICS) is the standard maintenance therapy in the management of asthma and moderate to severe COPD. It is well recognised that SYSTEMIC cortico-steroid therapy is a risk factor for osteoporosis, however, there is also a dose related increase in risk of fracture with ICS use and an inverse relationship between bone mineral density and duration and cumulative dose of ICS. Little is known of the prevalence of levels of risk in patients using ICS and of appropriate osteoporosis prophylaxis treatment with calcium and vitamin D. We aim to describe the prevalence of risk and prophylaxis in Alberta.

Methods: Patients who filled an ICS prescription at selected community pharmacies across the province of Alberta were recruited by pharmacy students from the University of Alberta. The students administered a questionnaire to determine the extent of osteoporosis prophylaxis and treatment they were receiving and the appropriateness of Bone Mineral Density(BMD) testing performed.

Results: A total of 255 patients from 12 different community pharmacies across Alberta were included. The overall average age of patients was 60 years +- 17 yrs with 65% female. There were 28%, 51%, and 21% of patients on low medium and high dose ICS respectively. Only 29% of patients are currently receiving adequate intake of both calcium and vitamin D for prophylaxis or treatment of osteoporosis. The proportion of patients who received proper osteoporosis prophylaxis or were being treated were 28%, 30%, and 26% for low ,medium and high ICS dose respectively. There were 32% of patients who qualified for an initial Bone Mineral Density examination (BMD) and 44% of these patients received a BMD, 89%then received appropriate follow-up.

Conclusion: Less than 29% of patients on ICS received adequate osteoporosis prophylaxis or treatment regardless of ICS dose. Only 61% of qualified patients received an initial BMD test. This study identifies a major care gap in osteoporosis prevention or treatment in patients receiving long-term ICS.

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Disclosure of Interest: None Declared

OR-012

DIAGNOSTIC MODEL OF CLINICAL SYMPTOMS AND FENO TO PREDICT THE PROBABILITY OF SUFFERING FROM ASTHMA

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Aim: The positive predictive values (PPV) of diagnostic tests are often too low, when the prevalence of a disease is low. This might also be true FENO measurement when used for patients suspected to suffer from asthma in primary care. Fractionated exhaled nitric oxide (FENO) is elevated in eosinophilic but not in non-eosinophilic (e.g., neutrophilic) asthma. The aim was to develop a clinical prediction rule with a combination of clinical symptoms and FENO results to enhance the diagnostic information.

Methods: Patients from two diagnostic studies with homogeneous information about clinical symptoms, one in general practice (n=160) and one in private practice of pneumologists (n=400), were pooled. The independent diagnostic contributions of clinical symptoms to the prediction of asthma were assessed using multiple logistic regression analysis. A final combination model was established using forward and backward variable selection with $p > 0.1$ for exclusion. A calculator was developed which allows an individual determination of the asthma risk.

Results: Wheezing, allergic rhinitis, and previous successful medication use had the best predictive power. Coughing and frequent respiratory infections were negatively associated with asthma. PPV was 74% when FENO was 45 part per billion (ppb) in patients suffering from wheezing and allergic rhinitis. PPV was 81% when FENO was 65ppb. PPV was 20% when FENO was 16ppb in patients with frequent respiratory infections.

Conclusion: The diagnostic gap related to non-eosinophilic asthma limits the diagnostic value of FENO measurement. A combination of information from medical history and FENO might overcome this barrier as it alleviates ruling in the diagnosis of asthma. The calculator allows determining the individual probability to suffer from asthma.

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Disclosure of Interest: None Declared

OR-013

LUNG CANCER, SMOKING AND COPD: TOWARDS TO BUILDING RESEARCH CAPACITY.

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Research question: Is there a significant relation of lung cancer (LC) and smoking in Greece? Main objectives are to explore the lung cancer incidence, to detect the effects of smoking on LC and other health outcomes and cancers, to explore the role of the co-existing *chronic obstructive pulmonary disease* (COPD). To what extent geography and socio-cultural factors have an impact on LC incidence?

Background: Greece lacks of national systematic records of lung cancer (LC), smoking and COPD, despite the high prevalence of smoking. The Cancer Registry of Crete (CRC) aims to report on cancer mortality or morbidity and monitor the disease so to suggest reliable preventive and management measures. Currently, it introduces a proposal for new research framework for cancer statistics.

Possible methodology: A prospective study of lung cancer patients in the region of Crete is suggested. Geographic Information Systems (GIS) technology and visual basic (programming language) will be used to construct a digital cancer monitoring system (CMS). The CMS will record all types of cancer (morbidity and mortality data) with focus on lung cancer, according to the ICD10 Information about the patient demographics, clinical status and history (co morbidities), family medical history and smoking) will be recorded. Maps and other results will be exported by applying spatio-temporal analysis and prediction models.

Questions to discuss: Such CMS could offer both monitoring and evaluation of lung and other cancer data as well as their correlation with smoking and COPD. Does LC differ among place of residence, time and socio-economic status? Does smoking affect LC patients? **Which is the role of** COPD in LC morbidity and mortality? In what way prediction models would help in patients management and future research? How and to what extent this **project** could be used by policy makers ? Which are the barriers and the strengths of such a CMS?

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Disclosure of Interest: None Declared

OR-014

ALLERGIC RHINITIS MEDICATION CO-PRESCRIBING BEHAVIOUR OF UK GENERAL PRACTITIONERS: A PROXY MARKER OF UNMET MEDICAL NEED

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Aim: To quantify the unmet medical need in seasonal AR (SAR) and perennial AR (PAR) using co-prescribing behaviour of UK GPs during 2 pollen seasons as a proxy measure.

Methods: This was a retrospective observational study conducted with data from the Optimum Patient Care Research Database. Diagnoses and prescriptions data for the 2009 and 2010 pollen seasons (1st March to 31st Aug) were assessed for patients with a recorded AR diagnosis who took AR therapy during the study period. Those with SAR had no recorded AR treatment in the six months preceding the first prescription of the study period. Those with PAR suffered from AR outside of the pollen season as indicated by at least one AR therapy prescription in the six months preceding the first prescription of the study period and also had a seasonal exacerbation.

Results: The % of multiple therapy prescriptions increased over both seasons in both SAR and PAR patients. Some 33% of SAR patients started the season on multiple therapy, rising to 45% by season end. A greater shift was seen in PAR patients, starting at 23%, and increasing to over 50% by season end. The percentage of PAR patients receiving dual therapy doubled, and the proportion who received triple therapy tripled over the season. Of patients with a single first prescription, over 20% of SAR patients and over 40% of PAR patients needed an additional GP visit for an add-on prescription. For these patients anti-histamine + intranasal steroid was the most common combination ($\approx 37\%$ of SAR and PAR patients). Adding eye drops to mono- and dual-therapies was also a popular prescription choice for mono-therapy failures ($\approx 42\%$ of SAR patients; $\approx 30\%$ PAR patients).

Conclusion: UK GPs commonly prescribe multiple therapies as the first script of the season for both PAR and SAR patients, with co-prescription becoming more common as the season progresses. 1 in every 5 SAR patients and almost 1 in every 2 PAR patients originally prescribed a single therapy required an additional GP visit for therapy add-on. These results indicate that current therapy options provide insufficient symptom relief for AR patients. There is a clinical need for a more efficient therapy.

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OR-015

PREVALENCE OF COPD IN A RURAL AREA OF UGANDA

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Aim: To collect data on prevalence of COPD and related risk factors as tobacco smoke and biomass fuel use of a rural area in Uganda.

Methods: Population-based cross-sectional epidemiological survey of 588 randomly selected adults above the age of 30. Trained local healthcare workers used validated questionnaires, and performed pre- and post-bronchodilator spirometry in the villages. The lower limit of normal threshold, i.e. subjects below the fifth percentile of the predicted FEV₁/FVC ratio, was used as defining criterion of COPD.

Results: The study population had a mean age of 45 (SD \pm 13.7) with 50.5% women; 93% of subjects were exposed to indoor biomass smoke (men: 91%, mean 3.1 hours/day; women: 95%, mean 5.2 hours/day). Kerosene lamps were used by 94% of subjects. The prevalence of COPD was 16.2% (53% women). Prevalence was highest in age group 30-39 years: 38% of men and 40% of women.

In the COPD group, many young men smoked: 44% current smokers (mean age 41) and 24% former smokers (mean age 48); 8% women smoked (mean age 53), 18% were former smokers (mean age 63). Total CCQ was 0.81 (SD \pm 0.78) and MRC was 1.33 (SD \pm 0.65); 30% had an exacerbation last 12 months (p=0.001). More than 80% used an open fire for cooking in a separate building.

In multiple regression analyses, only a few factors were found to be associated with COPD: wheeze OR 2.19 (95%CI: 1.09-4.37; p=0.026), cough OR 1.64 (95%CI: 0.96-2.78; p=0.068), heart failure OR 2.53 (95%CI: 0.99-6.50; p=0.054), current smoker OR 1.65 (95%CI: 0.95-2.88; p=0.078), and former smoker OR 1.93 (95%CI: 1.05-3.52; p=0.033).

Conclusion: In Uganda, the prevalence of COPD is high, especially in the lower age groups. In addition to a high smoking prevalence in young men, the large majority of the community is exposed to biomass fuel smoke. With a life expectancy of 52 years, COPD represents a major threat to men and women of all ages in rural areas of Uganda.

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OR-016

SHOULD WE EMPHASIZE CHEST FINDINGS IN THE EARLY DIAGNOSIS OF COPD?

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Aim: Chest examination, including percussion and auscultation, is frequently done in patients with respiratory symptoms or as part of routine medical assessment, and chest signs are frequently recorded. Although proven to be associated with bronchial obstruction, chest signs are not today listed among cues that should prompt spirometry in early diagnosis of COPD in established guidelines. We aimed to explore how chest findings add to respiratory symptoms and a history of smoking in the diagnosis of COPD.

Methods: In a cross-sectional study, patients aged 40 years or older, previously diagnosed with either asthma or COPD in primary care, answered questionnaires and underwent physical chest examination and spirometry. Test characteristics of chest signs in the diagnosis of COPD ($FEV_1/FVC < 0.7$) were evaluated, and added value to established cues: information on smoking and shortness of breath, was evaluated by multivariable logistic regression and ROC curve analysis.

Results: Among the 375 patients included, 39.7 % had $FEV_1/FVC < 0.7$. Hyperresonance to percussion was the strongest predictor of COPD with a sensitivity of 20.8, a specificity of 97.8, and Likelihood Ratio of 9.5. In multivariate logistic regression, where pack-years, shortness of breath and chest findings were among the explanatory variables, three physical chest findings were independent predictors of COPD. Hyperresonance to percussion yielded the highest odds ratio (OR 6.7), followed by diminished breath sounds (OR 5.0) and wheezes (OR 2.3). These three chest signs also gave significant diagnostic information when added to shortness of breath and pack-years in ROC curve analysis.

Conclusion: We found that chest signs may add to respiratory symptoms and a history of smoking in the diagnosis of COPD, and we conclude that chest signs should be reinstated as cues to early diagnosis of COPD in patients 40 years or older.

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OR-018

OPENING UP THE SILENCE: A QUALITATIVE STUDY OF NEED IN PEOPLE WITH SEVERE COPD

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Aim: The concept of healthcare need is complex and multi-faceted. Agreed definitions are lacking. Research suggests people with severe Chronic Obstructive Pulmonary Disease (COPD) have a range of unmet needs, but are a 'silent' group.

Aim To broaden understanding of the concept of need in this group

Methods: As part of the HELP-COPD pilot study, we recruited people with severe COPD, following admission to 2 hospitals in Scotland. Evaluation consisted of documentary analysis of patient-held action plans, completed following discussion at home with a respiratory nurse, and a series of in-depth qualitative interviews with a subsample of the patients and their family and professional carers. Interviews were recorded, fully transcribed and entered into NVivo for thematic analysis using Bradshaw's classification of felt, expressed, normative and comparative need.

Results: 23 people received the intervention and completed an action plan. 14 patients, 3 carers and 28 professionals provided 41 interviews. Some 'normative' needs were identified by professionals, and some practical issues were addressed during routine discharge planning. Although other needs (such as problems around physical symptoms and limitations, activities of daily living, social and financial concerns and existential issues) were 'felt' by patients and family carers they were articulated in response to direct questioning rather than actively 'expressed'. Patients did not necessarily wish any action to address the problems, and preferred to accept care from family members rather than from formal agencies. Many spoke of the over-arching importance to them of retaining their sense of independence and autonomy, considering themselves as ageing rather than ill. In the event, few needs were identified by our intervention and few actions planned.

Conclusion: The data suggest that the participants' main need was not to be seen as needy. 'Normative' needs as perceived by the professional may not match patients' own perceptions, and traditional models of health need assessment will fail to unlock the silence of this group. Approaches that enable a sense of independence, and legitimise and enable patients and their families to 'express' their 'felt' needs may be more likely to succeed.

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INAPPROPRIATE PRESCRIPTIONS FOLLOWING INITIAL COPD DIAGNOSIS

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Aim: The GOLD strategy recommends bronchodilator therapy as first-line treatment in COPD, whilst previous evidence suggests an overusage of inhaled corticosteroids (ICS) as well as triple therapy i.e. ICS + long-acting β_2 -agonist (LABA) + long-acting muscarinic antagonist (LAMA). The aim of the current study was to investigate the pattern of initial prescriptions, in particular of LABA, LAMA and ICS for COPD therapy.

Methods: This real-life study used the Optimum Patient Care Research Database (OPCRD), and investigated the therapy prescribed at date of diagnosis or preceding year for COPD. Patients ≥ 40 years of age and diagnosed since 1997 with 1 year of data pre and 2 years of data post diagnosis and spirometry data supportive of COPD. GOLD groups A–D were categorized according to FEV₁% predicted, modified Medical Research Council (mMRC) dyspnea score and severe exacerbations recorded 1 year prior to entry. Patients included in the study received any of the following medications at the date of their initial COPD diagnosis: ICS, ICS + LABA, ICS + LAMA, ICS + LABA + LAMA, LABA, LAMA, LABA + LAMA, SABA, SAMA, SABA + SAMA, none or some other therapies.

Results: Of 16185 patients analysed, 74.7% were inappropriately prescribed at their initial COPD diagnosis. 18.5% were prescribed ICS monotherapy in all GOLD patients. A total of 22.3% of Group A patients and 24.0% of Group B patients were treated with dual or triple combination of ICS and bronchodilator, while only 3.87% of Group B patients were treated with one or two long-acting bronchodilators (Table).

Initial therapy	GOLD group n (%)			
	A (N = 6390)	B (N = 3900)	C (N = 2981)	D (N = 2914)
ICS	1155 (18.1)	757 (19.4)	550 (18.5)	536 (18.4)
ICS+LABA	1214 (19.0)	800 (20.5)	823 (27.6)*	853 (29.3)*
ICS+LAMA	60 (0.9)	31 (0.8)	42 (1.4)*	29 (1.0)*
ICS+LABA+LAMA	154 (2.4)	104 (2.7)	145 (4.9)	153 (5.3)*
LABA	56 (0.9)**	70 (1.8)*	41 (1.4)	58 (2.0)
LAMA	164 (2.6)**	77 (2.0)*	82 (2.8)*	59 (2.0)*
LABA+LAMA	8 (0.1)	4 (0.1)**	3 (0.1)**	10 (0.3)**
SABA	1223 (19.1)*	680 (17.4)	428 (14.4)	352 (12.1)
SAMA	117 (1.8)*	81 (2.1)	53 (1.8)	39 (1.3)
SABA+SAMA	318 (5.0)**	227 (5.8)	165 (5.5)	176 (6.0)
None	1914 (30.0)	1063 (27.3)	647 (21.7)	643 (22.1)
Other therapies	7 (0.1)	6 (0.2)	2 (0.1)	6 (0.2)**
GOLD recommended first choice therapy	1340 (21.0)	147 (3.8)	947 (31.8)	1094 (37.5)
GOLD recommended second choice therapy	538 (8.4)	4 (0.1)	3 (0.1)	16 (0.5)
Not on recommended therapy	4512 (70.6)	3749 (96.1)	2031 (68.1)	1804 (61.9)

*First choice therapy; **Alternate choice therapy (GOLD recommendations)

Conclusion: Less than a third of patients in all GOLD groups were started on guideline recommended therapies. Moreover, long-acting bronchodilators were underused, particularly in GOLD group B where these are the recommended therapies. Further, ICS monotherapy was used in a high proportion of patients, despite not being recommended at any stage for COPD treatment. Over 20% of all severity groups received no inhaled treatment; even in group D only 40% received any long acting bronchodilator.

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OR-020

EXISTING QUALITY OF LIFE SCALES FAIL TO ASSESS TREATMENT BURDEN IN PATIENTS WITH SEVERE ASTHMA- A QUALITATIVE STUDY.

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Aim: People with severe asthma suffer from major disease impacts and adverse effects of oral corticosteroids (OCS) including disturbed mood and physical symptoms. The impact of OCS on health-related quality of life (HRQoL) is not known. Asthma HRQoL scales are valid as outcome measures in patients requiring OCS only if they assess the deficits imposed by OCS. In this study we compared the burden of disease and treatment in patients with severe asthma with the items in 8 asthma specific HRQoL scales.

Methods: 23 patients from a difficult asthma clinic undertook 1 hour in depth interviews about the impact of symptoms and burden of treatment. Patients were asked how many years of life they would trade if they did not have to take OCS but their asthma remained otherwise the same. The interviews were fully transcribed and using thematic analysis, domains of impact were developed. We compared these domains to the items found in eight HRQoL scales.

Results: In addition to the burden caused by respiratory symptoms, ten domains of OCS impact on HRQoL were identified: depression, irritability, sleep, hunger, weight, skin, gastric, osteoporosis, disease anxiety, medication anxiety. Some patients reported the impact of treatment to be worse than that of asthma symptoms. Patients would trade up to 15 years of life to avoid taking OCS, but with their asthma symptoms unchanged. Although some HRQoL scales include some medication-relevant items, all 10 scales fail to adequately assess the several types of burden experienced by some patients while on OCS.

Conclusion: Conclusions

Existing asthma HRQoL scales are not valid for severe asthma patients, underestimating both the deficit in patients with frequent exposure to OCS and the benefit of steroid-sparing agents. New scales are needed to evaluate interventions in severe asthma.

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OR-021

THE AUSTRALIAN ASTHMA HANDBOOK: INNOVATIVE GUIDELINES FOR PRIMARY CARE ASTHMA MANAGEMENT

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Brief outline of context: The *Australian Asthma Handbook*, published by National Asthma Council Australia, is Australia's national guideline for primary care asthma management. Development of the 2014 edition needed to take into account changes since the last edition not only in evidence and practice, but also in guideline methodology and online publishing.

Brief outline of what change you planned to make: A multidisciplinary approach was adopted to ensure the advice remained relevant and implementable for the target primary care users. More than 80 primary care and specialist contributors formed the working groups and overarching Guidelines Committee, chaired by a general practitioner.

Assessment of existing situation and analysis of its cause: Planning began with a short online survey of users of the previous edition. There were 1071 respondents of whom 760 (71%) were general practitioners; the others were pharmacists, nurses and specialists. Responses indicated that the Handbook should include clinical decision pathways (61%) and quick reference to key points (69%), that it should be simple, concise and practical, and that it should have a printed summary of the key advice as well as the full online version.

Strategy for change: who, how, following what timetable: A structured and transparent methodology was used to develop the Handbook content. An initial scoping review identified more than 350 clinical questions. Working groups developed recommendations using standardised methods, including systematic review (for five key clinical questions), consideration of selected evidence, adaptation of existing guidance and consensus based on best-available evidence and clinical experience. Contributors focussed on practical advice appropriate for the Australian healthcare system. Supporting commentary was also drafted. Two independent experts reviewed the draft Handbook and stakeholders including patient advocates were invited to comment prior to finalisation.

Effects of changes: All recommendations were written in plain language as direct actions for primary care practitioners. Principal advice was summarised in diagnostic algorithms and stepped management figures. A unique, interactive website with a clear content hierarchy was designed. Recommendations, figures and tables were presented prominently, with supporting commentary at a deeper layer and hyperlinks provided to cited references and external resources. A quick reference guide of the key advice was printed.

Measurement of improvement: User feedback to date indicates that the Handbook is clearly written, practical and informative, and that the website is very easy to navigate. Further evaluation is planned.

Lessons learnt: Involving primary carers in all aspects of development led to practical and implementable guidelines for the Australian context. Focussing on user needs resulted in an innovative, comprehensive and clear publication.

Message for others: Effective implementation of guidelines relies on user uptake. The guidelines development process must involve target practitioners to ensure the guidelines are relevant, practical and accessible for users.

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OR-022

IS INTEGRATED DISEASE MANAGEMENT OF COPD EFFECTIVE? RESULTS OF THE RECODE CLUSTER RANDOMIZED CONTROLLED TRIAL IN REAL WORLD PATIENTS.

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Aim: In the Netherlands, integrated disease management (IDM) programs for chronic obstructive pulmonary disease (COPD) are currently implemented on a broad scale. However, the evidence about their effectiveness is still inconclusive.

Methods: We conducted a 24-month, two-group, parallel, cluster randomized controlled trial to evaluate the effectiveness of IDM delivered in primary care on quality of life in patients with COPD compared to usual care. The primary outcome was difference in health status at 12 months, measured by the Clinical COPD Questionnaire (CCQ); quality of care, exacerbations, dyspnea, self-management and activities were also assessed.

Results: Of a total of 1086 patients from 40 clusters, we randomly assigned 554 to the IDM group and 532 to the usual care group. After 12 months, preliminary results demonstrated no significant differences between both groups on the CCQ. At each time point, we found no differences between groups on quality of life, dyspnea, self-management and activities scores. Patients in the IDM group scored significantly higher on the PACIC questionnaire after 6 months, indicating improved satisfaction with their COPD care. However, this effect remained not significant after 12 and 24 months, except for the follow-up domain. All final results, including exacerbation related outcomes, will be presented at the IPCRG conference.

Conclusion: In this study, preliminary results showed no additional benefit of an IDM approach delivered in primary care on quality of life, dyspnea, self-management and activities compared to usual care.

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OR-023

IDENTIFYING FACTORS AFFECTING THE QUALITY OF PHYSICIAN ANTIBIOTIC PRESCRIBING IN PRIMARY CARE.

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Aim: Misprescription of antibiotics has resulted in the development of bacterial resistances worldwide. Considering the reported high rates of antibiotic consumption in Portugal, our aim is to characterize physician antibiotic prescribing behavior in this region.

Methods: A transversal study was conducted comprising all primary care physicians' (n=1097), working in the Center Regional Health Administration (ARS-C) of Portugal. A personally-addressed, reply-paid, self-administered questionnaire was sent to physicians in order to collect data about: (i) attitudes, knowledge and perceptions about antibiotic prescribing and antimicrobial resistance; (ii) preferential sources of clinical information used and (iii) sociodemographic and clinical practice information.

Results: A total of 473 physicians answered the questionnaires, with a response rate of 43%: the mean age was 52.55 years, 53% (n=249) were female, 77% (n=362) only work at the National Health System and 22% (n=103) also work at private settings. All participants were General Practitioners and 66% (n=312) also work in the emergency service. The results allow us to identify 5 main factors as affecting physician antibiotic prescribing behavior: (i) physician complacency with external pressure; (ii) physician intrinsic complacency; (iii) responsibility of others; (iv) knowledge about antibiotic therapy; and (v) perception of antimicrobial resistance as a public health problem.

Conclusion: Results revealed the attitudes affecting physician antibiotic prescribing behavior, which is a very complex process that demands prompt-counter measures. This research also shows that it is very important to (i) assess the statistical correlation of each one of the factors identified and the quality of the prescription; and (ii) that all these factors must be considered to design new, multidisciplinary and more effective interventions.

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OR-024

ACT VS ASTHMA APGAR IN PRIMARY CARE PATIENTS

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Aim: Assessing asthma control and severity is a key tenant of asthma management, and standardized and validated tools can be very helpful in making these assessments. The Asthma Control Test (ACTTM) is the most commonly recommended control score in the US. It was designed by specialists who may not need additional guidance on the next steps of asthma management. Conversely primary care clinicians may benefit from additional tools that link the assessment to management options. This study compares the control scores from the ACT with those of the Asthma APGAR to assess congruent validity.

Methods: This is a substudy of an Agency for HealthCare Quality and Research funded R01. The parent "Asthma Tools Study" is a randomized controlled pragmatic trial (RCT) to test the effectiveness of the Asthma APGAR system in primary care practices. As part of the study, enrolled patients completed both the ACT and the Asthma APGAR at the enrollment visit. This study compares the results of those two questionnaires for the first 468 enrolled patients.

Results: In the age group 5-11 years, the CACT and Asthma Apgar scores were in agreement 85.8% of the time (CI₉₅ 78.5, 91.4), resulting in a kappa statistic of 0.716 (CI₉₅ 0.060, 0.84). The McNemar statistic p-value 0.48 shows no significant difference in direction of disagreement using the two instruments. In the age group 12-18 years, the scores for the two instruments were in agreement 81.3% of the time (CI₉₅ 71.0, 89.1) with a kappa statistic of 0.625 (CI₉₅ 0.45, 0.80). Again, there was no significant difference in direction of disagreement as shown by a McNemar statistic p = 0.61. In the age group of 19 years and older, there was 84.7% agreement (CI₉₅ 79.7, 88.8) between the two scoring systems with a kappa statistic of 0.674 (CI₉₅ 0.58, 0.77) and a McNemar statistic p = 0.27. Of the 468 patients, 306 (65%) were classified as not controlled by either the ACT (or CACT) or the Asthma APGAR. Alternatively, 162 (35%) patients were classified as controlled by both the ACT/CACT and the Asthma APGAR.

The Asthma APGAR also reports directly actionable items related to adherence, triggers and medications currently prescribed through the answers to the patient questions and the link to the Asthma APGAR algorithm

Conclusion: The Asthma APGAR and ACT/CACTTM behave similarly in assessing asthma control in a multi-center primary care based sample. The Asthma APGAR appears to be a valid tool for assessing asthma control status in adults and children and like the ACT/CACT is associated with asthma quality of life or functionality. The Asthma APGAR uniquely identifies actionable items to help primary care physicians and practices better address the management of children and adults with asthma.

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Disclosure of Interest: None Declared

OR-025

INTRODUCING CLINICAL GUIDELINES TO REDUCE COST AND IMPROVE QUALITY: THE CASE OF CYPRUS

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Brief outline of context:

Cyprus healthcare system is under enormous pressure of cost savings due to the financial crisis. The universal introduction of clinical guidelines in all levels of care and particularly in primary care can be an important evidence-based tool to promote "efficiency" savings hence without diminishing the quality of care. Based on literature we have introduced a conceptual framework and procedure for adaptation of existing guidelines in order to save resources and time.

Brief outline of what change you planned to make: We are following a 6 steps approach to adapt clinical guidelines under an agreement for technical support from NICE namely defining clinical question, searching for existing guideline (firstly from NICE due to the fact that incorporates health economy models), assess clinical content and applicability, evaluate source guideline, adapt source guideline, external review, developing of change management strategy, implementation plan, tools, dissemination strategy, and finally clinical audit and monitoring.

Overall, we are following a similar approach to that proposed one by the ADAPTE Working Group.

Assessment of existing situation and analysis of its cause: The main challenge for Cyprus healthcare nowadays is to reduce the cost and maintain or improve if possible the quality of care. Cyprus is lacking behind in the implementation and monitoring of validated clinical guidelines, an evidence-based tool to reduce the cost in healthcare. I am the National Lead for the Cyprus Clinical Guidelines Group responsible for developing, implementing and monitoring clinical guidelines in Cyprus healthcare.

Strategy for change: who, how, following what timetable: We have a National Guidelines Group in place who reports to the MOH and HIO. We have developed a policy of selecting, adapting, implementing and monitoring clinical guidelines in Cyprus. We have established local clinical pathways-guidelines teams in each Cyprus hospital in order to facilitate the introduction and monitoring of guidelines

Effects of changes: We are expecting to reduce in cost and improve quality of care. Confounding factors will certainly influence the outcome of this project. We are introducing too many changes together in Cyprus healthcare ie restructuring of the hospitals, DRGs and we cannot assess exactly measure the impact of guidelines introduction on the cost of healthcare. Certainly, there are areas such the reduction in lab test that we can be more precise regarding the effect of the change.

Measurement of improvement: We have selected quality indicators for each guideline that will be implemented. The measurement and monitoring of quality indicators will be a marker of the successful outcome or not of the guidelines implementation. Moreover, we will be measuring users satisfaction in order to obtain feedback from patients.

Lessons learnt: Adaptation process for clinical guidelines

Message for others: Change management shall be an important part of any significant change in healthcare. Vision, strategy leadership, face to face contacts can certainly facilitate the change.

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Disclosure of Interest: None Declared

OR-026

TELEHEALTH IN COPD: THE GP PERSPECTIVE

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Aim: There is increasing interest in using assistive technologies in the management of chronic diseases. It has been suggested that telehealth - the remote monitoring and support of patients at home - is a valuable tool to enable patients to live independently and to help workforces cope with increasing demands of a growing and ageing population. We aim to establish the views of the UK General Practitioners (GPs) on the use of telehealth in the management of patients suffering from Chronic Obstructive Pulmonary Disease (COPD).

Methods: An online questionnaire containing 8 items was emailed to a total of 264 randomly selected GPs with a valid National Health Service (NHS) email account in England. For each of the 8 questions, GPs were asked to rate their response on a 5-point Likert scale and to provide free-text comments with each question. Free text comments were analysed thematically. The questionnaire was open for one week in September 2013.

Results: 100/264 GPs returned completed questionnaires, giving a response rate of 38%. More than 110 comments were received. Four main themes emerged, these are: doubt about the clinical benefits and the cost effectiveness of telehealth; poor knowledge of telehealth principles; concern about GP workload and the lack of proper GP engagement. GPs expressed concerns about the whole idea of telehealth in disease management. In our survey, only 23% of GPs agreed that telehealth might have a positive impact, 25% agreed about its cost-effectiveness and 28% thought the information gathered from telehealth would be clinically useful to them. GPs argued that traditional general practice is delivering a safer, a more efficient and holistic service without the need for high-tech alternatives. GPs also suspected a strong political and business influence in promoting telehealth in the management of long-term conditions. Only 29% of the GPs indicated a clear understanding of the principles of telehealth in COPD management. A similar response was also received for the GP's understanding of the local referral criteria to telehealth. 13% of the GPs thought telehealth would reduce their workload.

Conclusion: Telehealth is an emerging concept in managing patients closer to home. Much of the anxiety expressed in the survey reflected the poor evidence-base demonstrated in clinical trials. It is clear that for GPs to adopt these emerging technologies, a better evidence-base and a stronger engagement of the primary care sector are needed.

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Disclosure of Interest: None Declared

OR-027

INNOVATIVE SERVICE DELIVERY MADE ENORMOUS ADVANCES IN THE CARE OF RESPIRATORY DISEASE IN BANGLADESH

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Brief outline of context: Bangladesh emerged as an independent country in 1971 after a brutal war of liberation. The genocide and trauma compelled Bangladeshi people to initiate national resistance and widespread social transformation. Health care also entered under reforms with bypassing traditional idealized policy framework. In the region Bangladesh was in the bottom of the list of health performer. It achieved an excellent healthcare outcome in recent years and drawn international attention accordingly. Bangladesh secured best highest position of success among south and south-east Asian countries including China, India, and Pakistan. This success is based mainly on four well identified sectors: History of emerging as an independent state, (2) World class research on health system strengthening, (3) Aptitude for the innovation led primary care service with the gender equity along with pro-poor and pro-women development programs and finally (4) Support and international partnership. Primary care respiratory group of Bangladesh (IPCRG-BD) is one of the claimer of this outstanding achievement. IPCRG-BD have been started their effort since early 2002 along with the unlimited support from International Primary Care Respiratory Group (IPCRG). Awareness among people, developing human resource on primary care and implementing knowledge and skill on the management of respiratory diseases in primary care setting. Eventually we chalked out a project named as 'Better Breathing Bangladesh'. We trained primary care physicians, nurses and allied health professionals in different parts of the country and set up community respiratory centers. We also examined the pre and post service status of the health service in that particular area. We have also signed a memorandum of understanding with the country's largest research Institute (icddr,b) to evaluate our activities.

Brief outline of what change you planned to make: To examine the effectiveness in implementation of innovative delivery of health care other than idealized policy framework

Assessment of existing situation and analysis of its cause: Using the conventional indicators of health measurement

Strategy for change: who, how, following what timetable: Primary care and allied health professionals along with targeted population. Promoting pluralism in health care, conducting research on delivery system, ensuring gender equity and involving international partners

Effects of changes: The result of the ongoing works inspired us that it is really making a change which may contribute to the country's outstanding health achievement.

Measurement of improvement: Clinical audit and measuring morbidity and mortality

Lessons learnt: Knowledge and skill, proper implementation and research in primary care setting can make a big difference in health service

Message for others: Enormous creativity, resilience and devotion is the weapon to chase the challenges of health care in developing countries

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Disclosure of Interest: None Declared

OR-028

IMPLEMENTING ASTHMA SELF-MANAGEMENT – A SYSTEMATIC REVIEW OF MRC PHASE IV IMPLEMENTATION STUDIES

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Aim: Asthma self-management is widely recommended by guidelines but poorly implemented. Medical Research Council (MRC) Phase IV studies which accommodate the diversity of patient, professional and healthcare contexts in order to inform implementation in real-life settings are relatively uncommon. We undertook a systematic review of implementation studies of asthma self-management support interventions to explore what works for whom and why.

Methods: We searched and screened records from 7 electronic databases, and performed snowball and manual searches. We quality assessed all eligible papers, and extracted and synthesised data. Outcomes of interest included asthma-related symptoms and use of health services. Our narrative synthesis used the whole systems approach as a framework and classified outcomes as 'process' (e.g. number of action plans issued) or patient outcomes (either measures of asthma control or unscheduled healthcare).

Results: 18 studies (7 randomised, 8 longitudinal database studies, 3 uncontrolled studies) were included in the review. The healthcare contexts included primary, secondary, community and managed care settings and targeted children and/or adults. Targeting professionals (n=2 studies) improved process outcomes but did not appear to influence patient outcomes. Targeting patients (n=6 studies) significantly improved some process outcomes but had inconsistent impact on patient outcomes. Targeting the organisation (n=3 studies) improved process, but had little or no effect on patient outcomes. Interventions which explicitly addressed patient, professional and organisational factors (n=7 studies) showed the most consistent improvement in both process and patient outcomes. Authors highlighted the need to support professional education with integrating new behaviour into practice, the challenges of staff turnover, and the importance of involving senior staff in the design of interventions.

Conclusion: Effective interventions were multi-faceted and multidisciplinary; actively engaging patients, and training and motivating professionals within the context of an organisation which prioritised and actively supported self-management. Whilst all three components are important, the culture of the organisation underpins and enables integration of self-management principles into routine clinical care, such that the process and clinical impact of patient/professional interventions are realised/enhanced

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Department of Health Disclaimer: The views and opinions expressed therein are those of the authors and do not necessarily reflect those of the HS&DR programme, NIHR, NHS or the Department of Health

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Disclosure of Interest: None Declared

OR-029

A FOLLOW-UP OF PATIENTS WITH A NEW DIAGNOSIS OF ASTHMA - CHARACTERISTICS, PROGNOSIS AND RISK FACTORS

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Aim: To study patients with a new diagnosis of asthma in a seven year follow-up.

Methods: A survey in 2005 to 1725 randomly selected patients, 18-75 years, with a diagnosis of asthma. Response rate 71%. Medical records data 2000-2003 were reviewed and a follow-up was performed in 2012. This study analyses data from the 2005 and 2012 surveys regarding patients that received their asthma diagnosis 2000-2003. Asthma control according to GINA, quality of life (MiniAQLQ) and BMI from questionnaire.

Results: Of 1211 patients in the 2005 survey 339, 79% in primary care and 58% women, were diagnosed 2000-2003. A total of 194 patients, women 58%, participated in the follow-up 2012. Mean age of women 2012 was 57.3 years (SD14.5), men 57.5 years (SD13.5); daily smoking 6% and 6%; allergic rhinitis 50% and 52%; BMI ≥ 30 25% and 23% respectively. No current asthma stated by 27% of the women and 21% of the men.

Treatment 2005: ICS women 46%, men 47%; fixed combination 23%, 21% respectively. In 2012: ICS women 23%, men 25%; fixed combination 31%, 29% respectively.

Asthma control 2005: women 47%, men 56% and 2012: 55% and 58% respectively. MiniAQLQ 2005: women 5.61 (95%CI 5.41-5.80), men 5.82 (95%CI 5.58-6.05) and 2012: women 5.87 (95%CI 5.66-6.08), men 5.89 (95%CI 5.64-6.13). Patients with BMI ≥ 30 in 2005 had OR 2.1 (95%CI 1.00-4.45), and patients with allergic rhinitis in 2012 had OR 2.56 (95%CI 1.39-4.73) for not achieving asthma control in 2012, adjusted for age and sex.

Conclusion: Uncontrolled asthma and impaired quality of life were common in this follow-up of patients diagnosed about ten years earlier. High BMI and allergic rhinitis were associated with uncontrolled asthma.

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Disclosure of Interest: None Declared

TARGETING ASTHMA CONTROL BY SYMPTOM AND BIOMARKER DRIVEN STRATEGIES: A CLUSTER RANDOMISED TRIAL IN PRIMARY CARE

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Aim: Currently, the aim of asthma treatment is to achieve and maintain clinical control at the lowest dose of treatment to minimize cost and maximize safety. We assessed the cost-effectiveness and clinical effectiveness of targeting at partly controlled asthma (PCa), controlled asthma (Ca), or controlled asthma additionally driven by fractional exhaled nitric oxide (FCa).

Methods: This was a non-blinded three-arm pragmatic cluster randomised trial with 12 months follow-up in general practice. Adults with doctor's diagnosed asthma (18-50 years) and prescribed inhaled corticosteroids in the previous year were included. The 3 treatment strategies targeting different levels of asthma control were based on 3-monthly adjustment of treatment according to internet-based algorithms: 1) PCa, Asthma Control Questionnaire (ACQ) <1.50; 2) Ca, ACQ<0.75; and 3) FCa, aiming at ACQ<0.75 and FeNO<25 ppb. Primary outcome was incremental cost per quality adjusted life year (QALY) gained. Secondary outcomes were asthma control (ACQ), (asthma-related) quality of life (AQLQ), asthma medication usage and severe exacerbation rate. Analysis was performed by patient level hierarchical regressions accounting for baseline values, clustering and repeated measurements.

Results: 611 participants (mean age 43 yr, 68% female) from 131 general practices/clusters were randomized. FCa improved asthma control compared to PCa ($p<0.02$). There were no differences in quality of life between the strategies ($p>0.36$). Costs for asthma medication were significantly lower for PCa and FCa than for Ca (PCa €373, Ca €455, FCa €376). Annual societal costs were PCa €3449, Ca €3788, FCa €3213 ($p>0.34$). FCa had the highest probability of cost-effectiveness at a willingness-to-pay of €40000/QALY (83%), PCa (2%), Ca (15%). The severe exacerbation rate did not significantly differ between strategies (PCa 0.29, Ca 0.29, FCa 0.19 exacerbations/patient/year ($p>0.05$)).

	Controlled vs Partly Controlled asthma	FeNO driven Controlled vs Partly Controlled asthma	FeNO driven Controlled vs Controlled asthma
ACQ	-0.08 (-0.18 to 0.03)	-0.12* (-0.23 to -0.02)	-0.05 (-0.15 to 0.06)
QALY (EQ-5D) (95% CI)	0.013 (-0.02 to 0.04)	0.008 (-0.01 to 0.03)	0.006 (-0.02 to 0.03)
AQLQ (95% CI)	0.03 (-0.08 to 0.13)	0.03 (-0.08 to 0.14)	0.001 (-0.11 to 0.11)
Asthma medication (€) (95% CI)	82* (4 to 167)	3 (-62 to 67)	-79* (-151 to -14)
Societal costs (€) (95% CI)	339 (-746 to 1483)	-237 (-1023 to 699)	-576 (-1638 to 577)
Severe exacerbation rate/patient/year (95% CI)	OR = 1.26 (0.54 to 2.92)	OR = 0.79 (0.32 to 1.93)	OR = 0.64 (0.27 to 1.56)

Conclusion: Treatment aimed at controlled asthma additionally driven by FeNO improves asthma control with a high probability of cost-effectiveness and without increasing medication costs compared to partly controlled asthma. Treatment aiming at controlled asthma without FENO guidance leads to increased medication costs, without improving asthma control.

Disclosure of Interest: None Declared

OR-031

SPIROMETRY INTERPRETATION FOR PRIMARY CARE: A VALIDATION STUDY

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Brief outline of context: Objective measurement of lung function is of critical importance to respiratory medicine management, yet training in school is often deficient. The FPAGC has created a spirometry education program and incorporated a new spirometry interpretation algorithm to assist physicians in their spirometry interpretation. While there are many barriers to performing spirometry including cost, interest, and compensation for spirometry performance, the key barrier is often knowledge about spirometry interpretation.

Brief outline of what change you planned to make: We wanted to improve physician understanding of spirometry interpretation and through this improve spirometry utilization

Assessment of existing situation and analysis of its cause: 121/138 surveys were returned. 40% of the participants had been in practice for less than 10 years and 31% more than 20 years. Most were in a group practice. 69% were currently not doing spirometry, yet they came to learn interpretative skills and were debating the purchase of a machine. Spirometry was annually ordered less than 10 times by 19%, 10-50 times by 46% and more than 100 times by 16%.

Strategy for change: who, how, following what timetable: Physicians were taught spirometry interpretation using the spirometry algorithm and then surveyed on their comfort level post the program.

Effects of changes: The creation and teaching of a spirometry program and interpretation algorithm tool has successfully created comfort in spirometry interpretation in most participants.

Measurement of improvement: 21% of physicians had been using an algorithm tool. 71% of participants said that they would now use the tool provided in the program. 98% of participants found the tool helpful in interpreting spirometry, with 93% of physicians saying that they would use this in their practice in the future. They felt the algorithm would assist them in diagnosing asthma (91%), assessing asthma control (94%) and diagnosing COPD (94%).

Lessons learnt: A spirometry interpretation algorithm is of value to family physicians.

Message for others: This algorithm is available at www.fpagc.com and is freely available.

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Disclosure of Interest: None Declared

OR-032

IMPACT OF SPIROMETRY TRAINING ON SPIROMETRY TEST QUALITY IN DUTCH GENERAL PRACTICES

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Aim: To study the impact of two spirometry training programs on the quality of spirometry tests in Dutch general practices.

Methods: The investigated training programs were CAHAG's "CASPIR duo course" for GPs and practice nurses, and the spirometry training program for practice nurses and assistants as developed by "Cohesie general practice care group". We took random samples from practices' spirometry databases before and after training. Two experienced pulmonary function technicians (PFTs) reviewed all tests. Primary outcome was the proportion of tests complying with ERS/ATS quality criteria ('adequate tests'). We considered $\geq 60\%$ adequate tests (previously observed in a GP laboratory) as the desired performance level for each practice. Secondary outcome was the % 'clinically useful' tests according to the PFTs. Multivariate multilevel logistic regression analysis was used to calculate odds ratios (ORs) for pre-/post-training differences in outcomes.

Results: 29 practices (15 CASPIR, 14 Cohesie) participated, 1065 spirometry tests were reviewed. For CASPIR the pre-training % adequate tests was 39.1%, post-training 51.0% (OR=1.60; 95%CI 1.12, 2.30). Percentages 'clinically useful' tests were 83.3% and 89.1% (OR=1.61; 0.97, 2.68), respectively. Before CASPIR 2 practices (13.3%) reached the desired performance level, after training 7 (46.7%). For the Cohesion program pre- and post-training rates were 45.3% versus 44.1% (OR=0.93; 0.65, 1.33) and 80.0% versus 88.5% (OR=1.90; 1.16, 3.12) for the primary and secondary outcomes, respectively. At pre-training 4 Cohesion practices (28.6%) reached the performance level, post-training 1 (7.1%).

Conclusion: After CASPIR training we observed an average 12% increase in the rate of adequate spirometry tests, and the number of practices reaching the desired performance level tripled. After Cohesie training no change in the primary outcome was observed, but the average rate of 'clinically useful' tests increased with 9%. Overall, structured spirometry training seems to have a positive impact on general practices' spirometry quality, but does not necessarily lead to the desired performance level in every practice. At the time of the conference we will also present further follow-up data of the intensified Cohesie training.

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Disclosure of Interest: None Declared

OR-033

RISK FACTORS FOR ABNORMAL SPIROMETRY AMONG HIV-INFECTED INDIVIDUALS ENROLLED IN AN HIV TREATMENT PROGRAM IN NAIROBI, KENYA

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Research question: Among HIV-infected (HIV+) individuals in resource-limited settings, what are unique or modifiable risk factors for chronic lung disease (CLD) detected by abnormal spirometry? What is the utility of respiratory symptoms and signs in identifying HIV+ individuals with abnormal spirometry?

Background: As access to antiretroviral therapy (ART) expands in resource-limited settings, HIV+ individuals will have prolonged survival. As a consequence, chronic illness and aging-related disability are likely to increase as they have in cohorts of HIV+ individuals in developed countries. How this will impact CLD among HIV+ individuals in resource-limited settings is largely unknown.

In developed countries, infectious pulmonary complications of HIV have declined dramatically and CLD has emerged as an important determinant of morbidity and mortality. In resource-limited countries where proportionately fewer HIV+ individuals are on ART, sparse data suggest a similar shift. However, the role of tobacco smoke, a primary risk factor for CLD, was established largely using data from developed countries. Other risk factors for CLD, such as indoor burning of biofuels, malnutrition and prior pulmonary infections, may play more prominent roles in resource-limited settings. HIV itself is associated with increased risk of CLD, and as early lung development may influence lung function later in life, vertically-acquired HIV, HIV severity and timing of ART initiation may also impact CLD risk. HIV+ individuals in resource-limited countries experience differing exposure to CLD risk factors, yet associations between risk factors and CLD are unknown for this setting.

Possible methodology: This project will evaluate risk factors for decreased lung function, measured using pre- and post-bronchodilator spirometry, among 500 HIV+ individuals ≥ 10 years old sampled from the ~4,000 individuals actively enrolled in HIV-related care at the Coptic Hospital Hope Center in Nairobi, Kenya. Leveraging the established research infrastructure of the Hope Center, tracking details of HIV disease stage and treatment, we will collect questionnaires and respiratory evaluations, including oximetry and spirometry to address this project's research questions. We will use the Spirometry 360 online training and feedback program to instruct study staff in performing spirometry. Multiple linear and logistic regression will be used to evaluate associations between risk factors and abnormal spirometry, using continuous FEV1 and FVC % predicted values as well as categories of obstructed, and restricted patterns, respectively.

Questions to discuss: What is the importance of including imaging? With limited financial resources, how can we most efficiently/effectively ascertain variables such as indoor air pollution? In anticipating future studies incorporating HIV-patients for comparison, which factors are important and feasible to match on?

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Disclosure of Interest: None Declared

OR-034

DEVELOPMENT OF A MONTHLY SPIROMETRY INTERPRETATION E-LEARNING FOR PRIMARY HEALTH CARE PROFESSIONALS: CASPIR ONLINE

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Brief outline of context: Good-quality spirometry is essential to diagnose and monitor chronic respiratory diseases in primary care and requires extensive training.

Brief outline of what change you planned to make: Our aim was to develop a 'spirometry case of the month' e-learning application to maintain the performance level of spirometry test execution and interpretation for previous CASPIR trainees.

Assessment of existing situation and analysis of its cause: In 2009 a spirometry course was developed and implemented on a nationwide scale in the Netherlands to improve spirometry test execution and interpretation in general practices. Currently more than 5000 GPs and practice nurses have followed this so-called 'CASPIR spirometry course'. It is essential to keep former course participants' spirometry knowledge up-to-date and one efficient way to achieve this is to offer them a monthly web-based spirometry refresher course. E-Learning has several advantages above traditional teacher-led methods, like a better gain of knowledge, and participants can schedule the course at their own convenience.

Strategy for change: who, how, following what timetable: We collected potentially interesting spirometry test print-outs and asked two experts to interpret the execution and interpretation of the spirometry in a standardized way (i.e., one GP and one lung function technician). After consensus was achieved between the experts, a medical history was made up and specific learning goals per case were formulated (like interpretation of results based on the GLI-equations; spirometry testing after an exacerbation; configuration of spirometry software; and the use of an bronchodilator by the patient prior to testing). An e-learning template was developed with Lectora Online® software, which includes questions on the indication for spirometry; acceptability of blows; manoeuvre repeatability; selection of best FEV1 and FVC values; interpretation of spirometry outcomes based on a standard checklist; and conclusions drawn based on the spirometry results. Next, additional questions were formulated and added to the e-learning template to cover the specific monthly learning goals. The so-called 'CASPIR Online' e-learning is accessible through the educational website of the Dutch Colleges of General Practitioners (A teaser of the e-learning in Dutch can be found at cahag.nhg.org). A web forum is available to allow participants to discuss the spirometry case of the month.

On January 9th 2014 the first spirometry case of the month of CASPIR Online was launched. At that moment there were 28 participants (21 GPs). We plan to have 500 participants at the end of 2014 (10% of previous CASPIR trainees).

Effects of changes: In September 2014 the course will be evaluated and a decision will be made about the continuation of the course in 2015.

Measurement of improvement: Later on we will evaluate the GPs' spirometry interpretation skills before and after a year of CASPIR Online education.

Lessons learnt: -

Message for others: -

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Disclosure of Interest: None Declared

OR-035

EVALUATION OF AZORE'S PHYSICIANS' AND PHARMACEUTICS' KNOWLEDGE ABOUT INHALATION TECHNIQUE

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Aim: The inhalation devices are the gold standard treatment for asthma and chronic obstructive pulmonary disease. If incorrectly managed, drugs do not attain effective concentrations. Health providers that take care of patients who suffer from these pathologies are responsible for teaching them the inhalation technic.

The goal of this research work was to evaluate physicians' and pharmaceuticals' knowledge about the pressurized metered dosed inhaler and the turbohaler inhalation technic.

Methods: An observational, multi centric, descriptive, transversal research was done between family medicine, internal medicine and pediatric physicians and pharmaceuticals of four Azorean islands. A census of the population was done between physicians and a convenience sample was obtained between pharmaceuticals. The health care providers were invited to demonstrate the inhalation technique of two inhalation devices, while the authors verified if each step was accomplished through a check-list. SPSS 20 was used for data analysis, as well as the chi square and the Fisher's exact test.

Results: 181 health care providers agreed to participate in the study (45 pharmaceuticals, 91 family doctors, 26 internists and 19 pediatricians). Sixty six point nine percent were women and participants mean age was $40,8 \pm 12,2$. Five (2,8%) demonstrated correctly the inhalation technique of both devices. The most failed steps were exhaling to residual volume, holding breath for 5 seconds, in both inhalation devices, wash the mouth with water, if the inhalation device contained steroids and shaking the metered dosed inhaler before using it. Failing 4 to 6 steps in the metered dosed inhalation technique was associated with being a pharmaceutical ($p=0,000$), being between 51 and 65 years old ($p=0,002$) and having 31 to 45 years of work ($p=0,007$). When it came to turbohaler, failing 4 to 6 steps was associated to being between 51 and 65 years old ($p=0,002$) and having 31 to 45 years of work ($p=0,005$).

Conclusion: This research work showed that most health care providers handle incorrectly inhalation devices, although they claim to always or most always explain its technique to their patients. Teaching programs should be implemented in order to improve health care providers' performance and, therefore, their patients' inhalation technique.

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Disclosure of Interest: None Declared

OR-036

EFFECTIVENESS OF A BRIEF EDUCATIONAL INTERVENTION ON THE CORRECT USE OF INHALERS ON THE PREVENTION OF EXACERBATIONS IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

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Research question: Could a brief educational intervention on the use of inhalers decrease the number of exacerbations in patients with chronic obstructive pulmonary disease?

Background: Exacerbations in patients with COPD are the main cause of medical consultation and hospitalization. COPD patients suffering on average 1 to 4 respiratory exacerbations per year. Furthermore, this is the leading cause of death on these patients.

Inhalers are the cornerstone treatment of COPD and several studies have showed about their wrong using technique.

Possible methodology: A Randomized controlled clinical trial with parallel design and triple blind was done in 99 patients with COPD followed in three primary care health areas.

Patients were randomized through a stratify assignment according to their functional severity measured with spirometry and thereby assigned into two groups.

Intervention Group: according to their inhalator technique, their mistakes were corrected with a brief educational intervention. Two reinforcement visits were made during a 1 year follow-up.

Control group: None educational intervention was made.

After 1 follow-up year, the number of exacerbations in each group will be checked.

Questions to discuss: A reduction in the number of respiratory exacerbations could represent an improvement in the quality of life of COPD patients with less number of hospitalizations and a minor loss of their pulmonary capacity.

To know if a brief educational intervention on the use of inhalers can reduce the number of exacerbations in patients with COPD would be an important progress because is an inexpensive and simple intervention that could be done in our daily practice.

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Disclosure of Interest: None Declared

OR-037

WHAT ARE THE OPINIONS, EMOTIONS AND NEEDS OF ASTHMA AND COPD PATIENTS TOWARDS A PATIENT WEB PORTAL: A DESCRIPTION OF A FOCUSGROUP STUDY IN THE NETHERLANDS

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Research question: What are the opinions, emotions and needs of primary and secondary care asthma and COPD patients towards a patient web portal?

Background: In the past decades the Internet has become increasingly important in healthcare. By using the Internet instead of paper the communication between physicians has become easier and more efficient. Patient web portal(PWP)s have been developed by several health care providers including primary care physicians and pharmacies to increase transparency and enhance self-management of patients. PWPs generally provide access to personal medical records and can include other features like self-management and medication adherence tools, online information about the disease and communication possibilities with caregivers. However, study's that have evaluated the effect of a PWP on self-management, medication adherence or communication with the caregiver showed mixed results. Effectiveness of the PWP seemed to depend on adherence to the use of the PWP. To increase the effectiveness of PWPs patients should be involved in the development process. Therefore we are currently conducting a qualitative study among primary and secondary care asthma and COPD patients to evaluate their opinion, emotions and needs towards a PWP. Asthma and COPD are common chronic diseases in primary care. Self-management of chronic diseases is very important and might be enhanced by the use of a PWP. Information obtained by this study might be used for the implementation of PWPs in primary and secondary care practices.

Possible methodology: In the beginning of 2013 we explored the need for a PWP by conducting individual interviews with asthma and COPD patients (n=15) and physicians (n=15) in the North of the Netherlands. Patients and physicians had a positive attitude towards a PWP and were interested in using one. Therefore, in December 2013 we started this focusgroup study among 36 Dutch asthma and COPD patients (52% men, mean age 64±11 years) to obtain more in-depth information about their opinion on the following topics: ¹)internet and health care, ²)online access to medical records, ³) online communication with healthcare providers, ⁴)preferred features, and ⁵)self-management tools. Patients are divided in 3 groups according to their residence. Three focusgroup meetings are organized for each group and we have now conducted the first meetings.

Questions to discuss: Data from this study will be analyzed in the spring of 2014. The preliminary results of this study are promising: patients are open and willing to share their opinion with the group and the researchers. In general, patients like to be well informed and want to have a more equal relationship with their physician. How can we implement the results of this qualitative study in primary care? And what would be the next steps in our study?

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Disclosure of Interest: None Declared

OR-038

WHAT DETERMINES THE LEVEL OF ACTIVITY IN COPD CARE IN A PATIENT-DOCTOR ENCOUNTER? A QUALITATIVE STUDY IN PRIMARY CARE.

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Aim: To identify factors that explain the process in patient-doctor encounter leading to primary care physicians' (PCPs') level of activity in further COPD care.

Methods: Grounded theory method (GTM) was used. Data was collected through semi-structured individual (4) and focus group (10) interviews including in all 54 PCPs in Stockholm County, Sweden. The initial questions were designed to stimulate PCPs to describe typical clinical situations encountering patients with COPD. Further questions were developed from the continuous GTM analysis in order to get a deeper understanding of the factors emerging and how they affect PCP activity in COPD care.

Results: PCPs experienced that they typically got in contact with patients with COPD during short urgent primary care appointments or planned time-limited check-ups of patients with multiple morbidities, including COPD. Factors affecting the level of activity were either patient-related or PCP-related. Important patient-related factors were the clinical severity of COPD, whether COPD diagnosis was known or unknown, the level of patient's motivation for further action in COPD care and whether the PCP was the patient's permanent physician or not. Important PCP-related factors were PCPs' ways of coping with time pressure and complexity of multiple morbidities, PCPs' attitudes about smoking in general and whether COPD was considered a self-inflicted disease, resulting in low expectations of the patients' adherence to the treatment. PCPs' consultation strategies were central; whether the PCPs used a holistic or disease-oriented approach and whether the patient's agenda or the PCP's medical assessment dictated the terms of the consultation and what was brought up at it.

Conclusion: PCPs' ability to handle the complexity of multiple morbidities in combination with time pressure and low expectations of patients' adherence to treatment affected PCPs' actions in initiating active COPD care. Holistic or disease-oriented consultation strategy, and to what extent the PCPs allowed their medical agenda to influence the content of the consultation were also factors affecting the level of activity in COPD care.

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Disclosure of Interest: None Declared

OR-039

MULTIPLE CO-EXISTENT DISEASES: AN ASSESSMENT OF THE CHALLENGES OF TRANSLATING RESEARCH INTO PRACTICE

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Brief outline of context: Health care professionals are faced with numerous challenges associated with the lack of terminological consensus when referring to the presence of multiple co-existent diseases (e.g., comorbidity, multimorbidity, multiple chronic conditions (MCC), etc.). This lack of consensus has led to bibliographic inconsistencies, in turn creating confusion amongst researchers and those making health care system decisions, and treating and managing patients with multiple co-existent diseases.

Brief outline of what change you planned to make: Following our own bibliographic analysis, we suggest that the use of clearly defined terms to refer to multiple co-existent disease, is the responsibility not only of researchers and primary care practitioners; but more critically, of the institutes and organizations that index these terms, create the associated controlled vocabularies, and present the authoritative definitions of the concepts under discussion.

Assessment of existing situation and analysis of its cause: In another recent bibliographic analysis (Almirall & Fortin, 2013), several terms that refer to the co-existence of disease, including but not limited to the concepts of comorbidity and multimorbidity, as well as multiple definitions for those terms, have been documented in the literature. This is partly because most authors do not provide clear terminological definitions in their publications.

Strategy for change: who, how, following what timetable: We encourage national and international bibliographic institutions, such as the National Library of Medicine (NLM), alongside researchers and health care practitioners, to create consistent platforms to place established concepts, and to guide emerging ideas.

Effects of changes: With established, authoritative guidance from bibliographic institutes, such as the NLM, health care researchers, decision-makers and practitioners will have a greater understanding of the meaning and associations inherent in the words and definitions of the health issues they are dealing with, and in turn, will make appropriate use of these terms and definitions in the literature and in practice.

Measurement of improvement: The NLM has not yet included “multimorbidity” in its classification scheme, and consequently, a MeSH term or definition, does not currently exist. Therefore, it is critical that major bibliographic institutes, keep up-to-date with commonly used terms and emerging trends through periodic scans of the current literature, within and between disciplines.

Lessons learnt: It is important that health care practitioners recognize the benefit of adhering to well-established bibliographic classification schemes and protocols.

Message for others: The way in which researchers approach and design their investigations, how health care professionals proceed to diagnose, treat and manage the patients affected, and ultimately, the way in which patients live with their multiple co-existing conditions, is a direct result of the accurate and appropriate use of these terms and definitions.

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OR-040

CASE FINDING AND EARLY INTERVENTION FOR COPD BY PRACTICE NURSE-GP TEAMS

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Brief outline of context: COPD is a leading cause of disability, hospitalization and premature mortality. Most patients with COPD are managed in primary care and there are opportunities for early detection and intervention.

Brief outline of what change you planned to make: This cluster randomized trial with blinded outcome assessment involves practice nurses (PNs) in all participating practices conducting case-finding visits for COPD in at risk patients. In practices randomised to the intervention group, PN, GP and patients work in collaboration to develop and implement a plan for early intervention for COPD.

Assessment of existing situation and analysis of its cause: General practice is well placed to diagnose and manage COPD, but there is a significant gap between evidence and current practice. Under-diagnosis of COPD is a world-wide problem, limiting the benefit that could potentially be achieved through early intervention strategies. General practice is moving towards more structured chronic disease management, and the increasing involvement of PNs in delivering chronic care.

Strategy for change: who, how, following what timetable: PNs undertook 8+hours of education in spirometry and case-finding for diagnosis of COPD. Practices invited patients at risk of COPD (age 40-85, history of smoking, no documented diagnosis of COPD) to attend a case-finding visit. Quality control of spirometry traces was provided by an expert. Patients identified by PNs as having COPD were invited to take part in the study. In the intervention practices, the PN and GP work in partnership with the patient in developing and implementing a care plan involving (as appropriate), smoking cessation, immunisation, pulmonary rehabilitation, medication review, review of inhaler technique, patient education, and management of co-morbidities.

Effects of changes: 36 practices participated; 10231 invitation letters were sent, 1629 patients (16%) attended a case-finding visit, and 287 (18%) were given a diagnosis of COPD by the PN. Of these, 254 (60% male, average age 66 years) were available for project officer visits (mean 19 days after PN diagnosis). The diagnosis of COPD (post-bronchodilator (BD) FEV1/FVC <0.7), was confirmed in 69% of PN cases.

Measurement of improvement: The primary outcome measure is health-related quality of life, assessed with the St George's Respiratory Questionnaire 12 months after diagnosis. Secondary outcome measures include general quality of life, smoking and immunisation status, medications, inhaler technique and lung function. Semi-structured interviews were conducted with PNs and GPs from the intervention group to explore the feasibility of case-finding and a partnership approach to management of COPD.

Lessons learnt: Case-finding of COPD in at risk patients by PNs leads to a substantial number of new diagnoses and COPD. Despite training and ongoing support PNs experienced some difficulty in performing and interpreting spirometry. Lessons on the effect of early intervention will be reported at the conference.

Message for others: Case-finding for COPD in at risk patients with spirometry by PNs is feasible but requires considerable training and support.

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Disclosure of Interest: None Declared

OR-041

CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) HOSPITAL ADMISSIONS AND DRUGS, UNEXPECTED POSITIVE ASSOCIATIONS: A RETROSPECTIVE GENERAL PRACTICE COHORT STUDY

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Aim: Chronic Obstructive Pulmonary Disease (COPD) is a leading cause of death worldwide, and is the second largest cause of emergency hospital admissions within the UK. Inhaled long-acting anti-muscarinic (LAMA) and combined inhaled long-acting beta-agonist and corticosteroid (LABA+ICS) drugs reduce the risk of exacerbations in COPD, and have led to hopes of fewer COPD hospital admissions. Between January 2007 and January 2011 in England annual spending on LAMA rose from £78 million to £130 million, an increase of 65% and on LABA + ICS rose from £385 million to £498 million, an increase of 29%. The objective of the present study was to investigate the impact of rising primary care prescribing of LAMA and LABA+ICS on COPD admissions.

Methods: This was a retrospective analysis of COPD admission and prescribing data routinely collected between 2001 and 2010. A representative group of 806 English general practices (population 5,264,506) was obtained. The participants were all patients from these practices admitted to hospital with a COPD exacerbation (2001 – 2010). Correlations were sought between general practices' prescription costs per practice patient for LAMA and their prescription costs per practice patient for LABA+ICS between 2007 & 2010. Multiple linear regression was used to examine the relationship in each year between the prescription costs of each drug per practice patient and the rate of COPD patients admitted per 10,000 practice patients when controlling for the prevalence of diagnosed COPD, deprivation score, and practice performance indicators obtained from Quality and Outcomes Framework (QOF).

Results: Rates of COPD admissions remained stable from 2001 to 2010. Practice prescribing volumes of LAMA and LABA+ICS increased by 61% and 26% respectively between 2007 and 2010. Correlation between costs of LAMA and those of LABA+ICS rose year on year, highest in 2010 (Pearson's $r=0.68$; 95% CI 0.64-0.72). Practice COPD admission rates were positively predicted by practice prescribing volumes of LAMA (2010: $B = 1.23$, 95% CI 0.61-1.85) and of LABA+ICS (2010: $B = 0.32$, 95% CI 0.12-0.52) when controlling for practice list size, COPD prevalence, deprivation, and QOF score.

Conclusion: Rising prescribing of LAMA and LABA+ICS inhalers was not associated with a fall in hospital admission rates for COPD patients. The positive correlation between high practice COPD prescribing and high practice COPD admissions was not explained.

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Disclosure of Interest: None Declared

OR-042

THE IPCRG FELLOWSHIP PROGRAM

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Research question: How can we enhance research capacity in low and middle-income countries (LMIC)? Is an IPCRG fellowship program through a multinational universities collaboration a valid approach?

Background: In 2013, the first fellowship award was approved by the IPCRG for a joint research programme with the involvement of the University of Crete (Greece), University of Southampton (UK) and the University of Leiden (The Netherlands). The IPCRG and the participating universities will provide facilities and expertise for studying and implementing research and support the research programme which will result in a PhD degree.

Possible methodology: Learner will attend educational courses from the participating universities to support the research protocol and meet training needs. Training in advance research methodology will be applied. Learner could be accountable in implementing the research protocol in these settings under the supervision of a number of academicians at the participating universities.

Publishing the research findings under the auspice of IPCRG and these universities.

Questions to discuss: For learner:

- Is such collaboration able to develop research capacity in the respiratory primary care field?
- Could the experiences gained by working in different settings and cultures be applied in a LMIC setting?

For the Universities and IPCRG:

- What experiences can be gained through international and intracultural collaboration in research and clinical practice?
- What are the non-visible factors that may explain the variation of respiratory morbidity in different settings?

This IPCRG program promises to provide an excellent opportunity to cooperate and extend studies in respiratory primary care in developing countries. It will assist a doctor from a LMIC to achieve a higher degree, represent the IPCRG in national and international settings and trained for a future leadership role in primary care research.

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OR-043

PREVELANCE OF NICOTINE ADDICTION IN MEDICAL AND NURSING POPULATION IN FIVE GREEK PUBLIC HOSPITALS OF FOUR GREEK PREFECTURES

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Aim: The study aimed at evaluating the use of tobacco cessation techniques in the past and the strength of nicotine addiction as well as the factors which affect nicotine addiction.

Methods: A cross-sectional epidemiological study was designed, involving a total of 385 smokers doctors and nurses, employed in four public hospitals in the prefectures of Thessaloniki, Magnesia, Imathia and Halkidiki. Sociodemographic information was also collected. There were 175 males and 210 females (aged 19-64years). The study was performed using the Fagerström Questionnaire (for analyzing degree of nicotine addiction). Questionnaires were completed by the conduction of personal interviews, were anonymous and participants were informed about the confidentiality of their responses and gave their consent for their participation in the study.

Results: The final sample consisted of 385 smokers doctors and nurses. 32,2% of the population showed a slight (Fagerstrom 0-3), 36,4%(Fagerstrom 4-6) and 31,4% severe nicotine dependence (Fagerstrom 7-10). From the interview was revealed that 71,7% of doctors and nurses have never used tobacco cessation techniques. It was also found that male gender and older age are associated with high levels of nicotine addiction.

Conclusion: Health care professionals have a very important role in motivating patients to quit smoking. They serve not only as health care providers but as role models for their patients. This highlights the importance of motivation for continuous education of health care professionals towards smoking cessation.

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Disclosure of Interest: None Declared

OR-044

WHAT IS THE IMPACT OF CHANGING ASTHMA MANAGEMENT PRACTICES (CHAMPS) A 1-DAY TRAINING PROGRAMME ON ASTHMA DIAGNOSIS AND MANAGEMENT, ON THE CLINICAL PRACTICE OF PRIMARY CARE PHYSICIANS FROM PUNE CITY IN INDIA: A PILOT RANDOMIZED CONTROLLED TRIAL

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Research question: To find out if our one day training programme in Asthma, 'CHAMPS' has any impact in improving the prescription practices, knowledge and attitude of primary care practitioners in Pune city in India.

Background: Increasing burden of Asthma in India is being managed by primary care practitioners in private practice who may not necessarily be updated about the correct practices for early diagnosis and correct management of Asthma. Evidence based guidelines on continuing medical education recommend that CME interventions be used to improve physician practice performance.

Possible methodology: This mixed quantitative and qualitative study will be a randomized, controlled single blinded interventional study conducted in collaboration with the Indian Medical Association and College of General Practitioners in Pune, India. Study participants will include primary health care doctors- General Practitioners (GPs), General Physicians (Phy) and Pediatricians (Ped). An initial prescription analysis of participating doctors for one month will give us a pool of doctors who are non adherent to the GINA guidelines. 60 doctors from this pool will be randomly allocated equally to study group and control group. Only study doctors will be given the one day training programme CHAMPS with a one month in service support. Control doctors will follow all other study procedures except the training. Pre and post workshop questionnaires will be used to assess change in knowledge. Pre and post training programme prescription analysis will be done to assess change in prescription practices. 10 to 13 doctors will be administered a semi- structured qualitative interview to assess change in attitude. Study status: Appropriate EC approval obtained. Number of doctors as per Indian Medical Association records: GP= 395; Phy= 210; Ped= 470 (Total study population= 1075). Total calls made= 711, contacts established= 607, Positive response= 91, enrolled in screening procedure= 58. The most common reason for refusing to participate in the study is that they have already attended our training programme (20%). 19% were excluded because of age, 14% were super specialists, 14% had institutional practice, 10% said they did not have the time, 6% said they had limited asthma practice, 7% were relocated, 4% were not interested, 2% said they didn't need training and other causes were 4%.

Questions to discuss: Considering the challenges in recruitment of doctors, will it be appropriate to include doctors who are trained in alternative medicine yet practice modern medicine in this study, since almost 50% of primary health care in India is provided by these doctors.

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Disclosure of Interest: None Declared

OR-045

IDENTIFYING NOVEL PREDICTORS OF FUTURE ASTHMA EXACERBATION RISK FROM ROUTINE UK PRIMARY CARE CLINICAL RECORDS

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Aim: To identify novel predictors of future asthma exacerbation risk from UK primary care clinical records.

Methods: Observational study using Clinical Practice Research Datalink of asthma patients aged 12-80 years with no other chronic respiratory disease. Study period was 1 year before (baseline) and 1 year after (outcome) date of last blood eosinophil count. Outcome: ATS/ERS severe asthma exacerbation (hospital or ER attendance, or acute course of oral corticosteroids) Variates: demographics; co-morbidities and disease severity. Univariate logistic regression identified baseline variates associated with ≥ 2 exacerbations ($p \leq 0.05$). Variates were included in a multivariate model and reduced to a list of non-collinear predictors.

Results: Of 130,547 patients (34.1% male; median age [IQR] 49 [36, 63] years) 12.2% had 1 and 6.9% had ≥ 2 baseline severe exacerbations. Table shows predictors associated with ≥ 2 outcome exacerbations (multivariate results).

Image:

Potential risk factor	Reference category	Category	Odds ratio (95% CI)	p-value
Acute courses of oral corticosteroids	Absence of course	1 course	3.75 (3.51, 4.02)	<0.001
		2 courses	7.31 (6.73, 7.95)	<0.001
		≥ 3 courses	25.69 (23.90, 27.62)	<0.001
GINA management step	2	0	1.58 (1.42, 1.76)	<0.001
		1	1.18 (1.06, 1.30)	0.002
		3	1.28 (1.17, 1.38)	<0.001
		4	1.88 (1.77, 2.01)	<0.001
		5	3.12 (2.64, 3.68)	<0.001
Blood eosinophil count	$\leq 400/\mu\text{l}$	$> 400/\mu\text{l}$	1.48 (1.39, 1.58)	<0.001
GP consultations for LRTIs with prescriptions for antibiotics	Absence of consultation	1 consultation	1.18 (1.10, 1.26)	<0.001
		≥ 2 consultations	1.28 (1.17, 1.40)	<0.001
Paracetamol (acetaminophen)	Absence of prescription	≥ 1 prescription	1.23 (1.17, 1.30)	<0.001
Sex	Male	Female	1.21 (1.14, 1.28)	<0.001
Asthma-related outpatient visit	Absence of visit	≥ 1 visit	1.20 (1.09, 1.32)	<0.001
BMI	Normal (18.50-24.99 kg/m ²)	Overweight (25.00-29.99 kg/m ²)	1.08 (1.01, 1.16)	0.028
		Obese (≥ 30.00 kg/m ²)	1.17 (1.10, 1.25)	<0.001
Smoking status	Non-smoker	Current smoker	1.15 (1.07, 1.23)	<0.001
		Former smoker	0.93 (0.88, 0.99)	0.028
Gastro-oesophageal reflux disease	Absence of diagnosis	Presence of diagnosis	1.12 (1.05, 1.20)	0.001
Diabetes (type 1 or 2)	Absence of diagnosis and/or therapy	Presence of diagnosis and/or therapy	1.11 (1.05, 1.18)	<0.001
Rhinitis	Absence of diagnosis and/or therapy	Presence of diagnosis and/or therapy	1.10 (1.05, 1.16)	<0.001
Anxiety and/or depression	Absence of diagnosis	Presence of diagnosis	1.09 (1.03, 1.15)	0.001
Eczema	Absence of diagnosis	Presence of diagnosis	1.08 (1.03, 1.14)	0.003
Age	N/A	Per year of age	1.007 (1.005, 1.008)	<0.001

Conclusion: Novel predictors of future asthma exacerbation risk identified in a real-life setting include: elevated blood eosinophils; antibiotics for LRTIs; gastro-oesophageal reflux; diabetes; rhinitis; anxiety and/or depression and eczema.

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Disclosure of Interest: None Declared

OR-046

GREEK GUIDELINES FOR COPD IN PRIMARY HEALTH CARE: A FOCUS ON THE PROCESS AND METHODOLOGY

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Brief outline of context: Within the supervision of the Clinic of Social and Family Medicine at the School of Medicine, University of Crete, the COPD review group in its effort to develop the first guidelines on how to manage COPD in the Greek primary health care setting applied a specific evidence-based methodology with the involvement of the International Primary Care Respiratory Group (IPCRG).

Brief outline of what change you planned to make: The process of the development of the clinical guidelines utilizes a modified algorithm introduced by Kaiser Permanente (2012) and the ADAPTE methodological framework (<http://www.adapte.org>) and involves two stages. The first stage involved the identification, review and assessment of selected guidelines by using the local experience gained at the University of Crete and the AGREE tool (<http://www.agreecolaboration.org>). In parallel, the systematic reviews relevant to the clinical questions set by the Greek reviews groups were assessed by the AMSTAR tool (<http://www.biomedcentral.com/content/pdf/1471-2288-7-10.pdf>), while the quality of the existing literature has been also assessed. The second stage involved the formulation and evaluation of guideline recommendations by utilizing the methodological framework of the Australian National Health and Medical Research Council (<http://www.nhmrc.gov.au>).

Assessment of existing situation and analysis of its cause: An expert consensus panel with the involvement of the IPCRG organization discussed and approved the formed recommendations.

Strategy for change: who, how, following what timetable: The COPD review group assessed 11 guidelines and 142 research studies regarding COPD. The evaluation process revealed 4 guidelines and 38 studies that were used in order to formulate 56 statements/recommendations for COPD concerning 5 areas of interest (diagnosis and diagnostic tools, interventions, disease prevention, referral, health professionals and health care units).

Message for others: This initiative provided a methodological framework for creating guidelines that was utilized the best scientific evidence available regarding the prevention and management of COPD for the first time in Greece with the assistance of other experts parties ie; IPCRG to create suitable for the primary care settings recommendations.

This abstract has also been submitted for the WONCA 2014 conference in Lisbon.

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Disclosure of Interest: None Declared

OR-047

ANKLE/BRACHIAL INDEX (ABI) MEASUREMENT IN MIDDLEAGE AND ELDERLY COPD PATIENTS-A PILOT STUDY

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Aim: As smoking is a risk factor for both COPD and peripheral arterial disease (PAD), COPD patients are at risk of asymptomatic PAD which is a predictor of coronary (CAD) and carotid artery disease. The Ankle Brachial Index (ABI) is used to detect PAD and may be a marker of cardiovascular risk. An ABI <0.90 has a specificity of >98% for the diagnosis of PAD and a >92% specificity for the prediction of CAD and stroke. We aimed to determine the proportion of asymptomatic PAD in COPD patients attending the University of Alberta Hospital and the association between ABI and lung function tests in COPD patients.

Methods: A cross-sectional pilot study was conducted of consecutive inpatient and out-patients >50 years old with a smoking history who were recruited over two months. Excluded were patients with previously diagnosed PAD, unstable angina, recent myocardial infarction, abdominal, intracranial eye or lung surgery, or who refused to participate or were terminally ill. Vascular risk factors, ABI measurements (supine, standing and post exercise), self reported PAD symptoms and spirometry were obtained. GOLD criteria were used to classify COPD. Two measurements of systolic blood pressure on all limbs was done in the supine, standing and post exercise supine positions with a sphygmomanometer and a Doppler ultrasound, and the ABI was calculated for all 3 positions. A 3 minute walk test assessed exercise tolerance. Data were expressed as means and standard deviations (SD). Dichotomous outcomes were assessed using Chi-square statistics. Regression was used to analyze the association of ABI with vascular risk factors, FEV1, FEV1/FVC measures and abnormal walking distance. Statistical analysis was performed with SPSS. A p value of < 0.05 was considered significant.

Results: 30 patients were recruited. Mean age was 67.7 (SD 10.5); 11 (37%) were female;. Fifteen subjects (50%) had a history of COPD and none had previously been diagnosed with PAD. ABI <0.9 was seen in 7/21 (33.5%) COPD and 0/9 (0%) in non-COPD subjects in supine position (p=0.07); and in 9/21 (42.9%) COPD vs 0/9 (0%) non-COPD subjects after exercise (p= 0.028). No significant association was observed after adjusting for other factors in the regression analysis.

Conclusion: A significant proportion of asymptomatic PAD was seen in patients with spirometry proven COPD. ABI may be a simple, reliable and sensitive screening tool to assess cardiovascular risk in COPD patients.

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Disclosure of Interest: None Declared

OR-048

EFFICACY OF ONCE-DAILY TIOTROPIUM RESPIMAT® 5 MICROGRAMS FROM FIVE PHASE III TRIALS IN ADULTS WITH SYMPTOMATIC ASTHMA

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Aim: Recent clinical trials have indicated that the long-acting antimuscarinic agent tiotropium, a once-daily long-acting bronchodilator, may provide benefit to patients with symptomatic asthma. We investigated primary efficacy data (lung function, risk of severe exacerbation, and seven-question Asthma Control Questionnaire [ACQ-7] response) from five Phase III, randomised, double-blind, parallel-group trials that evaluated the efficacy and safety of once-daily tiotropium Respimat® add-on versus placebo Respimat® add-on in adults with symptomatic asthma on inhaled corticosteroid (ICS) ± long-acting β_2 -agonist (LABA) maintenance therapy.

Methods: Two 48-week trials of tiotropium Respimat® 5 µg (PrimoTinA®: NCT00776984, NCT00772538) in patients on high-dose ICS (≥800 µg budesonide equivalent) + LABA; two 24-week trials of tiotropium Respimat® 5 µg and 2.5 µg (MezzoTinA®: NCT01172808, NCT01172821) in patients on moderate-dose ICS (400-800 µg budesonide equivalent); one 12-week trial of tiotropium Respimat® 5 µg and 2.5 µg (GraziaTinA®: NCT01316380) in patients on low-dose ICS (200-400 µg budesonide equivalent).

Results: 3476 patients were treated, of whom 1128 received tiotropium Respimat® 5 µg. Once-daily tiotropium Respimat® 5 µg significantly improved lung function (Table) in patients with not fully controlled asthma receiving low- to high-dose ICS. In addition, tiotropium Respimat® 5 µg reduced the risk of severe exacerbations versus placebo (co-primary end point) in patients on high-dose ICS + LABA (hazard ratio 0.79; p=0.0343), and there was an increase in ACQ-7 responder rate (co-primary end point) with the 5 µg dose (odds ratio 1.32; p=0.0308) compared with placebo in patients on moderate-dose ICS.

	Adjusted mean of difference in response from placebo (mL)		
	PrimoTinA® (Week 24)	MezzoTinA® (Week 24)	GraziaTinA® (Week 12)
	Tiotropium Respimat® 5 µg ^a (n=456)	Tiotropium Respimat® 5 µg ^a (n=517)	Tiotropium Respimat® 5 µg (n=155)
Peak FEV ₁ (0-3h)	110 (p<0.0001)	185 (p<0.0001)	128 (p=0.0005)
Trough FEV ₁	93 (p=0.0058)	146 (p<0.0001)	122 (p=0.0010)
FEV ₁ AUC _(0-3h)	107 (p<0.0001)	182 (p<0.0001)	125 (p=0.0003)
Peak FVC _(0-3h)	87 (p=0.0050)	95 (p<0.0001)	57 (p=0.1714)
^a Pooled data AUC, area under the curve; FEV ₁ , forced expiratory volume in 1 second; FVC, forced vital capacity			

Conclusion: Once-daily tiotropium Respimat® significantly improves lung function in adult patients with symptomatic asthma receiving a range of doses of ICS, including even high-dose ICS + LABA, suggesting a potential role for this treatment as add-on to ICS in adults with symptomatic asthma.

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Disclosure of Interest: D. Price Shareholder of: Shares in AKL Ltd which produces phytopharmaceuticals and owns 80% of Research in Real Life Ltd and its subsidiary social enterprise Optimum Patient Care, Grant / Research Support from: UK National Health Service, Aerocrine, Astra Zeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Meda, Merck, Mundipharma, Novartis, Nycomed, Orion, Pfizer, Takeda, Teva and Zentiva, Consultant for: Almiral, Astra Zeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Merck, Mundipharma, Medapharma, Novartis, Napp, Nycomed, Pfizer, Sandoz and Teva, Speaker Bureau of: Almiral, AstraZeneca, Activaero, Boehringer Ingelheim, Chiesi, Cipla, GlaxoSmithKline, Kyorin, Novartis, Medapharma, Merck, Mundipharma, Pfizer, SkyePharma, Takeda and Teva, E.

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OR-049

CLINICAL AUDIT OF ACUTE COPD EXACERBATIONS FROM REGISTRIES AND CLINICAL DATABASES IN PRIMARY CARE SETTINGS FROM COPD PATIENTS PRESENTED TO THEIR PRIMARY CARE PRACTITIONERS

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Research question: Which health determinants can be identified for predicting acute exacerbations to patients with chronic obstructive pulmonary disease (COPD) in the community?

Background: Patients with COPD from primary care settings presented with acute COPD exacerbations will be recorded through registries and clinical databases, attending their primary care physician in the context of a clinical audit. All acute COPD exacerbations will be recorded, including age, sex, race, socio-economic status, COPD spirometry stage and category, previous COPD exacerbations, current medications, smoking habit, preventive measures such as immunisation and smoking cessation, long term oxygen therapy, sufficient access to pulmonary rehabilitation, appropriate and up to date management of COPD in primary care according to current COPD guidelines, patient's compliance to treatment, self management plan, other comorbidities, adequate and prompt treatment of the exacerbation within the primary care setting and/or referral for admission to secondary care.

Possible methodology: Results of the initial circle of this audit will be presented with descriptives and statistical correlations among the variables recorded, highlighting those correlations that are statistically significant ($p < 0,05$). Potential confounders also can be adjusted with regression analysis.

Questions to discuss: This is a research idea proposal aiming to identify health determinants for predicting acute exacerbations of patients with COPD in the community. These health determinants can be further reviewed so to explore in what extend they contribute to a better or poorer prognosis of COPD. Are any of these factors modifiable so to avoid COPD exacerbations? How can this be achieved? Is it possible to develop a risk model?

Disclosure of Interest: None Declared

PRISMS: A RAPID SYSTEMATIC META-REVIEW OF THE EVIDENCE ON SUPPORTING ASTHMA SELF-MANAGEMENT

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Aim: Asthma self-management is an evidence-based intervention recommended in national and international guidelines. We aimed to synthesise the findings of systematic reviews (SRs) to provide a high-level overview of self-management support strategies to inform provision of asthma services.

Methods: We searched systematically and screened 7 electronic databases, and performed snowball and manual searches for SRs reviewing asthma self-management support. Of interest were measures of asthma control and asthma-related quality of life (QoL), and the context (composition, delivery, and setting of interventions). We undertook narrative synthesis in order to identify the optimal configuration of asthma self-management support.

Results: 18 SRs published between 1995 and 2012, reporting 157 randomised controlled trials were included. Asthma self-management reduced unscheduled healthcare, and improved QoL and measures of control. The interventions were diverse, targeting healthcare professionals, patients and/or caregivers, as well as being tailored to specific populations by age or ethnicity. Contexts varied, including traditional healthcare settings as well as school-based, home-based, and remote delivery through computerised programmes. Optimal asthma self-management was defined as including education with a written asthma action plan and supported by regular review: adherence was improved when self-management was delivered as a component of Chronic Care Model. Targeting of interventions is important: e.g. paediatric programmes reported significant reductions in asthma morbidity; culturally specific programmes improved asthma related quality of life; and interventions delivered post-asthma admission reduced risk of future emergency presentation.

Conclusion: There is strong evidence that self-management of asthma is effective in reducing hospital admissions and emergency department visits, and increasing QoL of people with asthma. When implementing asthma self-management support, providers of services for people with asthma should consider not only the content of the intervention (education and action plan), but also the most appropriate delivery mode and setting for the target population, and the wider healthcare context. Delivery as a component of integrated supportive long-term condition care optimises the impact of asthma self-management.

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Department of Health Disclaimer: The views and opinions expressed therein are those of the authors and do not necessarily reflect those of the HS&DR programme, NIHR, NHS or the Department of Health,

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OR-051

UNDERSTANDING VARIATIONS IN OUTCOME IN COPD: USE OF ROUTINE CLINICAL DATA

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Research question: Can routine observational data contained within the Hampshire Health Record (HHR) be used to characterise patients with COPD, in order to highlight variations in healthcare provision and outcome? Can factors be identified which might explain inequalities, thereby allowing targeted interventions to improve care?

Background: The “NHS Atlas of variation in Healthcare for People with Respiratory disease”

<http://www.rightcare.nhs.uk/atlas/> has highlighted significant regional variation in COPD healthcare outcomes throughout the UK and demonstrated scope for improvement. We recognise the importance of investigating this in our local population of Hampshire, S. England, where a three-fold difference in death rates has been demonstrated. The Hampshire Health Record (HHR) is an NHS electronic database which holds routine coded clinical data for over one million patients and contains information from both primary and secondary care.

Possible methodology: We plan a retrospective observational study, using individual patient-anonymised data held in the HHR. We will use selected codes to: 1. Define a cohort of patients with a practice coded diagnosis of COPD; 2. Describe this cohort in terms of demography and baseline characteristics (age, sex, ethnicity, deprivation indices, smoking history, FEV₁/FVC ratio, FEV₁ %predicted, BMI); 3. Assess processes of care, in terms of patient monitoring (lung function, dyspnoea, pulse oximetry, cardiovascular risk factors and psychological morbidity), active intervention (inhaler technique review, provision of management plans, smoking cessation support, immunisations, pulmonary rehabilitation), and medication use over the following 2 years; 4. Assess outcomes (exacerbation frequency, hospital admissions and attendances and mortality); 5. Assess co-morbidities (IHD, CCF, stroke, diabetes, CKD, rhinitis, anxiety and/or depression, high or low BMI, osteoporosis, OSA).

Read codes (a coded classification of clinical terms) are used in primary care in the UK to record clinical information electronically. Selected codes from the Read directory will be used to interrogate the primary care data in the HHR as described above. Hospital discharge data will be identified from hospital episode statistics (HES) which use ICD-10 (International Classification of Disease, version 10) codes.

Questions to discuss: 1. Inherent in any observational database study are limitations in the completeness and validity of the data. How can we reduce these?

2. As COPD exacerbations are not always well coded in GP records, what are the best surrogate markers? Current best practice defines exacerbations according to GINA guidelines; can we develop a coding strategy to maximise the reliability by which we detect exacerbations?

3. How can we best develop a directory of code sets?

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OR-052

PROVIDING A COCOON OF CARE: INTEGRATING SCHOOLS, CLINICS AND PARENTS

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Brief outline of context: Up to 12% of children have been diagnosed with asthma by high school graduation. These children spend many hours each day in school where they may need attention for asthma related problems such as exacerbations. No in school care can be delivered without appropriate orders and medications.

Brief outline of what change you planned to make: Asthma Action Plans can provide school personnel with specific actions to take for children with asthma problems.

Assessment of existing situation and analysis of its cause: Prior to our intervention only 21 children in a school district of 10,000 children had Asthma Action Plans (AAP) at school. To obtain an AAP schools sent letters to parents asking them to have their physician or other clinician complete an AAP and then have the parents or child bring it to school. A small work group from one health care facility had been working for 5 years to increase the percent of children with asthma who had a school AAP.

Strategy for change: who, how, following what timetable: As part of a national BEACON grant, we develop a community work group and obtained input from all stakeholders prior to designing an school AAP system. Focus groups of school nurses and personnel, parents of children with asthma and family physicians and pediatricians caring for children with asthma provide the input.

Effects of changes: Based on focus group data, the community based asthma work group developed a standardized format for the AAP to assure that the same information was included in all AAPs. Health care professionals outside of the school asked that we also develop a mechanism to assure that the completed forms reach the schools. Input from all stakeholders asked that we also develop a standardized form to allow school nurses to provide feedback to parents and clinicians when a child was having problems.

Measurement of improvement: The asthma workgroup developed an acceptable standardized AAP that was signed by the parents and students in third grade and beyond which was sent to the school via an electronic portal. The portal allowed school nurses to have immediate access to any child's AAP who was enrolled within that nurse's school district. The portal system also provided reminders for AAPs reaching their expiration dates. In addition, a standardized report from school to clinics was developed to be returned via the portal. A copy of the report was sent to parents by letter with a hope to use a parent portal soon.

Over the first 12 months the number of AAPs increased from 21 to 1298 in the participating school districts. School nurses used the return messages to the clinics and parents 12 times over the year.

Lessons learnt: Community collaboration can facilitate a process that was otherwise stalled.

Using electronic portals assured that all completed AAPs reached the schools.

Despite requests for a school to clinic feedback mechanism, it was seldom used in the first year.

Message for others: Integration of asthma care can be accomplished including clinics, schools and parents. Electronic data transfer facilitates the transfer of the data and the ease of its use.

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Disclosure of Interest: None Declared

OR-053

PHENOTYPING AIRWAYS DISEASE BY CLUSTER ANALYSIS IN PRIMARY CARE: 6 DISTINCT CLUSTERS IDENTIFIED

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Aim: Current obstructive airways disease classification does not sufficiently reflect disease patterns and limits personalised management and novel treatment development. Cluster analysis to discover possible phenotypes is one of the promising approaches to develop a new taxonomy in airways disease. The majority of current phenotyping studies focus on the minority of patients with (very) severe asthma or COPD, while the majority of airways disease is seen in primary care.

Aim: To identify phenotypes in a broad spectrum of obstructive airways disease in a primary care population.

Methods: In 952 of 9225 cases with full data on 13 variables reflecting physiological, lung function, laboratory and questionnaire data from a structured primary care Asthma/COPD service were used to identify clusters using hierarchical clustering in R statistics. Silhouette statistics and clinical judgement of coherent patterns of disease were used to establish the optimal number of clusters. Decision rules developed using the 'rpart' package were used to allocate the remaining cases with sufficient data.

Results: The optimal number of clusters was 6. 5424 cases had sufficient data to be allocated by the allocation rules based, in order of importance, on smoke exposure, FEV₁% predicted, ACQ score, age of onset, hyperactivity, bronchitis score (CCQ question 6), CCQ functional status score, FEV₁/FVC ratio, and CCQ mental status score. The clusters identified in order of increasing smoke exposure are: A-Overweight, non smoking, normal lung function, uncertain diagnosis (15% of patients); B-Younger onset allergic asthma (39%); C-Younger onset allergic asthmatic smokers with bronchitis (15%); D-Adult onset, high symptomatic asthma (6%); E-Smoking Non allergic asthma/COPD overlap with obesity and eosinophilia (9%); and F- late onset smoking COPD (17%).

Conclusion: Six distinct groups could be identified in this primary care population using cluster analysis.

Implications: These six groups may represent distinct phenotypes if differences in disease progression and/or treatment responses are shown.

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OR-054

FACTORS THAT AFFECT READINESS TO QUIT SMOKING. A 22 COUNTRY EUROPREV SURVEY FROM PRIMARY CARE

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Aim: The aim of this primary care based study was to see how patients' characteristics relate to their readiness to change risky behaviour.

Methods: This was a multinational cross-sectional survey, conducted in primary care in 22 European countries. The study was coordinated by EUROPREV (European Network for Prevention and Health Promotion in Family Medicine and General Practice). The stratified sample was consecutive attenders from randomly selected family practices, who were asked to fill in a questionnaire about attitudes towards prevention and about lifestyle.

Results: The questionnaire was answered by 7947 patients in 224 primary care practices in 22 European countries. In 11 countries, that reported the response rate, it was 90,7%.

Risky lifestyle was reported less frequently by women than by men: 1860 women (23.4%) smoked vs 2638 men (33.2%), risky alcohol consumption by 348 women (8.19%) vs 1009 men (23.07%), inadequate physical activity was reported by 617 women (12.68%) and 614 men (16.45%).

Among smokers only 537 (40,9%) were confident of successfully changing their behaviour, comparing to 501 (60%) patients with unhealthy dietary habits, 467 (51,65 %) of physically inactive and 250 (60,3%) among risky drinkers.

EU countries' citizens were already changing smoking habits more often than non-EU citizens. Participants in the age group 30-49 were dubious about changing their smoking habits. Patients, whose family physician had ever initiated a discussion about smoking, those who did not remember if he/she had ever touched the issue of smoking, remained dubious. Patients, who visited family practice more than 2 times in last year, were more willing to change smoking habits

Conclusion: The results of this study could be useful in improving counselling strategy in family practice, they may help practice teams to determine which patients are most likely to change their lifestyle and which patients need more attention when planning intervention programs.

We showed that counselling on unhealthy habits motivates patients for lifestyle change (except smokers), and that the most important motivator for lifestyle change was visiting the family physician more than two times per year.

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Disclosure of Interest: None Declared

OR-055

CHRONIC OBSTRUCTIVE PULMONARY DISEASE IN CANADIAN PRIMARY CARE PRACTICES: A CPCSSN STUDY.

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Aim: To determine the prevalence of COPD, its association with other common chronic conditions and the current patterns of medication use for COPD in Canadian primary care practices.

Methods: The Canadian Primary Care Sentinel Surveillance Network (CPCSSN) is an Electronic Medical Records based database that extracts information on 5 common chronic conditions and 3 additional neurologic conditions from participating primary care practices. At the time of this study it included 250, 346 patients from 380 physicians in 10 networks covering 8 provinces of Canada using 12 different EMRs. We conducted a cross sectional analysis of CPCSSN data for prevalence of COPD, presence selected other common chronic conditions and use of COPD related medications.

Results: The overall prevalence of recognized COPD in the CPCSSN data set was 4.0%, which represents a population rate of 3.2-3.4% after adjustment for differences between practice populations and the general population. Multimorbidity was common, with 76.7% of COPD patients having at least one other chronic condition, and rates of co-morbidity being higher than that noted for the other chronic conditions monitored by CPCSSN. Anticholinergics were the most commonly prescribed medications (61%) followed short acting beta agonists (48%), inhaled corticosteroids (40%) and long acting beta agonists (38%). Most patients were on more than one medication and over 80% were also using other non-COPD related medications.

Conclusion: This study found rates of identified COPD in Canadian primary care practices that are similar to those in other developed countries. These results highlight the importance of recognizing that COPD is normally present in combination with other chronic conditions. As is the case in other countries, prevalence of recognized COPD is much lower than that detected in population based samples undergoing spirometry.

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Disclosure of Interest: None Declared

OR-056

EFFECTS OF THEOPHYLLINE ON HOSPITALISATIONS AND EXACERBATIONS IN A POPULATION OF COPD OUTPATIENTS IN BAVARIA, GERMANY

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Aim: Theophylline is commonly used in the treatment of COPD, yet there is considerable uncertainty regarding its effectiveness and safety. The present study evaluates the effect of theophylline on hospitalisations and exacerbations in a population of COPD outpatients in Bavaria, Germany.

Methods: Medical records of 30.330 patients enrolled in a disease management programme for COPD were analysed. Propensity scores were calculated using a multivariable logistic regression model to control for baseline characteristics and used to match patients receiving theophylline therapy at start of follow-up with patients receiving no such therapy. Hospitalisations and exacerbations were assessed over a follow-up period of up to 42 months using Kaplan-Meier estimators and Cox regression models.

Results: 1.496 patients receiving theophylline therapy were matched with 1.496 of 23.354 potential controls without theophylline therapy. The probability of suffering an exacerbation in the follow-up period was 33.5% for the control group and 42.4% for the theophylline group [hazard ratio (HR) 1.41; 95% confidence interval (CI) 1.24 - 1.60], yielding a number needed to harm (NNH) of 11 (95%CI 7.7-20.9). Hospitalisations occurred in 11.4% of the control group and 17.4% of the theophylline group (HR 1.61; 95% CI 1.29 - 2.01), yielding a NNH of 17 (95%CI 11.0-34.5).

Conclusion: The prescription of theophylline was associated with an increased occurrence of both exacerbations and hospitalisations. Insufficient efficacy of medication regimen or undesirable side-effects of theophylline might worsen the course of disease. Therefore, the therapeutic value should be reconsidered as the harm could outweigh the benefit.

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Disclosure of Interest: M. Mehring: None Declared, J. Fexer: None Declared, E. Donnachie Employee of: Employee of The Association of Statutory Health Insurance Physicians in Bavaria (German: Kassenärztliche Vereinigung Bayerns, KVB) This Association is a statutory public corporation and therefore a non-profit organization. As a contract partner to the Bavarian Disease Management Programs, the KVB represents the interests of the participating physicians. It is responsible for the distribution of remuneration, retaining a percentage of this to cover administrative costs., M. Keller Employee of: Employee of The Association of Statutory Health Insurance Physicians in Bavaria (German: Kassenärztliche Vereinigung Bayerns, KVB) This Association is a statutory public corporation and therefore a non-profit organization. As a contract partner to the Bavarian Disease Management Programs, the KVB represents the interests of the participating physicians. It is responsible for the distribution of remuneration, retaining a percentage of this to cover administrative costs., F. Hofmann Employee of: Employee of The Association of Statutory Health Insurance Physicians in Bavaria (German: Kassenärztliche Vereinigung Bayerns, KVB) This Association is a statutory public corporation and therefore a non-profit organization. As a contract partner to the Bavarian Disease Management Programs, the KVB represents the interests of the participating physicians. It is responsible for the distribution of remuneration, retaining a percentage of this to cover administrative costs., S. Wagenpfeil: None Declared, A. Schneider Grant / Research Support from: AS received grants from the German Ministry of Health as an external expert for the development of the disease management programs asthma and COPD and received grants for DMP lectures.

OR-057

SUPPORTING SMOKING CESSATION IN AUSTRALIAN PRIMARY CARE: RESULTS OF THE QUIT IN GENERAL PRACTICE STUDY

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Brief outline of context: Tobacco use remains a key cause of preventable morbidity and mortality. Primary care offers an opportunity to support cessation and primary care interventions can be effective.

Brief outline of what change you planned to make: The aim of this three arm cluster randomized trial was to determine if personalized smoking cessation support provided primarily by the practice nurse (PN) is more effective than referral to a telephone Quitline or normal GP care.

Assessment of existing situation and analysis of its cause: GPs do not systematically implement cessation advice due to barriers including lack of time. New models are needed to increase uptake and effectiveness. Practice nurses have become key members of the primary care team and have the potential to be effective in supporting behaviour change.

Strategy for change: who, how, following what timetable: PNs from practices randomized to the PN intervention arm received a one day training course in smoking cessation support and then telephone mentoring from an experienced counsellor. Participants in the study were invited to see the practice nurse for an assessment followed by three follow-up visits of approximately 30 minutes duration.

Effects of changes: PNs, GPs from 101 practices and 2390 patients participated in the study. Only 43% of participants in the PN intervention group attended to see the nurse.

Measurement of improvement: Outcome measures were sustained abstinence and point prevalence abstinence at 3 month and 12 month follow-up collected by telephone interviewers blind to group allocation. Semi-structured telephone interviews were also conducted with PN and GPs taking part in the study. Follow-up at 12 months was 82%. Assuming all those lost to follow-up relapsed, the sustained and point prevalence abstinence rates respectively at three months by group were: PN intervention 13.1% and 16.3%; Quitline referral 10.8% and 14.2%; Usual GP care 11.4% and 15.0%. At 12 months the rates were: PN intervention 5.4% and 17.1%; Quitline referral 4.4% and 18.8%; Usual GP care 2.9% and 16.4%. Multilevel regression analysis showed no effect of intervention group overall but participants who received partial or complete PN support were more likely to report sustained abstinence (partial support OR 2.27; complete support OR 5.34). In the semi-structured interviews PNs reported that time and lack of systems in the practice such as a register and recall system for participants were barriers to implementation of the intervention.

Lessons learnt: The results show no difference by intervention group on intention to treat analysis. Those patients who received more intensive nurse intervention were more likely to quit. This suggests that PN led cessation support can be effective if patients are engaged and attend for follow-up.

Message for others: PN led smoking cessation support shows promise but a model is needed that selected interested patients and where the nurse is supported to deliver the intervention in terms of time and practice systems.

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Disclosure of Interest: None Declared

OR-058

TREATMENT OF COPD AT THE VALSTA PRIMARY HEALTH CARE CENTRE IN STOCKHOLM

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Aim: The Chronic Obstructive Pulmonary Disease (COPD) is a common disease, which is mainly managed in primary care. On international level the Global Initiative for Chronic Obstructive Lung Disease (GOLD) and in Sweden the Medical Products Agency (MPA) have published guidelines about the treatment of COPD but the adherence to them in primary care is insufficient.

The first objective of this study was to survey which pharmacologic treatment is prescribed to the patients with stable COPD at the Valsta Primary Health Care Center, to which extend this treatment follows the MPA's guidelines and if this is affected by patient's sex or stage of COPD. The second objective was to examine if smokers with COPD were supported at the Valsta Primary Health Care Center in their attempt to quit smoking and how efficient this support was.

Methods: This study was a patient medical record based quantitative retrospective study. In the inquiry about pharmacologic treatment for stable COPD were included all the patients that had been followed-up for the disease or became diagnosed with COPD at the Valsta Primary Health Care Center in northern Stockholm during the period 22/10-2009 to 22/06-2012. In the inquiry about smoking and support for smoking cessation the period of study was 2/10-2009 to 22/06-2011.

Results: Registrated spirometric values were found in 36 of 68 patients (53%) with COPD diagnosis. Among the 25 patients (37%) with the diagnosis verified by spirometry, 14 (21%) received pharmacologic treatment according to the guidelines. The prescription of non-recommended treatment was more common among the patients with COPD stage I-II ($p<0,05$) but there was no statistically significant difference between men and women. Support for smoking cessation was offered at the Valsta Primary Health Care Center to 16 of 18 patients (89%) with COPD during the period of study. Data about the follow-up of smoking habits existed for 12 (75%) of these patients, 4 of which (30%) had successfully stopped smoking.

Conclusion: The study showed a low adherence to MPA's and GOLD's guidelines about the pharmacologic treatment of stable COPD at the Valsta Primary Health Care Center in Stockholm. On the other hand most of the smoking patients with COPD received some type of support in their attempts to quit smoking but the effect of that could not be estimated adequately due to lack of data in patients' medical records.

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OR-059

BREATHLESSNESS PREVALENCE AND CAUSE IN AN ENGLISH URBAN PRIMARY CARE POPULATION

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Brief outline of context: 10% of adults suffer long-term breathlessness: a predictor for hospital admission and premature mortality. Local data and the literature confirms that diagnostic error in breathlessness-causing conditions e.g COPD and heart failure is a burden to our patients and health economy.

Brief outline of what change you planned to make: Do we recognise and diagnose correctly our breathless population?

Assessment of existing situation and analysis of its cause: We looked at symptom and diagnostic coding from 410,868 electronic records over 10 years for a population >40 years from forty GP surgeries in the inner city. 5% of patients had a record of breathlessness, range 1%>12%. 56% were women, 44% were current smokers. 20% had a body mass index (BMI) >35 but 28% had never smoked and had a BMI < 28. 21% of a subgroup of 3416 with first breathlessness symptom in 2012 did not have any cause diagnosed from asthma, obesity, COPD or heart failure. In the 2012 cohort we found that when we looked at those with breathlessness recorded as a *problem* rather than symptom a large proportion 408/872 (47%) had never smoked whereas smokers and ex-smokers were otherwise the most prevalent group 2522/3416 (74%) in the overall sample.

Strategy for change: who, how, following what timetable: We don't record as much breathlessness in our population as expected and there is variation between GP providers. We find it more difficult to find a diagnostic code for breathless people who have never smoked than in those who have. We need to understand reasons for variation and develop a standard for correct coding, better recognition and a pathway to diagnosis and/or treatment for the breathless regardless of smoking history.

Effects of changes: Commissioners are developing a breathlessness service to encourage accurate and complete diagnosis once breathlessness is recognised. We anticipate a media campaign to raise awareness that disabling breathlessness can be treated and isn't just about ageing.

Measurement of improvement: We will review variation in breathlessness recording, accuracy of disease registers, investigate in more detail what happens to people who never smoked and are breathless, and describe the problems of the undiagnosed breathless.

Lessons learnt: Chronic breathlessness isn't routinely recorded as a problem but to do so could trigger annual review, for reconsideration of cause and so encourage earlier diagnosis of co-morbidity. A prevalent culture in COPD diagnosis appears to be causing diagnostic error. Standardisation of pathways for breathlessness assessment should be introduced and followed regardless of smoking history, thereby avoiding recourse to a COPD diagnosis before all evidence is available.

Message for others: Incentives in primary care to ensure accurate and complete diagnosis for the breathless should be aimed at excluding the differentials rather than promoting a single cause before assessment is complete. Breathlessness can be difficult to diagnose, and a symptom-based service is required to attend to factors that promote deconditioning and reduce physical activity such as obesity, depression and anxiety.

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Disclosure of Interest: None Declared

OR-060

EPIDEMIOLOGICAL FACTORS OF SMOKING AMONG HIGH SCHOOL STUDENTS

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Aim: There are no recent data smoking habits of high-school students in Greece. The primary objective of the study was to determine these epidemiological factors. The primary objective of the study was to determine these epidemiological factors.

Methods: The smoking habits of 927 high-school students (471 boys and 456 girls), aged between 15-18 years, in four regions of a Greek area (the island of Cos), were examined. Study data were collected using a questionnaire.

Results: It was found that 32.48% of boys and 27.19% of girls are smokers; 43.3% had started smoking before the age of 14. The mean age for starting smoking was 14.4 \pm 1.9 years for the boys and 14.9 \pm 1.6 years for the girls. As many as 22.8 % of the students smoke 6 to 10 cigarettes per day and 21.5% 16 to 20 cigarettes per day; 40.2% reported that they smoke out of spite. Students reported that their parents are aware that their offspring smoke in a proportion of 36.7%. Social standards and parental example were found to be the main determinants for starting smoking. The majority of the students (95.2%) stated that they are aware of the hazards associated with smoking.

Conclusion: Our findings highlight the need for smoking control interventions aimed at young people. Smoking is a major, yet preventable cause of morbidity and mortality. For these reasons, we view that adolescents should be targeted with a well-smoking policy and not just an initiative for raising awareness of smoking hazards.

Keywords: Smoking, Students

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OR-061

COPD AS COMORBIDITY: ITS IMPACT ON DIABETES CONTROL IN NEWLY DIAGNOSED DIABETES PATIENTS. A PROSPECTIVE OBSERVATIONAL STUDY IN GENERAL PRACTICE.

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Aim: To describe the effect of COPD as a comorbid condition on longitudinal glycaemic control (HbA_{1c}) and systolic blood pressure (SBP) in a primary care cohort of patients with type 2 diabetes.

Methods: In this cohort study in a practice-based research network in the Netherlands we included all adult patients with newly diagnosed type 2 diabetes within the study period (1985-2007). We tested differences in the five year longitudinal development of HbA_{1c} and systolic blood pressure (SBP) according to comorbidity profile (presence or absence of COPD at the time of diabetes diagnosis) in a mixed model analysis with correction for relevant covariates. In subgroup analyses we tested if potential differences were modified by age, gender, socioeconomic status (SES) and body mass index (BMI).

Results: 610 diabetes patients with a mean follow-up of 6.2 years were analysed. COPD was present at baseline in 63 patients (10.3% of the study population). Presence of COPD did not significantly influence the longitudinal development of HbA_{1c} ($p=0.54$) or systolic blood pressure ($p=0.33$). However, in subgroup analyses we observed significant effect modification by SES ($p<0.01$) and BMI ($p=0.03$) on the course of SBP in the presence of COPD. Middle and high SES groups with comorbid COPD showed increasing SBP rates over time, whereas in the low SES group with comorbid COPD, SBP decreased over time. In the absence of COPD, SBP was stable over time but values were higher in patients with increased BMI.

Conclusion: Longitudinal development of SBP in diabetes patients who have comorbid COPD is significantly influenced by SES but not by BMI compared to diabetes patients without comorbid COPD. The longitudinal development of HbA_{1c} is not significantly influenced by comorbid COPD. COPD as comorbid condition influenced longitudinal diabetes outcomes, but has complex interactions with other patient characteristics. Further research is needed to verify these findings.

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OR-062

FRACTIONAL OF EXHALED NITRIC OXIDE (FENO) LEVELS IN NON-SMOKING AND NON-BIOMASS FUEL EXPOSED ASTHMATIC PATIENTS WITH FIXED AIRWAY OBSTRUCTION IN VIETNAM

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Research question: *Are FeNO levels different between asthmatic patients with and without fixed airways obstruction?*

Background: *Although Asthma is considered as a fully reversible obstructive airway disease, some asthma patients exhibit fixed obstruction due to structure remodel of the airway even in the absence of environmental exposures associated with COPD. FeNO level in this phenotype of asthma is unclear. We will test FeNO levels in 100 fixed airway obstruction asthma patients identified in a previous study regarding clinical characteristics of fixed airway obstruction asthma in in the same setting.*

Possible methodology: *Cross-sectional descriptive study, FeNO will be measured by Niox Mino portable device of Aerocrine Company in 100 fixed obstruction asthma patients. This value then will be compared with value of 100 asthma patients those have non-fixed obstruction asthma in the same setting*

Questions to discuss: *We expect FeNO in fixed obstruction asthma group will be different from non-fixed obstruction asthma patients.*

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Disclosure of Interest: None Declared

OR-063

PERSPECTIVES RELATING TO CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) MANAGEMENT AMONG CANADIAN PRIMARY CARE PHYSICIANS.

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Aim: To gain insight about perspectives relating to COPD management among primary care physicians with a view to identify challenges and unmet needs that could potentially be addressed with targeted educational initiatives.

Methods: Primary care physicians (n=153) from across Canada completed a self administered questionnaire via the internet. Regional quotas for questionnaire completion were applied. The questionnaire was comprised of 31 questions dealing with a broad spectrum of COPD management issues, including unmet needs. Survey completion took approximately 20 minutes and physicians were compensated for their participation (\$80.00CAN).

Results: Regional questionnaire completion rates were 31%, 29%, 30%, and 10% for Western Canada, Ontario, Quebec, and the Atlantic provinces, respectively. On average each physician provided care to approximately 24 COPD patients per week. Engaging patients in self management and caring for patients with multiple co-morbidities were reported as the most challenging aspects of COPD management. 91%, 61% and 61% of physicians used spirometry, assessed smoking habits/symptoms and the physical exam, respectively, to make a definitive diagnosis of COPD. While 64% of physicians felt very confident in establishing a diagnosis of COPD, 73% indicated that they were not familiar with COPD phenotypes. In terms of the patient's role in treatment selection, 76% of physicians felt that this should be a shared decision and negotiation process. Improvements in quality of life, symptoms and rates of exacerbations were reported as desirable treatment outcomes. 84% of physicians reported that they routinely assess adherence to COPD medications. COPD was ranked second only to cardiovascular disease for management priority. Physicians were well aware of Canadian Thoracic Society guidelines on COPD management and the latter were the most important driver of treatment selection.

Conclusion: Primary care physicians report challenges related to the management of COPD patients, particularly among those with multiple co-morbidities. As the care of these complex patients is increasingly occurring at the primary care level, further studies will be needed to understand how the issues identified in this survey may influence patient care and whether educational activities addressing these issues will result in optimal COPD management in primary care.

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OR-064

A SYSTEMATIC REVIEW OF THE EVIDENCE OF THE EFFECTIVENESS OF INTERVENTIONS TO SUPPORT SELF-MANAGEMENT AMONG PATIENTS WITH COPD, TO IDENTIFY THE FEATURES AND ELEMENTS WHICH ARE MOST EFFECTIVE.

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Aim: RCTs of self-management support in COPD are very heterogenous in intervention content, population and comparator and there is conflicting evidence about which components are the most effective. This systematic review aimed to describe the content and delivery of COPD self-management trials and to explore which features and elements are most effective.

Methods: A comprehensive search was undertaken from inception of key electronic databases until May 2012 for RCTs with: population: people with COPD; intervention: self-management components; comparator groups: usual care or an active intervention; primary outcomes: HRQoL, hospital admissions, exacerbations.

We defined self-management support very broadly to include any intervention which included any self-management components, including pulmonary rehabilitation studies.

Study selection was undertaken independently in duplicate. Data extraction and risk of bias assessment were carried out by one reviewer with a sample checked by a second. A series of analyses of different self-management components or groups of components were undertaken using random effects meta-analysis.

Results: From 16876 abstracts, 174 RCTs were included.

Most populations had moderate/severe COPD and recruited from secondary care (<7% recruited primary care populations). Trials were generally small (47% <50 participants) with short follow-up (45% ≤3months).

Most trials (96.6%) reported HRQoL, 24.1% reported hospital re/admission rates and only 11.5% exacerbations. Studies assessing the effect of individual components were few, but only exercise significantly improved patient outcomes, which was restricted to HRQoL in the short term.

Multi-component interventions produced combined effects suggesting HRQoL was improved compared with usual care (mean difference 6.50, 95% CIs 3.62, 9.39, I² 82% at 3 months). Results were consistent with a potential reduction in admissions.

Interventions with more enhanced care from healthcare professionals improved HRQoL and reduced admissions at one-year follow-up. Interventions which included supervised or unsupervised structured exercise resulted in significant and clinically important improvements in HRQoL up to 6 months.

Conclusion: Whilst some components of self-management interventions are associated with positive effects of HRQoL, eg structured exercise, enhanced care and multi-component interventions, it was not possible to establish the relative roles of the individual components in reducing hospital admissions or improving HRQoL. More research needs to take place in primary care.

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OR-065

THE EFFECT OF AN ACTIVE IMPLEMENTATION OF A DISEASE MANAGEMENT PROGRAM FOR COPD

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Brief outline of context: The Danish Structural Reform in 2007 delegated the responsibility for prevention and rehabilitation to the municipalities. This demanded a new structure which needed to be multidisciplinary and coordinated between the sectors to create transparent treatment through the whole healthcare system.

Brief outline of what change you planned to make: The Ph.D. thesis examines how structures were created with an extra effort from the Ringkøbing-Skjern municipality, the Central Denmark Region and with general practice as coordinator for the care for patients with COPD. The overall objective for the effort was to secure high quality care, to stop progression of disease and minimise complications as well as gain knowledge of care for COPD.

Assessment of existing situation and analysis of its cause: In 2008 the Central Denmark Region implemented a disease management programme for COPD which presented a unique opportunity to test an active implementation model against the usual implementation strategy

Strategy for change: who, how, following what timetable: An algorithm based on data from use of general practice, hospital and medication for lung-related diseases was developed and validated. The British Research Councils model for developing complex interventions was used to develop a multifaceted implementations strategy for a disease management program for COPD. Based on principles from the Chronic Care Model, Breakthrough Series, academic detailing, continued medical education and identification of patients were used. The active implementation model was tried in a randomised controlled trial.

Measurement of improvement: Patients scored the care with **PatientsAssessmentofChronicIllnessCare**. It rose from 2.06 to 2.14 (difference=0.08 [95%CI: 0.00;0.16]) in the intervention group, while the control group had a decrease of 0.05 [95% CI: -0.14;0.04]; thus, the effect of the active implementation was 0.12 [95%CI: 0.00;0.25], (p=0.048).

More intervention patients than patients from control practices had a planned preventive consultation (RR=1.77, p=0.001) after the active implementation of the disease management program. Intervention patients doubled their additional preventive consultations (RR=2.03, p=0.004) and more had a spirometry at least once a year (RR=1.36, p=0.006). The use of conventional consultations (RR=0.85, p=0.005) changed after the active implementation.

Fewer intervention patients than control patients were admitted without a lung-related diagnosis (RR=0.71, p=0.018). The use of hospital bed days did not change in the intervention group; whereas it rose in the control group (IRR=1.35, p=0.008). No difference was observed in the groups' use of emergency or outpatient services after the intervention.

Lessons learnt: The gained knowledge of how general practice, municipalities and hospitals can work together in delivering a competent and effective care with general practice as the coordinator can be used to implement disease management programs for other chronic diseases.

Message for others: Collaboration is necessary for implementation of change in a complex healthcare system.

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A BLINDED EVALUATION OF THE EFFICACY AND SAFETY OF ONCE-DAILY GLYCOPYRRONIUM VIA BREEZHALER® DEVICE VERSUS TIOTROPIUM IN PATIENTS WITH COPD: THE GLOW5 STUDY

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Aim: Glycopyrronium (GLY), a once-daily (o.d.) long-acting muscarinic antagonist (LAMA), has demonstrated a similar efficacy and safety profile to open-label tiotropium (TIO) in patients with moderate-to-severe COPD.¹ A blinded evaluation of the safety and efficacy of GLY versus TIO was performed in the GLOW5 study.

Methods: This multicentre, 12-week, parallel group, blinded study randomised patients ≥40 years with moderate-to-severe COPD [post-bronchodilator FEV₁ ≥30% and <80% of the predicted normal, post-bronchodilator FEV₁/forced vital capacity(FVC) <0.70] and a smoking history of ≥10 pack-years to GLY 50 µg o.d. via the Breezhaler® device or TIO 18 µg o.d. via the HandiHaler® device (1:1). The primary objective was to demonstrate non-inferiority of GLY versus TIO for trough FEV₁ at Week 12. Other endpoints included FEV₁ area under the curve from 0 to 4 hours (AUC_{0-4hr}) on Day 1, Transition Dyspnea Index (TDI) and St George's Respiratory Questionnaire (SGRQ) total scores, rescue medication use, exacerbation rate, safety and tolerability.

Results: Of the 657 patients randomised, [(GLY: 327; TIO: 330); mean age: 63.5 years; mean post-bronchodilator FEV₁: 53.5% predicted], 96% (630 patients) completed the study. GLY demonstrated non-inferiority to TIO for trough FEV₁ at Week 12 (Least Squares Mean [LSM] FEV₁ = 1.41 L for both the groups with LSM treatment difference [Td] of 0 L; 95% confidence interval [CI]: -0.032, 0.031L). Following first dose on Day 1, GLY showed a rapid onset of bronchodilation as demonstrated by FEV₁ LSM differences of 51 mL at 5 min and 63 mL at 15 min; and a higher FEV₁ AUC_{0-4hr} compared to TIO (Td = 58mL; p<0.001). At Week 12, TDI total score (Td = -0.188; p=0.385), SGRQ total score (Td = 0.65; p=0.488) and percentage of days with no rescue medication use (Td = -1.5; p=0.528) were comparable between the groups. No significant treatment difference was observed with respect to rate of moderate/severe COPD exacerbations per year (GLY 0.38 versus TIO 0.35 [rate ratio=1.10; 95% CI: 0.62, 1.93]; p=0.754). Overall, the incidence of adverse events was similar in the GLY (40.4%) and TIO (40.6%) groups.

Conclusion: In patients with moderate-to-severe COPD, 12-week blinded treatment with glycopyrronium 50 µg or tiotropium 18 µg showed similar trough FEV₁ and hence, much the same improvements in lung function, dyspnea, health status, exacerbation rate and rescue medication use, with a similar safety and tolerability profile. Compared to tiotropium, glycopyrronium showed significantly rapid onset and better early post-dose bronchodilation following the first dose.

Reference

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OR-067

PREDICTING RISK OF COPD IN PRIMARY CARE: DEVELOPMENT AND VALIDATION OF A COPD RISK SCORE

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Aim: COPD is vastly under-diagnosed in primary care and there is a national drive in the UK and worldwide to identify people with undiagnosed disease. There is a paucity of risk prediction models for COPD that can be readily used in primary care using routinely collected information to make this process more efficient. We present such a model derived from the UK GPRD dataset.

Methods: A clinical prediction model was developed using data from a large case-control study of patients enrolled in the General Practice Research Database (GPRD), containing one incident COPD case to two matched controls. Candidate risk factors were included in a conditional logistic regression model to produce a clinical score that relates to the risk of an individual having COPD. Accuracy of the score was estimated on a separate external validation sample consisting of patients from 20 purposively selected practices.

The Development sample consisted of 340 general practices containing 28,296 newly diagnosed COPD cases and 15,159 controls (mean age 70 years, 52% male). The validation sample included 4,196 cases and 2,259 controls (mean age 70 years, 50% male).

The accuracy of the developed score was summarised by area under the receiver operator characteristic curve (c statistic), sensitivity, and specificity in each of the 20 validation practices. For an assumed prevalence of undiagnosed COPD (5.5%), we also calculated positive predictive value (PPV), number-needed-to-screen (NNS), and number of diagnostic assessments required to identify one patient with COPD.

Results: The developed prediction model included 11 routinely recorded clinical variables- smoking status, previous diagnosis of asthma, and lower respiratory tract infections (LRTI), dyspnoea, cough, wheeze, sputum production, unintended weight loss, and prescriptions of salbutamol, prednisolone and antibiotics for a LRTI in the previous three years. The model had high discriminatory ability in the validation sample (average c statistic= 0.87 [95% CI 0.86 to 0.89]). Taking scores ≥ 2.5 to indicate high risk yielded a sensitivity of 76.0% (95% CI 75.9 to 76.1) and specificity of 82.6% (95% CI 82.5 to 82.7). At this threshold, the score had a PPV of 20.3%, and would need to be applied to 24 patients, 5 of whom would require diagnostic assessment, to identify one patient with COPD.

Conclusion: Risk factors associated with COPD and routinely recorded in primary care have been used to develop and externally validate our COPD risk score. This approach could be up to five times more efficient at identifying patients at high risk of undiagnosed COPD compared with current screening approaches.

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OR-068

ASPECTS OF ASTHMA MANAGEMENT IN AN EAST LONDON PRACTICE: AUDIT FINDINGS 2013

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Brief outline of context: Patients with asthma often present to both the Primary and Secondary care settings as a result of sub-optimal management of the condition.

Brief outline of what change you planned to make: We undertook a series of concurrent audits in a large East London Primary Care practice to assess specific aspects of Asthma management against the most current British Thoracic Society guidance.

Assessment of existing situation and analysis of its cause: This audit highlighted some of the challenges in assessing and managing Asthma in a busy General Practice setting.

Strategy for change: who, how, following what timetable: Care records of each patient were analysed. This included if the patient had been reviewed for his or her asthma in the past 15 Months, whether the patient's inhaler technique had been observed and recorded, if smoking patients received smoking cessation advice, whether there was consideration for stepping down treatment after an exacerbation, and if this was actually carried out, and finally whether the patient had been given a written management plan as part of "Patient Education".

The pilot audit was conducted between June and July 2013 and then re-audited again in November to December 2013. The main recommendations included rolling out a newer written asthma management plan as well as incorporating the pilot data, guidelines and suggestions as a teaching presentation to staff to promote awareness and use of the latest guidelines.

Effects of changes: The pilot audit of n=451 patients showed a 72.5% 15-month review rate, however only 58.3% of these patients had their inhaler technique observed and 82.1% of smokers received cessation advice. 36.6% of these patients had written management plans. The major finding was that 1.0% of all patients had a documented consideration to stepping down their treatment however only 0.9% were stepped down.

Measurement of improvement: The first re-audit cycle of n=462 patients showed 70.9% had been reviewed in the past 15 months. Only 39.9% of patients had their inhaler technique observed. 0.6% of patients had a documented step down consideration but only 0.4% were actually stepped down. 59.2% of smokers received cessation advice and 40.3% of patients now had a written management plan.

Lessons learnt: In this large practice, the constant change in patient numbers could have accounted for some of the results. Winter pressure for urgent appointments and the failure of patients to bring in their inhalers have probably affected the results as well. The apparent reluctance to step patients down on their therapies may be due to factors such as other concurrent diseases like COPD or patient compliance.

This audit suggests that the new management plan has improved audit outcomes in the domain of "Patient Education". The audit presentation itself does not appear effective compared to the written management plan in improving the other audit outcomes.

Message for others: We aim to continue to re-audit and roll out further interventions to help staff achieve these audit goals.

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OR-069

THE NATIONAL COPD AUDIT IN UK

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Brief outline of context: The national COPD Audit in England and Wales is collecting data from primary care, secondary care and pulmonary rehabilitation programmes. Electronic codes will be used to identify processes and outcomes. Information will be linked to other national health data sources. Routinely collected clinical data from primary care records from approximately 80% of all patients with COPD is anticipated.

Brief outline of what change you planned to make: Using the data extracted in an automated process we are examining quality markers both of process and outcomes in COPD care. Items are blueprinted against the national guidelines and quality framework. Data items will map to; demographics, diagnosis, investigations, severity measurement, interventions, medications, co-morbidities, end of life care and will link to other national data bases recording hospitalisations and death. Data collection will be followed by a series of quality improvement interventions and then a further audit cycle.

Assessment of existing situation and analysis of its cause: There is substantial variation in care quality and subsequent poor outcomes. In a competitive process we were chosen by the Dept of Health as the team to deliver the COPD audit. The audit team involves many professional bodies and national patient representation.

Strategy for change: who, how, following what timetable: In year 1 we are collecting baseline data including quality markers of COPD care, every practice will receive a report on their performance, benchmarked against regional and national data. Suggestions for care quality improvement will be made in the reports with support to do so from organisations such as PCRS-UK

Effects of changes: The reporting structure will be presented and although at present we have no practice data, it is anticipated some pilot data will be available in May 2014.

Measurement of improvement: A range of predefined metrics of care quality have been designed. They all relate to NICE COPD quality markers or the National COPD Outcomes strategy. The audit will be repeated in 2015 to assess improvement following the QI programme.

Lessons learnt: The use of routinely collected data to measure quality of care is not a new process, however standardisation of the items recorded and the metric to be used is controversial. All our metrics are linked to national standards. Recording of some items is poor and the best method of data capture has yet to be defined.

Message for others: An audit of COPD in England and Wales will provide the largest such database in the world (hopefully around 750,000 patients) and an opportunity to improve COPD care and a resource for public health and respiratory researchers.

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OR-070

DOES AZITHROMYCIN RESISTANCE TO A PATHOGEN PREDICT INABILITY TO HAVE CLINICAL CURE? CLINICAL CURE RATES IN PATIENTS TREATED WITH AZITHROMYCIN (AZ) FOR PNEUMONIA CAUSED BY AZITHROMYCIN-SUSCEPTIBLE (AZ-S) AND AZITHROMYCIN-RESISTANT (AZ-R) ORGANISMS: ANALYSIS OF RANDOMIZED COMPARATIVE CLINICAL TRIAL D

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Aim: Community-acquired pneumonia (CAP) is commonly seen in respiratory medicine and may be empirically treated with AZ, an azalide. The purpose of this study was to determine clinical cure rates in patients with CAP caused by AZ-S and AZ-R organisms in randomized comparative trials (RCT) for AZ.

Methods: 292 patients with CAP received AZ in 5 Phase 3 RCTs (1993-2007) to assess the clinical efficacy of AZ. AZ susceptibility was assessed using CLSI methods. All subjects were assessed for cure/failure. For this analysis, low-level AZ resistance (LLAR) was defined as an AZ-R isolate with AZ MIC ≤ 8 $\mu\text{g/ml}$; high-level AZ resistance (HLAR) was defined as AZ MIC ≥ 16 $\mu\text{g/ml}$. Chi-square analysis was used to assess differences in clinical cure.

Results: 408 isolates were confirmed from 292 CAP patients; 94 of 292 patients with CAP had a positive culture for an AZ-R organism while 198 had only AZ-S isolates. 88 patients had 2 or more pathogens confirmed at baseline. The most frequently confirmed pathogens were *Hemophilus spp*; *S. pneumoniae* was isolated from 79 of 292 patients (27%). Clinical cure rates were: 93.8% (274/ 292) for all CAP patients; 96% (190/198) for AZ-S patients; 95.5% (84/88) for CAP patients with multiple organisms; 89.4% (84/94) for CAP patients with an AZ-R isolate; 89.5% (51/57) for LLAR and 89.2% (33/37) for HLAR isolates.

Conclusion: In primary care, patients present clinically with pneumonia, not with culture and sensitivities. Treatment is started empirically. Treatment with AZ had an overall clinical cure rate in patients with CAP of 93.8%. Cure rates were higher in patients infected only with AZ-S isolates (96%) compared to patients with an AZ-R isolate (89.4%); $p=0.03$. No difference in cure rate was observed between LLAR and HLAR ($p=0.97$). The activity of AZ concentrated within lysosomes within white blood cells and released at the site of infection, which is seen with an azalide, may explain the absence of a strong relationship between MIC and clinical cure rates. In primary outpatient care, first line therapy for CAP with AZ is likely to be successful in spite of the recognized increased laboratory resistance to macrolide therapy.

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OR-071

C-REACTIVE PROTEIN DETERMINATION FAILS TO PREDICT SYMPTOM RESOLUTION IN PATIENTS WITH ACUTE COUGH

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Aim: A recent clinical trial has shown that neither non-steroidal anti-inflammatory drugs nor antibiotics were more effective than placebo in shortening the duration of symptoms in patients with uncomplicated acute bronchitis. The aim of this study is to evaluate the association between basal C-reactive protein (CRP) concentrations and symptom resolution in patients with acute cough and discoloured sputum.

Methods: Experimental study with the use of data from this clinical trial carried out in nine primary healthcare centres (trial registration: ISRCTN07852892). Patients from 18 to 70 years of age presenting a respiratory tract infection of less than one week of evolution, with cough as the predominant symptom and the presence of discoloured expectoration were enrolled in the study. On the basal visit, CRP was determined in capillary blood and a five-item symptom diary was given (disease severity, day-time cough, night-time cough, limitation in daily activity and febrile sensation). Each of the items was scored from 0 to 4. The main outcome measure was the number of days with persistent cough after the basal visit. Survival analyses were carried out with the Kaplan-Meier method to analyse the time until cure. Comparison between the different survival curves was undertaken using the log-rank test.

Results: Of the 433 subjects invited to participate, 17 did not fulfil any of the inclusion criteria or had at least one of the exclusion criteria. The CRP rapid test procedure was not performed in 104 cases. A total of 13 patients did not provide any information about the main outcome, leaving 312 patients valid for analysis. The demographic and clinical characteristics of the population were well matched between the groups, except for the colour of sputum and body temperature, with greater CRP concentrations associated with greenish expectoration and with higher number of patients with a high temperature. A total of 176 (56.4%) patients presented values lower than 8 mg/L, 61 (19.6%) presented a concentration between 8 and 19, and 75 (24%) cases presented a CRP value of 20 or greater. No statistically significant associations were observed between the CRP concentrations and the duration of cough. Patients with CRP concentrations under 8 mg/L presented a slightly shorter duration of cough (median of 10 days from the basal visit; 95% confidence interval [CI]: 8 to 12 days) compared to patients with concentrations ranging from 8 and 19 mg/L (11 days; 95% CI: 8 to 14) and those with higher CRP concentrations (11 days; 95% CI: 10 to 12) (log-rank test=0,337).

Conclusion: Among patients with uncomplicated acute cough and discoloured sputum the performance of a CRP test is not helpful for predicting symptom resolution. The results of this study also show that once pneumonia is ruled out, even patients with high CRP levels should not be treated with antibiotics.

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DISCREPANCIES BETWEEN THE CUT POINT OF SGRQ AND THE CUT POINTS OF THE CCQ, CAT AND MMRC IN LIGHT OF THE NEW GOLD CRITERIA

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Aim: In the Global Initiative for Chronic Obstructive Lung Disease (GOLD) 2013 update, symptom assessment is performed by the Clinical COPD Questionnaire (CCQ), COPD Assessment Test (CAT), or modified Medical Research Council (mMRC). Cut points of resp. CCQ \geq 1, CAT \geq 10 and mMRC \geq 2 indicate highly symptomatic patients (groups B and D). Recently a cut point of \geq 25 of the St. George Respiratory Questionnaire (SGRQ) has been suggested as gold standard.[1] The current study investigates criterion validity of CCQ, CAT and mMRC using the cut point of SGRQ based on sensitivity and specificity analysis.

[1] Han K et al. (2013) GOLD 2011 disease severity classification in COPD Gene: a prospective cohort study, Lancet Respir Med 2013; 1: 43–50

² Tsiligianni et al. (2012) Assessing health status in COPD. A head-to-head comparison between the COPD assessment test (CAT) and the clinical COPD questionnaire (CCQ), BMC Pulm Med. 2012 May 20;12:20.

Methods: Two datasets: A) 238 patients participated in a 3-week Pulmonary Rehabilitation (PR) program (63% male, 51%FEV₁pred., 40 mean packyears, 57 mean age, 40/39/21% GOLD stage II/III/IV), B) 90 patients from primary care², 90% male, 56%FEV₁pred., 16/47/30/6% GOLD I/II/III/IV. Primary outcome is the correspondence between the cut points of SGRQ, CCQ, CAT and mMRC expressed in sensitivity and specificity using receiver operating characteristic (ROC) curves. Taking into account the possibility of unsatisfactory sensitivity and specificity, scatterplots with regression lines were used to visually explore alternative cut points, which were evaluated using ROC curves.

Results: Mean total CCQ, CAT, SGRQ scores, median mMRC: dataset A: 2.9, 20.2, 50.1, and 2, dataset B: 1.6, 14.1, 36.3, and 2. The table shows ROC analysis results. Visual inspection of the scatterplots showed SGRQ=20 might serve as more corresponding cut point with ROC results in the table. This was confirmed by regression analysis.

		Cut point SGRQ 25			Cut point SGRQ 20		
		Sensitivity	Specificity	AUC	Sensitivity	Specificity	AUC
CCQ 1	Rehab	0.99	0.43	0.964	0.99	0.73	0.986
	Primary care	0.88	0.71	0.900	0.81	0.83	0.911
CAT 10	Rehab	0.91	0.52	0.885	0.90	0.82	0.943
	Primary care	0.78	0.60	0.777	0.74	0.75	0.802
mMRC 2 [*]	Rehab	0.69	0.91	0.912	0.66	0.99	0.935
	Primary care	0.21	1.00	0.807	0.18	1.00	0.796

^{*}ROC results provided values for mMRC 1.50 and 2.50. Since median = 2, the average of both values has been calculated.

Conclusion: In these samples the suggested cut point for the SGRQ (\geq 25) does not correspond well to the established cut points of both the CCQ and CAT, resulting in low specificity levels, the correspondence with mMRC seems satisfactory for the rehabilitation sample. A SGRQ threshold of \geq 20 shows both good sensitivity and specificity for CCQ and CAT, as well as improved specificity for the mMRC in the rehab sample. This value corresponds better to the established cut points for CCQ, CAT and mMRC in both patient groups.

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OR-073

**CO-MORBID CONDITIONS ASSOCIATED WITH TUBERCULOSIS (TB): RESULTS FROM A 1-DAY, POINT-
PREVALENCE STUDY IN 204,912 PHYSICIAN DIAGNOSED PATIENTS FROM 880 CITIES AND TOWNS IN INDIA.**

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Aim: Tuberculosis is known to be associated with several co-morbid conditions such as human immunodeficiency virus (HIV) infections, diabetes and obstructive airway diseases (OADs). We aimed to study the association between physician diagnosed TB and co-morbid conditions in a large cross-sectional cohort in India.

Methods: 13,225 general practitioners, general physicians and pediatricians from 880 cities and towns were randomly selected and invited to participate in a 1-day point-prevalence study. On the study day all participating doctors captured details of age, gender, presenting symptoms and diagnosis of all patients who visited them. Clean data was transferred into the Epi Info software and associations between Tuberculosis and other co-morbid conditions were analyzed using chi-square test.

Results: 7,400 doctors consented and provided clean data of 204,912 patients (M:54%; F:46%). Out of these, 3719 (1.8%) patients were reported to have TB (M:F 59.8%:40.2%, mean age: 35.7 ± 19.7 yrs). Patients diagnosed with TB showed a strong association with anemia [OR: 2.2 (1.9, 2.4); p<0.0001] congestive heart failure (CHF) [OR:1.8 (1.3, 2.4); p<0.0001], OADs [OR: 1.5 (1.4, 1.7); p<0.0001], ischemic heart disease (IHD) [OR: 1.4 (1.1, 1.8); p<0.005], and thyroid disorders [OR:1.4 (1.1, 1.9); p<0.007].

Conclusion: In this Indian cross sectional study, tuberculosis was strongly associated with the presence of anemia, CHF, OADs, IHD and thyroid disorders.

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Disclosure of Interest: None Declared

OR-074

PROPENSITY TO DISPENSE ANTIBIOTICS WITHOUT MEDICAL PRESCRIPTION FOR RESPIRATORY INFECTIONS

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Aim: Many studies identify inappropriate prescription of antibiotics in respiratory infections, and others identify self-medication and antibiotic dispensing, by pharmacists, without medical prescription as being another link in the chain of antibiotic resistances, an important public health issue. The aim of this study was to assess the propensity of community pharmacists to dispense antibiotics without a previous medical prescription in patients with upper respiratory infections complaints.

Methods: A self-administered questionnaire about situations where antibiotics are sometimes dispensed without a medical prescription was sent by post mail, to 1197 community pharmacists. This questionnaire was designed after a qualitative study, where pharmacists identified some situations in what they have the perception that it is more common to dispense antibiotics without medical prescription.

Results: The response rate was 64,8 %. Of the total of respondents, it was observed that 14,7% of the pharmacists demonstrated propensity to dispense antibiotics without medical prescription to known patients, in the case of upper respiratory infections complaints. Higher propensity was observed in the case of dental diseases and urinary infectious.

Conclusion: There is a propensity to dispense antibiotics without medical prescription in the case of respiratory infections complaints, so it is important to include community pharmacists in educational interventions to improve antibiotics use in primary care.

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OR-075

ACUTE RESPIRATORY INFECTIONS AND ASTHMA IN U-5 CHILDREN; IMPROVED TREATMENT TO REDUCE MORBIDITY AND MORTALITY IN UGANDA, A RANDOMIZED CONTROLLED TRIAL

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Aim: To determine the supplementary effect of inhaled corticosteroids (ICS) on mortality, normalization of respiratory function and duration of hospitalization in children U-5 admitted with severe ALRI.

Methods: Children aged 2-59 months admitted at Mulago hospital with ALRI, were randomized to inhaled fluticasone or placebo, in addition to standard treatment. ICS were administered in a dose of 250mcg 12 hourly for 5 days or earlier if the patient was well enough to be discharged. Patients were monitored for signs of improvement such as reduction in respiratory rate and improvement in oxygen saturation. The primary outcome was the proportion of ALRI associated case fatality and secondary outcomes were: time to normalization of respiratory rate and oxygen saturation, and duration of hospitalisation.

Results: Of the 745 children, 369 (49.5%) received the intervention while 376 (50.5%) received the placebo. There were no significant differences in the baseline characteristics of the two groups. Eight children (1.1%) died, 6 in the placebo group. The median (IQR) time to normalization of respiratory rate was 30 hours (24-60) in the intervention and 42 (25-60) in the placebo group. The duration of hospitalization was also similar.

Conclusion: Mortality was lower in the intervention compared to the placebo group. ICS could reduce ARI associated mortality in Ugandan children.

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Disclosure of Interest: None Declared

OR-076

COMPARATIVE EFFECT OF LARGE VS. SMALL PARTICLE INHALED CORTICOSTEROIDS (ICS) ON BODY MASS

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Aim: To investigate whether ICS particle size (small vs. large) impacts the degree of any subsequent BMI change

Methods: Retrospective, observational study using UK Optimum Patient Care Database and Clinical Practice Research Datalink. Patients were aged 6-80 with evidence of obstructive lung disease therapy, ≥ 2 years continuous practice data (≥ 1 year baseline, 1 year outcome) initiating or stepping up ($\geq 50\%$ dose increase) extra-fine hydrofluoroalkane beclomethasone dipropionate (EF HFA-BDP) or fluticasone propionate (FP). Baseline BMI was calculated using height measurement taken closest to date of ICS initiation/step-up (index prescription date: IPD) and weight measurement from anytime in year prior to IPD. Outcome BMI was calculated using height measurement taken closest to IPD and weight taken anytime in year after IPD. Changes in BMI were compared between small and large particle ICS using a t-test.

Results: The cohort consisted of 2025 and 746 patients initiating small (EF HFA-BDP) and large (FP) particle ICS respectively and 2386 and 2792 stepping up small and large particle ICS respectively. Unadjusted, unmatched results found patients initiating small particle ICS experienced a mean BMI increase (SD) of: 0.27 (1.86) while those initiating large particle ICS experienced a greater mean increase (SD) of: 0.54 (2.69) ($p: 0.003$). Similarly, patients stepping up dose of small particle ICS experienced a mean increase in BMI (SD) of: 0.31 (2.04) compared with 0.53 (2.32) experienced by patients stepping up large particle ICS ($p: <0.001$).

Conclusion: These preliminary, unadjusted results suggest a greater increase in BMI with large particle ICS compared with small particle, indicating further investigation may be warranted.

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OR-077

NUMBER OF TUBERCULOSIS (TB) CASES REPORTED BY PRIMARY CARE PHYSICIANS (PCPS) IN INDIA: RESULTS OF A 1-DAY POINT PREVALENCE STUDY IN 880 URBAN CITIES AND TOWNS IN INDIA.

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Aim: The burden of multi drug resistant (MDR) TB is increasing in India. Previous studies show that PCPs are poorly versed with standard TB chemotherapeutic regimens. This may be a major factor for the growing prevalence of MDR-TB (Udwadia, Plos One 2010). We aimed to study the prevalence of PCP reported prevalence of TB in India.

Methods: 13,225 general practitioners (GPs), general physicians (GenPs) and paediatricians (Ps) from 880 urban cities and towns were randomly selected and invited to participate in a 1-day point prevalence study. All doctors completed a questionnaire based on the ICD-10 classification. They captured age, gender and diagnosis of all patients who visited them on the study day. Clean data was entered in Epi-Info software. Simple descriptive analysis was performed.

Results: 7400 physicians (60.6% GPs, 20.8% GenPs, 18.8% Ps) consented and provided clean data of 204,912 patients. Among these, 3719 were reported to have TB. 55.5%, 30.7% and 13.8% of these were seen by GPs, GenPs and Ps respectively. 54% of the GPs were trained in alternative/ complementary forms of medicine (Alt. Med.) & 46% in modern medicine. 65.8% of TB cases were seen in private (pvt) clinics, 2.7% in pvt hospitals and 12.5% in government hospitals. 67.7% of reported TB cases were between the ages of 18-60 yrs.

Conclusion: PCPs from pvt clinics see substantially large numbers of TB cases in India (estimated 700,000 TB cases/day). GPs (majority trained in Alt. Med.) see over 50% of these patients. These observations mandate development of appropriate health care strategies to restrict the increasing prevalence of MDR TB.

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OR-078

USE OF CARAT KIDS QUESTIONNAIRE IN A PORTUGUESE FAMILY MEDICINE UNIT

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Brief outline of context: The prevalence of allergic rhinitis and asthma has been increasing in Portugal the last few decades and their symptoms often begin at an early age. Although there are several questionnaires to assess the control of both pathologies, these are only valid if used on adults. Therefore, the CARAT Kids questionnaire has been developed and validated to assess the control of both asthma and allergic rhinitis in children from ages 6 to 12. Being a very recent work, it is still very poorly known as a tool. It is composed of 13 yes/no questions: 8 for the child and 5 for the parent.

Brief outline of what change you planned to make: The researchers wanted to improve the control of both asthma and allergic rhinitis in young children in their Family Medicine Unit.

Assessment of existing situation and analysis of its cause: The researchers applied the questionnaire to all the children (and their parents) between the age of 6 and 12 in their files that had been previously diagnosed with asthma or allergic rhinitis and were being followed in the Unit in order to assess if both diseases were controlled. All children with other respiratory diseases were excluded from the study.

Strategy for change: who, how, following what timetable: Afterwards, the research team divulged the results to the clinical staff of the Unit and reassessed the patients after a 3 months, presenting their results once more.

Effects of changes: A higher level of control in both asthma and rhinitis has been related to less absenteeism from both school and work, as well as a higher quality of life for the patients and a reduction in hospitalizations and usage of emergency medicine.

Measurement of improvement: The measurement used to assess the improvement was both the reduction in the score of the questionnaire as well as an increase in the percentage of the controlled population.

Lessons learnt: The CARAT Kids is a very easy to use and helpful tool to assess the control and evolution of both asthma and allergic rhinitis in young patients making it essential for any Family Doctor working with children.

Message for others: This questionnaire should be divulged as a powerful and easy-to-use tool to assess the control of both diseases in young children and probably translated and validated to other languages as well.

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Disclosure of Interest: None Declared

OR-079

INHALATION CHARACTERISTICS WITH SPIROMAX® AND TURBUHALER® DRY POWDER INHALERS (DPI) IN HEALTHY ADULTS AND PATIENTS WITH ASTHMA OR CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD): BEFORE AND AFTER ENHANCED TRAINING

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Aim: Acceleration of inhaled flow from a DPI is important to facilitate de-aggregation of the metered dose and to ensure delivery of an appropriate dose. Patients need to inhale as fast as possible from the beginning of their inhalation manoeuvre and continue inhaling until their lungs are full.¹ This study investigated inhalation characteristics when patients and healthy adults (HA) inhale through placebo Spiromax® and placebo Turbuhaler® DPIs and assessed the impact of enhanced DPI technique training.

Methods: This was a randomised, open-label, crossover study involving children (6–11 years old, [CA]), adolescents (12–17 years old [AA]) and adults with asthma [ADULT], COPD patients and HA. Study participants were trained to use the Spiromax and Turbuhaler DPIs according to the Patient Information Leaflets. Inhalation characteristics were measured using an inhalation profile recorder attached to the devices.

Each participant received enhanced training using an In-Check Dial™ to measure inspiratory flow (IF). Participants were encouraged to increase their IF by inhaling more quickly. Inhalation characteristics were measured in the same way as before enhanced training.

Results: Before enhanced training, peak inspiratory flow (PIF) and maximum change in pressure (ΔP) were significantly higher with Spiromax versus Turbuhaler ($p < 0.05$; all patient groups). There were also trends towards slightly higher inspiratory acceleration (ACC) with Spiromax.

Enhanced training significantly improved PIF, ACC and ΔP ($p < 0.05$) in all subjects and in both inhalers except ΔP with Spiromax in patients with COPD. Significantly greater improvements ($p < 0.05$) were seen with Spiromax versus Turbuhaler (post training) for PIF (all groups), ΔP in AA, ADULT and patients with COPD, and for ACC in ADULT and COPD patients.

Conclusion: Patients achieved faster IF and greater positive change in pressure with Spiromax versus Turbuhaler. Enhanced training with a focus on maximising inspiratory effort produced significant improvement in inhalation parameters with both devices, and significantly greater improvements in these parameters with Spiromax versus Turbuhaler in adult patients.

References

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Study sponsor: TEVA pharmaceuticals.

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Disclosure of Interest: None Declared

OR-080

WHAT ARE THE NEEDS OF PATIENTS WITH COPD ADMITTED TO AN INNER CITY HOSPITAL AS AN EMERGENCY AND ARE THESE ADMISSIONS 'APPROPRIATE'?

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Aim: Breathlessness drives people with COPD to present to hospital, whilst respiratory failure is the indication for hospital admission. The proportion of patients admitted because of respiratory failure compared with those admitted with breathlessness without respiratory failure is unknown. At a time of increasing care at home during acute exacerbations of COPD (AECOPD), appropriate decision making regarding place of treatment is essential. We determined the needs and resource use of patients with AECOPD admitted to an inner city hospital in London and the relative contributions of breathlessness and respiratory failure to admission.

Methods: Case records (paper/electronic) of patients coded as AECOPD admission (ICD10 J44.0/J44.1) over 6 months (01/01/2012–30/06/2012) were retrospectively reviewed. Correctly coded admissions with spirometry-confirmed COPD were analysed for disease severity, smoking status, admission oximetry (SaO₂), co-morbidities (diabetes, heart failure, atrial fibrillation, ischaemic heart disease) and bed-days. Demographics included living alone and postcode as deprivation measure using Indices of Multiple Deprivation (IMD2010). Respiratory failure was defined as SaO₂ breathing air <92%.

Results: 171/211 admission-records were reviewed (40 inaccessible). After excluding incorrectly-coded admissions (20.5%; 35/171) and patients without spirometry (10.5%; 18/171), 118 admission-records were analysed. 89 patients (49M;40F) accounted for 118 admissions and 1352 bed-days. Mean (range) age was 71(39-95)years, mean (SD) FEV₁ 0.9(0.4)L, %predictedFEV₁ 35.4(17.2)%, BMI 26.2(7.4)kg/m²; 38/89 (42.7%) were current smokers, 11/89 (12.4%) alcohol-dependent, 61/89 (68.5%) >1 co-morbidities. 37/89 (41.6%) lived alone and 22/89 (24.7%) were living in areas defined as highest deprivation. Mean (SD) SaO₂ was 89.1(5.9)% and mean admission MRC-score was 4.8. Respiratory failure with breathlessness accounted for 82/118 (69.5%) admissions (1049 bed-days), whilst 36/118 (30.5%) were for breathlessness (303 bed-days).

Conclusion: Inner city patients admitted with AECOPD have severe disease, multi-morbidities, >40% smoke, >40% live alone and 25% live within the most deprived quintile. Breathlessness with respiratory failure accounted for ~70% admissions. Pulse oximetry should be an essential component of primary care assessment in AECOPD to identify respiratory failure and therefore need for hospital admission and those patients who could be managed safely at home (breathless without respiratory failure). Despite access to pulmonary rehabilitation and supported self-management, 31% admissions were for breathlessness without respiratory failure (61% smokers). We recommend the development of pathways to address the complex needs of breathless patients, including tobacco dependence and inpatient respiratory failure treatment.

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OR-081

ONCE-DAILY GLYCOPYRRONIUM VIA BREEZHALER® DEVICE IMPROVES LUNG FUNCTION AND REDUCES EXACERBATIONS IN SEVERE-TO-VERY SEVERE COPD PATIENTS: THE SPARK STUDY

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Aim: Glycopyrronium (GLY) 50µg via Breezhaler® device and tiotropium (TIO) 18µg via HandiHaler® device are once-daily (o.d.) inhaled long-acting muscarinic antagonists, indicated for the treatment of chronic obstructive pulmonary disease (COPD). Here we present the efficacy results of GLY versus TIO in patients with COPD from the SPARK study. **Methods:** In this long term (64-week), multicenter, parallel-group, active-controlled SPARK study, patients ≥40 years with severe-to-very severe COPD, smoking history of ≥10 pack-years and a history of COPD exacerbations were randomized to receive double-blind QVA149 110/50µg or GLY 50µg via Breezhaler® device or open-label TIO 18µg o.d. via HandiHaler® device. Efficacy parameters analyzed were COPD exacerbations, lung function (pre-dose forced expiratory volume in 1 second [FEV₁]), health status using St George's Respiratory Questionnaire (SGRQ) score, rescue medication use, and safety.

Results: 1483 patients were randomized, 99.5% analyzed (GLY=739, TIO=737); male: 74%. At Week 64, the reduction in the rate of all COPD exacerbations in the GLY group was comparable to TIO (Rate ratio [RR]: 1.01, 95% confidence interval [CI]: 0.913, 1.107, p=0.919). The pre-dose FEV₁ (LS Mean [SE], L) was similar for GLY (0.98 [0.011]) and TIO (0.99 [0.011]). Over 64 weeks Health status (SGRQ score) improvement (LS Mean [SE]) with GLY (45.46 [0.780]) was similar to TIO (46.08 [0.778]). The reduction in daily rescue medication usage was comparable for both GLY and TIO at 64 weeks. The overall incidence of any adverse events (AEs) was similar in the GLY (93.85%) and TIO (93.1%) groups with COPD worsening being the most frequently reported AE.

Conclusion: Over the long term period, once-daily glycopyrronium 50µg o.d. via Breezhaler® device showed similar efficacy to tiotropium 18µg o.d. via HandiHaler® device in reducing all COPD exacerbations, improving lung function, health status, and reducing rescue medication use in patients with severe-to-very severe COPD. Glycopyrronium was found to be safe and well tolerated with an adverse event profile similar to tiotropium, over long term use in patients with severe to very severe COPD.

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OR-082

COPD ADMISSIONS IN AN URBAN ENVIRONMENT: FACTORS INFLUENCING LENGTH OF STAY

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Aim: Hospitalisations for COPD are associated with poor patient prognosis and represent the major cost of this condition. This study aimed to describe the distribution of length of stay of repeated admissions among patients hospitalised with COPD exacerbations. It examined variation in length of stay between different hospitals and general practices, and primary and secondary care factors which might influence this.

Methods: A retrospective longitudinal study analysed all COPD admissions (2006-2010) to NHS hospitals of patients registered at London practices. Admissions of patients who had not been admitted to hospital with COPD in the previous 15 months were included. Admissions were compared between hospitals and the contribution of patient factors, including age, gender and deprivation, to variation in length of stay was calculated. The influence of measurable general practice variables on length of stay was determined by multiple linear regression. Negative binomial regression was used to assess associations between individual hospitals and mean length of stay.

Results: Data on 38504 admissions from 22462 patients were included. Mean age 72.8 years, 51.7% male. Mean length of stay of first admission 7.6 days. Mean length of stay per admission reduced by 1.0 days (95% CI: 0.7 to 1.4) over four years, but with little change in mean length of stay of the majority of patients. Over successive admissions of the same patient the mean length of stay per admission did not increase. Patient age accounted for 2.3% of the variance in length of stay and deprivation was not a predictor. Minor variation in length of stay was found between different hospitals. General practice variables were not predictors of length of stay.

Conclusion: Length of stay of admissions for COPD fell by about one day from 8.0 to 7.2 days between 2006 and 2010. Repeated admissions for patients with COPD were not associated with increased length of stay per admission. Neither practice nor hospital level variables appeared to significantly influence length of stay of the majority of COPD patients.

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OR-083

EMERGENCY ADMISSIONS FOR COPD IN AN URBAN POPULATION: THE ROLE OF POPULATION AND PRIMARY CARE FACTORS.

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Aim: Chronic obstructive pulmonary disease (COPD) is a major challenge to healthcare systems internationally and is the most common cause of emergency admissions in London. Hospital admissions constitute a large proportion of the financial cost of managing COPD. There exists much conflict in the literature about medical care factors that influence admissions, and these factors are likely to be complex and multi-factorial. Purdy et al (Journal of Health Services Research and Policy 2011) found little evidence that modifiable GP factors are important in decreasing admission rates for COPD.

The aim of this study was to examine associations between COPD admissions and PCT and practice characteristics in London.

Methods: Retrospective observational study using routinely collected data in 31 Primary Care Trusts (PCTs) and their practices across London between 2006 – 2009. Hospital admissions for COPD, practice characteristics and practice quality performance data were collected. Admissions data were obtained from Hospital Episode statistics (HES) and performance data were supplied by the NHS Information Centre (Quality and Outcomes Framework - QOF). Negative binomial regression was used to assess the influence of service level characteristics on admission rates at practice and PCT level.

Results: Data were obtained on 1,530 practices from 31 PCTs, with respect to 51,352 COPD admissions between 1/1/2006 and 31/12/2009. Mean COPD admissions per 10,000 patients on the practice list remained stable between 2006 (17.5; 95% CI 16.9-18.1) and 2009 (16.8; 95% CI 16.2-17.3).

There was large variation in practice characteristics including the median practice list size (4,807; IQR 3,079 – 7,143), diagnosed prevalence (0.89; IQR 0.61 – 1.25), and deprivation rank (10,060.5; IQR 5,266.8-17,154.5). There was less variation between the practices in performance quality with for example QOF total points achieved/ total points available (0.9549; IQR 0.9307-0.9735) and QOF smoking points achieved/points available (1.0004; IQR 1.0003-1.0005). In London, COPD prevalence (exponent of B= 1.006; 95%CI 1.005-1.007) and deprivation (exponent of B=1.0003; 95% CI 1.0002-1.0004) were the only significant factors influencing COPD admissions.

Conclusion: A wide range of COPD admissions per practice were seen across London practices. No PCT or practice characteristics were identified which explained admission rate variance.

PCT or practice characteristics are unlikely to be influential in determining COPD admissions rates.

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OR-084

BEAT THE TOBACCO – SMOKING CESSATION AMONG SOCIALLY VULNERABLE SMOKERS IN THE MUNICIPALITY OF KOLDING, DENMARK

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Aim: An increasing share of existing smokers is socially vulnerable being unemployed, on sickness benefit, with mental illness, etc., showing the social inequality in smoking. Furthermore, the smokers left more nicotine dependent and heavy smoking. Though, smokers with a high wish to quit smoking, but with a need for more intensive assistance and use of both counseling and smoking cessation (SC) medication.

Based on the shared care among general practice, Kolding Hospital and the Municipality in Kolding the *Beat the Tobacco* project offered flexible SC-assistance to the group of socially vulnerable smokers and their relatives. It consisted of proactive contact to smokers by the municipality after referral, individual counseling and an offer of 100% reimbursed SC-medication. The project was funded by the national public SATS-fund administrated by the Danish Health and Medicines Authority.

The aim was to evaluate the success of the project in terms of smokers becoming abstinent.

Methods: The project was designed as a prospective, longitudinal, before-after, non-interventional study. Smokers included were either unemployed, on sickness benefit, in early retirement, single, or with little or no education, and were referred to the municipality SC-clinic from general practice or hospital medical departments. The primary study endpoint was *"the share of smokers being abstinent after 3 months"*. Long-term abstinence after 6 months was also measured.

Results: In total 301 socially vulnerable smokers (172 females/129 males) – twice as many as expected – were recruited. The smokers were severely nicotine dependent (average Fagerstrom score of 6.5), heavy smoking (26 cigarettes) and had a long smoking history (32 years). In terms of SC-medication 149 smokers did choose nicotine replacement therapy (NRT), 196 varenicline, and 3 bupropion – both prescription-based. Five did not choose medication.

After end of counseling at 3 months 46% (intention-to-treat (ITT)) were abstinent and 29% had reduced their tobacco consumption. After 6 months 28% (ITT) were still abstinent. Split into type of SC-medication 34% using varenicline were abstinent at 6 months compared to 20% using NRT (P=0.02).

Conclusion: The quit rates obtained in the Beat the Tobacco project were a bit higher than those experienced in Denmark for all smokers. The reason to this success is the joint and flexible cessation assistance with a number of elements including individual counseling and reimbursed SC-medication. General practice and the hospital departments have been very positive towards the initiative and shared care was further strengthened. Based on the success the Municipality of Kolding has chosen to continue the Beat the Tobacco initiative.

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OR-085

THE BIRMINGHAM COPD COHORT STUDY: A CROSS-SECTIONAL COMPARISON OF THE CHARACTERISTICS OF EVER-SMOKERS AND NEVER-SMOKERS

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Aim: To compare the characteristics and health outcomes between never smokers and ever smokers among primary care patients with COPD.

Methods: The Birmingham COPD Cohort Study recruited established and newly-identified COPD patients from 71 general practices in the UK. At baseline, participants completed questionnaires to obtain sociodemographic, occupational, lifestyle and health data, with clinical measures including pre and post-bronchodilator spirometry performed by trained researchers.

Cross-sectional analyses using adjusted regression models adjusted for age and sex were performed comparing characteristics of ever-smokers and never-smokers.

Results: Analyses were conducted on 1427 patients for whom smoking data were available. 144 (10%) patients had never smoked. Compared with ever-smokers, never-smokers were more likely to be female (51% versus 37%; $p<0.01$) and older (mean age 71 versus 68 years; $p<0.001$). Approximately three-quarters (74%) of ever-smokers had airflow obstruction according to LLN criteria, compared with 54% of never-smokers ($p<0.001$). Ever-smokers had more severe airflow obstruction than never-smokers (23% vs. 18% \geq GOLD stage 3; $p<0.05$). Prevalence of many co-morbidities was higher in the ever-smoking group (OR 1.5 $p=0.001$). Ever-smokers had an increased risk of having cardiovascular disease (OR 1.3 $p<0.001$) and lower BMI (coefficient -0.2; $p=0.02$) compared to never-smokers. Nevertheless, asthma (OR 0.6 $p<0.001$) and heart failure (OR 0.9 $p=0.009$) were more common among never-smokers. Health care usage was similar between the groups however. Ever-smokers reported more dyspnoea (OR 1.6 $p=0.012$), a greater number of exacerbations (OR 1.2 $p<0.001$) and greater impact of COPD on their daily lives (CAT: coefficient 3.0; $p<0.001$) compared with never-smokers.

Conclusion: Compared with ever-smokers, never-smokers with clinically-diagnosed COPD had milder disease, fewer symptoms and generally fewer co-morbidities. Never-smokers were more likely to suffer from asthma and heart failure and were less likely to meet spirometric criteria. However, all-cause hospitalizations were the same in each group despite ever-smokers being at increased risk of having more exacerbations.

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Disclosure of Interest: None Declared

MATRIX SUPPORT IN RESPIRATORY HEALTH: DIAGNOSIS AND TREATMENT MULTIDISCIPLINARY PRACTICE TO CHANGE ASTHMA AND COPD PRIMARY CARE

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Brief outline of context: The matrix support, a tool originally developed to mental health, aims to integrate the dialogue between different specialties and levels of care. It seeks to overcome traditionally fragmented interventions and unnecessary referrals. The high burden of asthma and COPD, the lack of pulmonologists and excessive clinical referrals motivated the implementation of the respiratory health matrix support in PHC teams

Brief outline of what change you planned to make: To qualify 11 BHU in the correct management of Asthma and COPD. The plan aiming to: advise and train in diagnosis and treatment targeting an increasing users access; enable comprehensive care, increasing cases resolution; increase co-responsibility between PHC and specialized care teams

Assessment of existing situation and analysis of its cause: In Sao Bernado city, 1.100 patients were waiting for specialized care. 70% of them had asthma and COPD. National register indicated the diseases were the 3rd and 4th of hospitalization cause

Strategy for change: who, how, following what timetable: Three health pilot territories were chosen based highon number of referrals, social vulnerability and difficult access to specialized centers. 321 patients waiting for specialized care. Referrals were prioritized according to clinical severity and waiting time. Multidisciplinary theoretical workshops were performed. Joint consultations and shared care were made by specialist and the multidisciplinary PHC team. The responsibility for long term management stayed with local team: previous attendance by the staff and carrying out preliminary spirometry and chest X ray. Referral reasons were diagnostic uncertainty and treatment failure

Effects of changes: We performed 12 multidisciplinary theoretical Asthma and COPD workshops. 117 doctors and nurses were trained. 274 patients were seeing, 210 through joint consultations. 21 cases were discussed through circles of conversation. The joint consultations were considered the best strategy program by professionals. Eleven local tutor teams were elected. From May to October 2013 there was 85% asthma and COPD references reduction (TABLE) and relative reduction (26%) in the emergency unit visits in one territory. Relative qualification of the references and better integration between the primary care and the specialized care were observed too

Territory	Before			During		
	Asthma	COPD	Other Respir Dis	Asthma	COPD	Other Respir Dis
9	22	34	42	3	4	5
7	91	66	116	12	4	41
3	49	59	102	8	12	32
Total	152	169	260	23	20	78

Measurement of improvement: Considered indicators: the number of referrals, the number of joint consultations, the number of the circles of conversation to discuss cases and the number of patients seen in the emergency units

Lessons learnt: The shared care is able to promote better management of Asthma and COPD patients, favoring the bond and the exchange of knowledge

Message for others: The matrix support applied to respiratory chronic diseases seems to be a powerful device for reviewing the educational and assistance practices, and if well employed, can improve skills of the PHC teams

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Disclosure of Interest: None Declared

OR-087

QUALIEFR: A QUALITATIVE STUDY OF THE DETERMINANTS OF EARLY DETECTION OF COPD IN GENERAL PRACTICE IN FRANCE.

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Aim: To explore the determinants of prescribing and performing respiratory function tests by general practitioners (GPs) for the diagnosis of chronic obstructive pulmonary disease (COPD).

Methods: Descriptive qualitative multicenter study in France by group interviews of GPs and pulmonologists. Thematic analysis with double coding by a grounded theory approach with NVivo 10.

Results: The sample consisted of 5 groups of GPs (n=38), 1 group of hospital pulmonologists (n=5) and 1 group of private pulmonologists (n=3).

The themes addressed were the definition of COPD, representations of the disease and patient with COPD, smoking cessation, the usefulness of treatment, indications and tools for early detection, the respective roles of GP and pulmonologist, communication between them and the patient care pathway.

Knowledge expressed by GPs on spirometric definition and technique were imprecise. The diagnosis was often based on symptoms.

The advantage of treating COPD (except smoking cessation) and therefore of diagnosing it didn't reach the consensus.

Practitioners said they were discouraged in this management, and even that it was boring. But because of the prevalence, most admitted they had to get interested to COPD.

The opinions expressed on the GP performing spirometry varied depending on the motivation of the physicians, their accessibility to a pulmonologist and their correspondence physician. Interprofessional cooperation was discussed and both GPs and pulmonologists shared the will to increase the added value of pulmonologist consultation for the GP. The skills of the two specialties and tasks sharing were discussed in the context of the french organization of care, based on fee for service for private physicians. "Do GPs have enough time and skills? What will private ambulatory pneumologists have left if GPs perform spirometries?"

Conclusion: GPs and pulmonologists agreed on the importance of thinking about COPD earlier and more often, before thinking of the practitioner performing the spirometry. Despite recommendations on the care pathway, there was a gap between the representations of the ideal role dispatching. A consensus method could lead to shared concrete improvement proposals for a better pluriprofessional management of COPD in primary care.

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OR-088

PATIENTS' EVALUATION ON ASTHMA SEVERITY WAS RELATED TO LEVEL OF ASTHMA CONTROL AND QUALITY OF LIFE OVER SEVEN YEARS FOLLOW-UP.

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Aim: To study the relations of patients' evaluation of their asthma severity to asthma control and quality of life over seven years follow up.

Methods: A survey in 2005 of 1226 randomly selected asthma patients in primary care and 499 out-patients in secondary care. The questionnaire included patients' evaluation of the severity of asthma on a five point scale ranging from very mild to very severe, asthma control (according to GINA guidelines) and Mini-AQLQ. A follow-up of the same patients in 2012 included the same questions with addition of the asthma control test (ACT). 750 patients participating in both surveys were included.

Results: Mean age in 2005 was 51.4 years, 60% women. 9% were daily smokers 2005 compared with 6% 2012. In 2005 16% reported the severity of their asthma as very mild, 33% as mild, 33% as moderate, 9% as severe and 2% as very severe.

Asthma control (according to GINA) in 2012 was achieved by 69% of those who reported their asthma as being very mild, 45% as mild, 26% as moderate, 15% as severe and by 6% of those who assessed their asthma as very severe in 2005 ($p < 0.001$).

Mini-AQLQ in 2012 for those who 2005 assessed their asthma as very mild, mild, moderate, severe and very severe was 6.20 (95%CI 6.02-6.37); 5.67 (95%CI 5.55-5.80); 5.04 (95%CI 4.90-5.18); 4.26 (95%CI 3.91-4.61); 3.34 (95%CI 2.71-3.97) respectively.

ACT scores in 2012 for those who 2005 assessed their asthma as very mild, mild, moderate, severe and very severe were 22.8; 20.9; 18.3; 15.3; 14.4 respectively ($p < 0.001$).

Conclusion: Patients' evaluation of their asthma severity is related to future outcomes and is important to take into consideration in asthma management.

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Disclosure of Interest: None Declared

OR-089

OVERDIAGNOSIS OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) AT PRIMARY CARE

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Aim: The main aim is to investigate the percentage of patients at primary care who are diagnosed of chronic obstructive pulmonary disease (COPD) ,who are treated with inhalers and don't meet the criteria for persistent airflow limitation confirmed with a post-bronchodilator spirometry.

Methods: This is a cross-sectional study in a random sample of 107 patients followed in three primary care health areas. The selection criteria that were used are the following ones: have registered a COPD diagnosis on the electronic clinical history; be treated with an inhaler and to be forty to seventy-five years old.

A spirometry with post-bronchodilator test was made to all the patients who took part in the study. The FEV1/FVC post-bronchodilator is used for the analysis, assuring the validity of the spirometry previously.

Results: 15,094% (IC 95% [7,808-22,381]), 16 out of the 106 patients analysed, have a FEV1/FVC post-bronchodilator >70%. This result excludes a persistent airflow limitation which is the main characteristic of COPD.

One patient was excluded due to the fact of not meet the validity criteria on the spirometry.

Conclusion: We detect an overdiagnosis of COPD at primary care (in our particularly case, 15, 094%). The consequences of this overdiagnosis are unnecessary treatments with iatrogenic risk on these patients and high pharmacological expenses as a result of a wrong prescription on patients without the described disease.

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Disclosure of Interest: None Declared

OR-090

INTERVENTIONS ON FACTORS ASSOCIATED WITH ASTHMA CONTROL : A SYSTEMATIC REVIEW OF THE LITERATURE

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Aim: Global Initiative for Asthma (GINA) guideline recommend that asthma management should be based on asthma control. Whereas asthma requires a comprehensive approach, many studies evaluated the specific pharmacological management but few investigated non-specific pharmacological interventions. The aim of the study was to identify interventions enhancing asthma control, excluding specific and validated drug therapies.

Methods: Systematic review was conducted in June 2013 through Medline and the Cochrane Library. Inclusion criteria were: population of asthmatic patients; intervention, literature review or meta-analysis; asthma control as an outcome."

Results: We identified 819 references, 85 were included: 35 RCTs, 23 meta-analyses and 22 literature reviews.

Patient education programs significantly improved asthma control but we couldn't identify the most effective kind of program. Most interventions to reduce dust mites exposure were ineffective. Air purification systems by filtration seemed more effective than those by ionization. The total or partial rehabilitation of housing to reduce allergens exposure and indoor pollutants improved control.

No diet adjustment showed effectiveness. Physical activity has shown encouraging but insignificant results. Gastroesophageal reflux treatment and antibiotics long-term prescription failed to improve asthma control. Psychological interventions and physiotherapy did not prove effectiveness.

Transfer disease management from the physician to a nurse showed no conclusive results. School-based asthma management in children was effective. Complex interventions, which typically associate patient education programs and a decrease exposure to indoor allergens and pollutants, significantly improved disease control.

Conclusion: A few non-drug interventions have shown an improvement in asthma control as well as unspecific drug interventions. Complex interventions conducted by coordinated primary care professionals and involving patients seemed to be most effective.

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OR-091

GOAL SETTING IN THE MANAGEMENT OF ASTHMA: THE CHALLENGES OF A TRIAL IN PRIMARY CARE

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Aim: There is a need to develop new, effective and practical approaches for eliciting goals and associated self-management behaviours by forming partnerships with patients that will support the self-management agenda.¹ The development of a simple goal-setting tool may boost this process by encouraging patients to focus their thinking about asthma and its effect on their life. We aimed to test the effectiveness, estimate the cost, and explore the acceptability and perceived utility by both patients and health professionals, of a patient-centred, goal-setting intervention in a primary care setting.

Methods: Two armed, multi-centre, cluster-randomised controlled feasibility pilot trial with an embedded qualitative study in UK primary care.² Practice level randomisation with a target of 80 patients with active asthma due a review from eight practices across two Scottish health boards. Intervention patients completed a goal-eliciting tool prior to review which was discussed and a negotiated management plan to facilitate achieving their prioritised goals agreed. Control patients received usual care. The primary outcome was change in the mini Asthma-related Quality of Life Questionnaire (mAQLQ). Data were collected at baseline, three- and six-months post-intervention.

Results: Ten practices completed the study – 5 intervention arm and 5 control arm. Data were available for 48 patients - 18 intervention and 30 control. At 6 months, the asthma related quality of life (mAQLQ) was higher by 0.1 and the median by 0.16 in the intervention compared to the controls. The emotions subscale had the largest difference with median difference of 0.66 higher in intervention vs controls. The environment subscale also tended to be higher in the intervention compared to controls. QALYs were lower by 0.027 and costs higher by £22.17 in the intervention group compared to the control. The analysis suggests that the optimal sample size for a future cluster trial is 870 patients from 87 practices.

Conclusion: Whilst the mean cost estimates from the pilot trial suggest the intervention should not be adopted the small sample sizes resulted in high levels of uncertainty and there remains, therefore, a chance that the intervention is in fact superior. However, there are practical issues which need to be addressed before progressing to a full trial.

¹ Pinnock H, Thomas M, Tsiligianna I, et al: The international primary care respiratory group (IPCRG) research needs statement 2010. *Prim Care Resp J* 2010, 19(1):S1–S20.

² Hoskins G, **Abhyankar P**, Duncan E, Donnan P, Sheikh A, Pinnock H, van der Pol M, Taylor A, Williams B 2013. Goal-setting intervention in patients with active asthma: protocol for a pilot cluster randomised controlled trial. *Trials* **14**:289

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OR-092

HOW DO COPD GUIDELINES HELP GPs IN TREATING ACUTE EXACERBATIONS WITH SYSTEMIC CORTICOSTEROIDS AND ANTIBIOTICS?

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Aim: Systemic corticosteroids and antibiotics have been proven effective for many patients with acute exacerbations of chronic obstructive pulmonary disease (AECOPD). However, not all patients benefit from these treatments. Furthermore, their use bears the risk of adverse effects and development of bacterial resistance. Clinical practice guidelines are intended to assist clinicians in identifying patients appropriate for either treatment based on the best available evidence. The aim of the study is to identify the recommended criteria in COPD guidelines for the treatment of AECOPD with systemic corticosteroids and antibiotics, particularly in primary care, and to evaluate the underlying evidence.

Methods: A systematic literature search was conducted to identify current guidelines for COPD. The most recent guideline per country containing recommendations about treatment of AECOPD was included. Information about the guideline development and criteria for treating AECOPD patients with systemic corticosteroids and antibiotics were identified. Clinical trials referred to in context with recommendations were characterized in terms of study setting and study population.

Results: A total of 17 COPD guidelines were included. Systemic corticosteroids were recommended to all patients with AECOPD in most of the guidelines. Criteria for antibiotic treatment were mostly a combination of the respiratory symptoms "dyspnoea", "cough", "sputum volume" and "sputum purulence". When changes in sputum was the only of these symptoms emphasized additional criteria such as systemic symptoms and diagnostic tests were provided. There were 14 clinical trials related to the recommendations. The patients in the trials were a highly selected group of COPD patients, in particular due to high exclusion rates of patients with mild to moderate COPD and cardiovascular co-morbidities. Furthermore, there was gender bias in all trials and 9 of the 14 trials were conducted in a hospital setting.

Conclusion: Current COPD guidelines are of little help in the decision for or against treatment with systemic corticosteroids or antibiotics in primary care. This may lead to overuse of either treatment, particularly antibiotic treatment when based on respiratory symptoms likely to occur in most patients with AECOPD. There is need for more evidence on the usefulness of symptoms, signs and biomarkers applicable to patients in primary care.

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OR-093

CAN THEORY HELP US UNDERSTAND THE REASONS FOR PATIENT ATTENDANCE AND NON-ATTENDANCE IN PULMONARY REHABILITATION AND COPD SELF-MANAGEMENT PROGRAMMES?: A QUALITATIVE SYNTHESIS AND APPLICATION OF THEORY

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Aim: To explore factors that might explain patient participation and dropout behaviour in studies of pulmonary rehabilitation (PR) and self-management (SM) programmes by patients with chronic obstructive pulmonary disease (COPD)

Methods: A systematic review of qualitative studies was conducted. Thematic framework synthesis identified emergent themes and subthemes which were mapped onto the adapted 'attitude-social influence-external barriers' and 'self-regulation' theory to produce analytical themes.

Results: Six studies for identified, PR (n=5), SM (n=1). Three main descriptive themes with 34 subthemes emerged. Application of the themes and subthemes onto the two theories generated five analytical themes. Participation behaviour was influenced mainly by a participant's 'attitude' or 'intervention' and 'illness representations'. The following factors influenced (1) attendance: perceived positive benefits of the intervention (e.g. to see health improvement), positive past experience of intervention (e.g. staff supervision), and perception of controllability (e.g. to cope with condition); (2) non-attendance: perceived negative benefits of the intervention (e.g. worsen breathlessness), negative past experience of intervention (e.g. with exercise), perceived physical or practical concerns (e.g. prior commitments) and perceived negative influence of others; and (3) dropout: unmet expectations from intervention (e.g. no health improvements).

Conclusion: Psychosocial factors including the perceived practical or physical concerns related to attendance influenced participation behaviour of COPD patients in PR and SM programmes. Addressing the negative perceptions via behaviour change interventions may help to improve participation in COPD PR and SM programmes and patient outcomes.

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OR-094

PREDICTORS FOR TREATMENT WITH ANTIBIOTICS AND SYSTEMIC CORTICOSTEROIDS IN ACUTE EXACERBATIONS OF COPD AND ASTHMA IN GENERAL PRACTICE (PEXACO STUDY)

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Aim: To investigate the antibiotic and oral corticosteroid prescribing rate in patients suffering from acute exacerbations of COPD or asthma in general practice, and to identify predictors for such prescribing.

Methods: 380 patients aged 40 years or more diagnosed with asthma, COPD or both the previous five years from seven general practice offices in Norway participated in baseline registrations. The patients were asked to visit their GP during exacerbations the following 12 months. At these visits, the GP registered symptoms, chest findings, pulse oxymetry and CRP.

Results: Out of the 95 patients included in the analysis, 39 patients had COPD according to spirometry with $FEV_1/FVC < 0.7$. 11 patients had taken antibiotics and 16 had taken systemic corticosteroids prior to their visit to their GPs. After excluding those already treated, antibiotics were prescribed in 43.6% and systemic corticosteroids in 56.4% of patients with $FEV_1/FVC < 0.7$ compared to 12.5% and 28.6% respectively in patients with $FEV_1/FVC \geq 0.7$ ($P = 0.001$, $P = 0.006$). The antibiotic prescription rate increased with increasing symptoms from 10% in patients with Anthonisen type 3 to 31.3% in type 1 although it is not statistically significant ($P=0.2$). A similar tendency was shown for treatment with systemic corticosteroids ($P=0.1$). Of the chest findings, prolonged expiration and diminished breath sounds predicted the prescribing of both antibiotics and systemic corticosteroids while wheezes/rhonchi was only significantly associated with prescribing of antibiotics ($P=0.006$) and crackles was significantly associated with prescribing of systemic corticosteroids ($P=0.001$).

Conclusion: Patients with COPD according to the spirometry were treated with antibiotics and systemic corticosteroids more often than patients with $FEV_1/FVC \geq 0.7$ within our cohort. Chest findings were stronger predictors of prescribing of antibiotics and systemic corticosteroids than were the Anthonisen criteria

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OR-095

HELPING PEOPLE WITH SEVERE COPD: DEVELOPING, REFINING AND PILOTING A PRACTICAL INTERVENTION

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Aim: To meet the needs of people with severe COPD through a novel holistic intervention to provide proactive supportive care.

Methods: Following MRC guidelines, we developed, refined and piloted a novel complex intervention, HELP-COPD: a structured, holistic review of care needs delivered at home after hospital admission with COPD. A respiratory nurse assessed social, psychological, spiritual and/or physical needs, provided advice and information, and made further clinical/social care referrals. A summary was given to the patient and their general practitioner (GP). Follow-up included 3 phone calls over 6 months.

We randomised people admitted with COPD to two NHS hospitals in Scotland, to intervention/usual care groups in 3:1 ratio. Health-related quality of life, respiratory health and health care utilisation were measured at baseline, 3 and 6 months. Semi structured interviews with a sub-set of patients, lay-carers and health professionals explored feasibility and acceptability.

Results: We recruited 32 patients (3 died and 1 withdrew due to ill health). 14 patients, 3 carers and 28 professionals provided 41 interviews. Trial procedures proved feasible, though the questionnaires were burdensome for some. The study was not powered to detect differences in outcomes.

Patients were generally positive about the assessment, openly discussing frustrations and coping strategies in all domains. However, fewer unmet needs were identified than expected. Patients were often reluctant to access proffered services; valuing independence and often preferring family support. An admission was perceived as an overly 'busy' time and delaying the intervention for a month was preferred. Prior experience of inaccessible or unacceptable services and poor public understanding of their condition were practical barriers to accepting services.

Professionals considered that the intervention was feasible and showed potential. Positive actions included facilitating discussion with a GP on palliative use of opiates, reinforcing referral to pulmonary rehabilitation and providing contact details of local voluntary services. However, participants highlighted overlap with discharge planning and case management provided by community teams.

Conclusion: The HELP COPD holistic assessment was feasible and generally welcomed. Fewer actions were identified than anticipated; perhaps due to a combination of inappropriate timing, reluctance to accept formal care, long-term adaptation reducing recognition of need, and duplication by existing services.

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OR-096

THE VALUE OF FRACTIONAL EXHALED NITRIC OXIDE (FENO) IN CLASSIFICATION OF ASTHMA SEVERITY AND ASTHMA CONTROL IN ASTHMA PATIENTS IN HO CHI MINH CITY

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Research question: 1. What are cut off points of FeNO to determine levels of asthma severity and asthma control in Vietnamese asthma patients?

2. What are the validity and reliability of these cut off points?

Background: FeNO is a marker of eosinophilic airways inflammation and can help to improve asthma diagnosis and treatment. Before applying FeNO in asthma management in Vietnam, FeNO characteristics of Vietnamese asthma patients need to be known. There is no data of FeNO levels in Vietnamese healthy people and asthma patient population.

Possible methodology: Objectives:

To determine the population normal values for FeNO in Vietnam, and to estimate cut-off values for categorizing asthma severity and asthma control based on GINA criteria.

Study design: prospective, descriptive and analytic study. Population: 274 asthma patients, and 60 controllers (30 healthy persons with negative allergy skin test and 30 stop-treatment asthma patients). Participants will have FeNO and spirometry measurements at each of two visits (3 month interval) in Ho Chi Minh City, Vietnam.

Asthma severity and asthma control will be categorized followed GINA guideline. In the first visit, data will be analyzed to determine the relationship between FeNO and asthma control as well as severity (determine Spearman Rho). Then the cut-off point of FeNO will be determined for each of asthma control and severity level (using ROC analysis and logistic regression analysis). In the second visit, data will be analyzed to determine the validity (determine sensitivities, specificities, likelihood ratios, predictive values) and reliability (using ANOVA repeated analysis and determine Kappa coefficient) of FeNO cut-off point found in visit 1 in predict asthma control and severity.

Questions to discuss: We expect FeNO can be well predict GINA defined asthma severity and asthma control in Vietnamese patients and then the study will provide reliable cut off points of FeNO for each of asthma severity and asthma control in Vietnamese patients. These cut off value will be applied in asthma management in future for diagnosis, treatment, prognosis and follow-up patients' adherence in Vietnam.

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Disclosure of Interest: None Declared

OR-097

GOLD AND GESEPOC: DO WE CHANGE THE TREATMENT ACCORDING TO THE GUIDELINE WE USE?

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Aim: Our main aim is to assess the possibility of implementing COPD guidelines in Primary Health Care (PHC) in terms of time. Other objectives were to assess whether there is any difference in severity and treatment between both COPD guidelines

Methods: Cross-sectional multicentric study which took place in Barcelona city, in PHC examination rooms. 400 patients diagnosed from COPD, from 6 different centres were enrolled. Patients signed informed consent. Both GOLD and GesEPOC guidelines were administered to all the patients of the sample in the same day and by the same investigator, collecting the following data: time needed to implement the guides, socio-demographic data, comorbidities (hypertension, diabetes, obstructive apnoea, depression and anxiety), COPD classification and severity, patient's current treatment and guideline's treatment recommendations. To avoid bias, patients were randomised into which guideline should be first administered. Descriptive and bivariate analysis was made with Chi-square and t-Student tests. Kappa index was calculated for establishing concordance between guidelines in relation to treatment and severity.

Results: We included in the study 400 COPD patients, showing here the preliminary results from the first 143 patients. The sample has a mean age of 69.92 years old (SD 10.59). About 86.6% were men, 32.4% were smoker. The average of FEV1post was 62.49 % (SD 18.09%). About 35.92% had 2 or more exacerbations in the last year. 91% of the patients had some kind of comorbidity. When the patient first perform GOLD guidelines and then GesEPOC, the mean time for GOLD was 6.13 min (SD 2.43) and for GesEPOC was 7.98 min (SD 2.8) ($p < 0.0001$). In case the patient performs first GesEPOC and then GOLD, the mean time was for GOLD 8.10 min (SD 3.73) and for GesEPOC 6.30 min (SD 3.33) ($p < 0.002$). **GOLD classification:** 35.9% stage A, 23.9% B, 5.6% C and 33.80% D. **GesEPOC classification:** 59.2% stage A, 14.8% B, 8.5% C and 16.9% D and 0.70% we could not classify. In terms of severity, patients are classified by GOLD as having mild/moderate disease in 60% of the patients and by GesEPOC 87% of the patients. The patients' baseline treatment matched with GOLD guidelines in 48% and with GesEPOC about 53%. The 71% of treatments recommended were the same between both guidelines with a moderate concordance (K: 0.576).

Conclusion: Both guidelines are feasible to perform in Primary Care Centers in terms of time, but they do not classify severity in the same way. The treatment recommended by both guidelines is not always the same. It has still to be defined which guideline is best for primary care.

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Disclosure of Interest: None Declared

OR-098

USABILITY, CONFIDENCE, PREFERENCE AND SATISFACTION WITH THE USE OF SPACERS: A COMBINED ANALYSIS OF RESULTS FROM THREE STUDIES

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Aim: To assess the usability, confidence, preference and satisfaction with the use of three spacers (Zerostat, Zerostat V and Zerostat VT) in three different, identically designed studies.

Background: Errors with the use of pressurized metered-dose inhalers (pMDIs) reduces lung deposition and increases the local and systemic side effects. The use of a spacer reduces these errors.

Methods: The three studies were open-labelled, prospective and multicentric in patients with mild obstructive disease like asthma and COPD. In these two visit studies, the patients were trained to use the device at visit 1 and again at visit 2, and the average time taken for three consecutive correct attempts was reported (primary endpoint). The secondary endpoints included number and type of errors (critical and non-critical), and scores on usability, confidence, preference, and satisfaction questionnaires.

Results: A total of 90 participants (30 participants per study, 1:1 healthy volunteers: patients with asthma/COPD) completed these studies. The average time taken for three consecutive correct attempts in patients with asthma/COPD in the three studies decreased at visit 2 (2.99, 4.65 and 1.91 minutes) from visit 1 (3.58, 4.99 and 2.23 minutes), respectively. The critical and non-critical errors also decreased at visit 2 from visit 1. Overall reduction in the scores at visit 2 was also observed on the usability, confidence, preference and satisfaction questionnaires.

Conclusion: The results from the three studies demonstrated that Zerostat, Zerostat V and Zerostat VT spacers are easy to learn, understand and operate. This highlights the fact that the spacer devices can be recommended for all patients using a pMDI.

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Disclosure of Interest: None Declared

CHARACTERISING ASTHMA PATIENTS USING DISKUS AT RISK OF PERFORMING SERIOUS ERRORS IN PRIMARY CARE

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Aim: To characterise asthma patients using Diskus at risk of performing serious errors in real-life primary care clinical practice.

Methods: Retrospective, cross-sectional analysis using the international 'implementing Helping Asthma in Real Patients' (iHARP) database including electronic patient records and questionnaires. Characteristics of Diskus patients who performed no serious errors were compared against those performing ≥ 1 serious error using Mann-Whitney test and χ^2 test for numerical variables and categorical variables, respectively. Serious errors were defined by the iHARP steering committee and observed by a qualified nurse between June 2011 and November 2013.

Results: Of 3681 asthma patients, 624(17%) were using Diskus. Of these 624 patients 37% were from the UK, 13% the Netherlands, 24% Italy, 16% Spain, 6% Australia, 1% France, 1% Sweden and 1% Norway. 67% were female and median age was 52(IQR 41-63). 55% of Diskus patients performed ≥ 1 serious error. Most frequent errors were 'Did not breathe out slowly to residual volume' (33%), 'Did not hold their breath for at least 3 seconds' (25%) and 'Inhalation is not forceful from the start' (21%). 57% of patients in the ≥ 1 serious error group did not have their inhaler technique checked in the last 12 months compared to 47% in the no error group ($P=0.012$). 70% of patients in the ≥ 1 serious error group thought their inhaler technique was above average, which was significantly different from the no error group (80%) ($p=0.017$). Female patients (71%), obese (BMI >30) patients (30%) and current smokers patients (12%) performed significantly more serious errors, ($p=0.024$, $p=0.036$ and $p=0.002$, respectively). The performance of serious errors was not significantly associated with age, Charlson Comorbidity Index score, lung function, duration of asthma diagnosis and adherence to ICS therapy.

Image:

	Demographics	No errors (n=282)	≥ 1 error (n=341)	Total (n=623)	χ^2 p-value
Gender	Female, n(%)	176(62.4)	242(71)	418(67.1)	0.024
BMI	Underweight (BMI < 18.5), n(%)	4(1.4)	4(1.2)	8(1.3)	0.036
	Normal BMI (18.5 - 24.99), n(%)	107(37.9)	107(31.4)	214(34.3)	
	Overweight (BMI 25-29.99), n(%)	102(36.2)	110(32.3)	212(34)	
	Obese (BMI >30), n(%)	69(24.5)	120(35.2)	189(30.3)	
Smoking status	Non smoker, n(%)	163(57.8)	193(56.6)	356(57.1)	0.002
	Current smoker, n(%)	28(9.9)	50(14.7)	78(12.5)	
	Ex smoker, n(%)	91(32.3)	98(28.7)	189(30.3)	
Technique check	Not checked in last 12 months, n(%)	132(46.8)	194(56.9)	326(52.3)	0.012
Patients subjective inhaler technique	Unknown, n (% of total)	12(4.3)	23(6.7)	35(5.6)	0.017
	Very poor, n(%)	8(3)	5(1.6)	13(2.2)	
	Poor, n(%)	3(1.1)	8(2.5)	11(1.9)	
	Fair, n(%)	11(4.1)	33(10.4)	44(7.5)	
	Average, n(%)	32(11.9)	46(14.5)	78(13.3)	
	Good, n(%)	108(40)	110(34.6)	218(37.1)	
	Excellent, n(%)	108(40)	116(36.5)	224(38.1)	

Conclusion: Inhaler technique remains poor which could potentially influence asthma outcomes. Patients who are obese, female or are current smokers are particularly at risk of performing Diskus errors. Patients who had not had their inhaler technique checked during the last 12 months performed more serious errors, which highlights the importance of regular monitoring.

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ASSESSMENT OF POTENTIALLY IMPORTANT DEVICE ERRORS PERFORMED BY ASTHMA PATIENTS IN THE GLOBAL IHARP REVIEW SERVICE

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Aim: The global iHARP asthma review service addresses a key strand of the IPCRG's position on establishing reasons for poor asthma control. This is a preliminary study to determine the frequency of potentially important device errors performed by asthma patients in real-life primary care clinical practice.

Methods: Historic, observational study using iHARP database including patient records and questionnaires. Patients from 8 countries with asthma at GINA step 3-4 were recruited. The iHARP steering committee defined generic (error common across all devices) and device-specific errors that might potentially limit drug uptake. Errors were recorded by trained nurses (doctors in Spain) from 2011-2013. The frequency and inhalation stages of errors were categorised for patients using dry powder inhaler (DPI) Diskus, DPI Turbohaler, metered dose inhaler (MDI) and MDI with spacer devices. Variables were adjusted for potential co-linearity.

Results: Of 3,654 patients (33.6% male; median age [IQR] 53 [41, 63]) 59.3% were from UK, 12.4% Netherlands, 11.3% Italy, 10.3% Spain, 4.5% Australia, 1.6% Sweden, 0.4% France and 0.2% Norway. The proportion of patients performing ≥1 potentially important generic or device-specific error by device type was: 90.2% all devices; 83.9% DPI Diskus; 91.3% DPI Turbohaler; 92.0% MDI; 90.8% MDI with spacer (similar for MDI and MDI with spacer). Table 1 shows the frequency of potentially important generic device errors.

Image:

Potentially important generic device errors (categorised by stage)	All devices (n=3,654)	By device type			
		DPI Diskus (n=627)	DPI Turbohaler (n=1,715)	MDI (n=998)	MDI with spacer (n=314)
Preparation errors, n (%)	1,236 (24.9)	270 (31.8)	521 (23.6)	365 (24.7)	80 (19.5)
Positioning errors, n (%)	1,333 (26.9)	252 (29.7)	652 (29.5)	349 (23.5)	80 (19.5)
Inhalation errors, n (%)	1,771 (35.8)	199 (23.5)	753 (34.1)	597 (40.3)	219 (53.3)
Completion errors, n (%)	43 (0.9)	12 (1.4)	19 (0.9)	12 (0.8)	0 (0)
Lack of general device-related knowledge, n (%)	570 (11.5)	115 (13.6)	264 (11.9)	159 (10.7)	32 (7.7)
Total, n (%)	4,953 (100)	848 (100)	2,209 (100)	1,482 (100)	411 (100)

Table 1: Frequency of potentially important generic device errors categorised by stage as comparison of stages.

Conclusion: Asthma patients routinely perform potentially important device errors with all asthma devices across countries. Inhalation errors are most frequent. Spacers are not a panacea. Future analysis of errors vs. asthma control might help validate which errors are important.

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PERSPECTIVES ABOUT SPIROMETRY AND KNOWLEDGE OF SPIROMETRIC DIAGNOSTIC CRITERIA AMONG PRIMARY CARE PHYSICIANS.

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Aim: To gather information on family physician (FP) perspectives on spirometry use and spirometry diagnostic criteria (SDC) for asthma and COPD.

Methods: Data were gathered among 88 FPs attending standardized workshops in Canada between 2011 and 2013. Workshops consisted of several components: 1) 10 questions regarding perspectives on spirometry with 4 SDC questions, 2) Didactic session on spirometry interpretation and SDC, and 3) The same 4 questions on SDC to assess the impact of the training session. Statistical analyses were performed to evaluate FP spirometry perspectives as well as the effect of a training session on SDC knowledge. Data were obtained in real time and anonymously using remote data capture devices; a strategy that would minimize response bias related to data gathered by paper mail or on-line surveys. This information may provide important insight for promoting both optimal management strategies and directions for future research in asthma and COPD diagnosis.

Results: 61% of FPs were 'not very'/'not at all' comfortable with spirometry test administration. Only 9% of FPs were 'very'/'extremely confident' in spirometry test interpretation. These variables were not strongly correlated to physician knowledge of SDC ($p=0.363$). While the majority of physicians indicated that they found spirometry useful in clinical practice, 75% of physicians reported that they did not have same day access to spirometry testing. Prior to component 2, more respondents answered question 7 related to asthma diagnostic criteria (69%) correctly compared to question 8 related to COPD diagnostic criteria (51%). Physician knowledge of SDC improved significantly following the training session using 2 metrics: 1) Number of physicians who answered at least $\frac{3}{4}$ of the questions correctly ($p=0.022$) and 2) Mean number of correct answers ($p=0.008$).

Conclusion: FPs appear to be uncomfortable in performing spirometry tests, lack confidence in spirometry interpretation, and demonstrated knowledge gaps relating to awareness of SDC for asthma and COPD. Our findings highlight a need to promote greater access to same day spirometry and awareness of spirometry interpretation strategies, including diagnostic criteria for both asthma and COPD among primary care physicians.

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SALMETEROL-FLUTICASONE COMBINATION GIVEN THROUGH BREATH ACTUATED INHALER (BAI) COMPARED TO PRESSURIZED METER DOSE INHALER (PMDI) IN PATIENTS WITH MODERATE-TO-SEVERE ASTHMA

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Aim: To demonstrate non-inferiority in terms of efficacy and safety of salmeterol/fluticasone combination (SFC) 50/125 mcg delivered in a breath-actuated inhaler (BAI; by 3M, Autohaler™), developed by Cipla Ltd., in comparison to SFC pressurized metered dose inhaler (pMDI) in patients with moderate-to-severe asthma.

Methods: In this double-blind, double-dummy, prospective, active-control, parallel group, 12 weeks study, 150 asthma patients were randomized (1:1) to receive SFC through BAI or pMDI as 2 puffs BID. The primary endpoint was change in morning peak expiratory flow rate (mPEFR). Spirometry parameters, symptom scores and usability assessment were included as secondary endpoints. Adverse events were monitored at each visit.

Results: Out of the 150 patients, 136 (SFC BAI=70; SFC pMDI=66) completed the study. Significant improvement was seen in mPEFR in both the groups after 12 weeks from baseline (50.7 L/min in BAI and 48.8 L/min in pMDI; $p<0.0001$) and difference between groups was not significant (+1.9L/min; 95% CI: -0.9L, 4.7L). Difference in spirometry parameters at week 2 and week 4 was significantly greater in the BAI group ($p<0.05$). Day and night time symptoms scores and rescue medication doses were similar in both the groups. Seventy-five (75) % of patients preferred BAI over pMDI during usability assessment. There were no differences in frequencies of adverse events.

Conclusion: Salmeterol/fluticasone when given in a BAI is non-inferior as compared with pMDI in terms of efficacy and safety in patients with moderate-to-severe asthma and was the preferred device.

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Disclosure of Interest: None Declared

PHENOTYPING AND TREATMENT STUDY OF PATIENTS DIAGNOSED OF COPD IN PRIMARY CARE

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Aim: A recently published Spanish COPD guide(gesEPOC) in which patients diagnosed with COPD are classified in 4 different phenotypes and according to the severity level a treatment that has more evidence is proposed to be the optimal for the disease(therapeutic algorithm based on bronchodilator therapy basically and various drug combinations as inhaled corticosteroids, theophylline...). The severity level is to be set by a scale known as BODEx that measures airflow obstruction, degree of dyspnea, body mass index, physical activity level and history of severe exacerbations (who required hospital care). It's very important the correct diagnosis of patients, both clinical and spirometric. The work based on this guide seeks that this improvement occurs specifically in the care of patients diagnosed with COPD in our health center (Fuente de San Luis, Valencia, Spain).

Methods: The study is to include all patients in our health center diagnosed with COPD by medical history program implemented in the Valencia Health Agency(Abucasis) with spirometry done in the center itself and check that the treatment is being carried appropriate based on the guide of gesEPOC. We aim therefore phenotyped patients, define its severity and establish that the treatment should take. The way to do this is through a clinical interview. There are questions about smoking, occupational exposure to toxic agents and degree of dyspnea. With the level of gravity by scale named above(BODEx), patients are classified in their phenotype and obtaining its severity. We have to check that the prescribed treatment is correct and this will inform the doctor of the health center. Data are collected and analyzed using the SPSS statistical analysis program. To carry out the work it has been passed by an ethics committee, which approved the study.

Results: The study period comprises between November 2013 to March 2014. In our clinic 859 people are diagnosed with COPD. Of these people have spirometry done in the health center 192, of which 127 have obstructive spirometry and therefore can be included in the study. The first conclusions are that the spirometry are applied with good clinical judgment, because a high percentage of requested are obstructive. But many of these patients with symptoms compatible with COPD and who are diagnosed and treated as such, don't have spirometry done. All these people are being interviewed in the health center. We will get information about which is the frequency of each phenotype and what percentage of patients are with the right treatment.

Conclusion: We understand that this may be an important way to improve the care of our patients with COPD, because is a underdiagnosed and in many occasions not treated appropriately disease and we pretend that the results are presented at the congress of IPCRG Athens 2014, because we think it is a work done by and for primary care physicians.

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OR-104

A TWO PART STUDY TO ASSESS PATIENT'S KNOWLEDGE AND ATTITUDES REGARDING ANTIBIOTIC USE FOR UNCOMPLICATED UPPER RESPIRATORY TRACT INFECTIONS (URTIS) AND THE EFFECTIVENESS OF USING A TAKE HOME PATIENT INFORMATION LEAFLET DURING THE CONSULTATION TO REDUCE ANTIBIOTIC PRESCRIBING IN GENERAL PRACTICE.

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Brief outline of context: The common cold which is usually caused by a rhinovirus is the most prevalent disease in humans. There is no role for antibiotics in the treatment of the common cold/upper respiratory tract infection (URTI). It is important to address the issue of antibiotic overprescribing and overuse as antibiotic resistance is a major public health concern.

Brief outline of what change you planned to make: To reduce the prescribing of antibiotics for uncomplicated URIs through the use of a patient information leaflet as an educational tool during the consultation and to learn about patient's knowledge and attitudes regarding the use of antibiotics for URIs.

Assessment of existing situation and analysis of its cause: Prescribing patterns within the practice were assessed for those consultations for URIs prior to the intervention. 47.5% of patients received an immediate prescription for antibiotics, 15 % received a reserve prescription and 37.5% received no prescription. As antibiotics have no role in the management of URIs this demonstrated significant inappropriate use of antibiotics. A questionnaire was also distributed to patients to establish their personal management of URIs to assess knowledge of the general public regarding antibiotic use.

Strategy for change: who, how, following what timetable: An information leaflet was devised for use by the GP within the consultation. It contained information about antibiotics and resistance, URTI symptom duration and information about over the counter products for symptom relief. The leaflet was introduced to the consultation and a log of the management of patients presenting with URIs was kept.

Effects of changes: An overall reduction in prescribing of antibiotics was made. There was an increase in advice only (from 37.5 % to 43.3%) and reserve prescriptions (from 15% to 43.3%) and a reduction in immediate prescribing of antibiotics (from 47.5% to 13.3%).

Measurement of improvement: GPs found the information leaflet easy to use and patients were satisfied. There was a small reduction noted in reconsulting within 14 days with the same symptoms after the implementation of the leaflet from 7.5% to 6.6%. The average duration of the consultation was reduced from 11 minutes to 10 minutes.

Lessons learnt: Patients generally had good understanding of rational antibiotic use with 73.3% of respondents demonstrating knowledge of the correct use of antibiotics. A substantial reduction in antibiotic prescribing could be achieved using a simple intervention.

Message for others: The data reveals that GP's perceptions of why patients attend the GP with a URTI may be false with most patient's (43.3%) attending for symptom relief not to receive a prescription for an antibiotic (30%). After the implementation of a simple yet cost effective and resource saving innovation, the overall prescribing of antibiotics for uncomplicated URIs reduced without an increase in reconsulting.

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Disclosure of Interest: None Declared

PREVALENCE OF INAPPROPRIATE PRESCRIBING OF INHALED CORTICOSTEROIDS FOR RESPIRATORY TRACT INFECTIONS IN THE NETHERLANDS

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Aim: Continuous use of inhaled corticosteroids (ICS) is recommended in all patients with persistent asthma and those with severe chronic obstructive pulmonary disease. An Australian study showed that from patients with only one ICS dispensing and no other prescribed respiratory medication, who were therefore unlikely to have chronic airways disease ('one off ICS'), 44% were co-dispensed oral antibiotics (Poulos LM et al., Prim Care Respir J 2013). The aim of our current study was to investigate the extend of one-off ICS dispensing and their potential misuse in the management of respiratory infections in the Netherlands.

Methods: Data were obtained from the Dutch Foundation of Pharmaceutical Statistics that collects dispensing data from almost all 1,950 Dutch community pharmacies. Patients with at least one ICS dispensing in 2011 were included in the study. With multivariate logistic regression the influence on receiving one-off ICS was calculated for co-dispensing of oral antibiotics as main predictor of interest.

Results: Data were available from 1,725 pharmacies. Within 845,068 ICS users 10% were dispensed one-off ICS, from which 12.9% were co-dispensed oral antibiotics. For potential use for respiratory infections one-off ICS was dispensed mostly on GPs' prescription and mainly in fixed combinations with long acting bronchodilators, at annual costs of €555,000. Co-dispensed oral antibiotics increased the risk of a one-off ICS dispensing within all ICS users by 26% (OR 1.26, 95%CI 1.22, 1.29).

Conclusion: Although in the Netherlands ICS prescribing for respiratory infections was considerable lower than in Australia, given the potential side effects of ICS and avoidable medication costs, there is still room for improvement of ICS prescribing.

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RESPIRATORY MORTALITY IN UNDER-5S IN UGANDA DRAMATICALLY REDUCED 2000-2013

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Brief outline of context: Background: The term acute respiratory infection (ARI) is often used in parallel with pneumonia. ARI/pneumonia in children under 5 years (Under-5s) is the major cause of morbidity and mortality in low-income countries. In Uganda, ARI in Under-5s has caused high case fatality rates (CFR).

Methods: A historic comparison of CFR in Under-5s admitted with severe ARI/pneumonia in Mulago Paediatric Ward, Uganda was done, looking at 6 consecutive studies from 2000-2013. The studies had different purposes, but similar inclusion criteria. Variables regarding treatment were: antibiotics, zinc, HAART, PJP-treatment, inhaled salbutamol and steroids.

Results: CFR declined from 27% in year 2000 (Namagala), 24% in 2004 (Bakeera-Kitaka), 15% in 2006 (Nantanda), 12% in 2009 (Shrinivasan), 3 % in 2013 (Nantanda) to 1 % in a study done in 2013 (Ndeezi). Inhaled salbutamol and steroids were only systematically used in the last two studies.

Discussion: Until recently, little attention has been paid to asthma in U-5s in Sub-Saharan Africa and most children admitted with ARI were diagnosed with pneumonia according to the WHO-criteria. However in a recent study (Nantanda 2013), 40 % of Under-5s admitted with ARI were diagnosed with asthma syndrome and were treated accordingly. Therefore focus on asthma may have contributed to this dramatic decline in CFR. However, other variables and confounders still have to be analysed.

Conclusions: Focus on asthma may have contributed to a significant decline in mortality in Under-5s admitted with severe ARI and will hopefully help fulfilling the MDG-4 on reducing child mortality.

Brief outline of what change you planned to make: ?

Assessment of existing situation and analysis of its cause: ?

Strategy for change: who, how, following what timetable: ?

Effects of changes: ?

Measurement of improvement: ?

Lessons learnt: ?

Message for others: ?

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A PILOT STUDY OF PULMONARY REHABILITATION IN POST TUBERCULOSIS PATIENTS IN UGANDA

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Aim: To undertake a feasibility and acceptability pilot study of pulmonary rehabilitation in people with functional impairment after pulmonary tuberculosis (TB)

Methods: Patients were recruited from Mulago Hospital respiratory outpatient department in Kampala. They were included if they had functional impairment from breathlessness from previous pulmonary TB and were sputum negative. The rehab was based on existing programmes for chronic lung disease and adapted for post TB patients by the Mulago team. The programme consisted of 2 sessions per week comprising exercise for at least 1 hour and education about TB, breathlessness, self-management including smoking, diet, exercise and management of relapse. Health status and exercise capacity measures were obtained at the beginning and after the 6 week programme.

Results: Ten patients, 6 male, were recruited to and all completed the programme, one was not available for assessment. The mean age was 42.9 (s.d 14.5). All were non smokers, 3 ex-smokers. Seven patients had one previous TB treatment episode; one had had two, one three and one four times.

All 10 participants reported chest pains at baseline, but only 3 after rehab; haemoptysis fell from 4 to 1/10; night sweats from 2 to 1/10 and cough from 8 to 6/10. Improvements were seen in mean MRC dyspnoea scale, the total Clinical COPD Questionnaire (CCQ) score fell by 2.1 (clinically important improvement =0.4) and in exercise capacity.

Table. Baseline, end and six weeks post pulmonary rehabilitation outcomes

Interval	CCQ				MRC dyspnoea scale, Mean (SD)	Exercise capacity		Nutritional status		
	Total, Mean (SD)	Symptoms, Mean (SD)	Mental state, Mean (SD)	Function, Mean (SD)		Sit-stand, Mean (SD)	ISWT (m) Mean (SD)	Weight (Kg), Mean (SD)	MUAC (inch) Mean (SD)	Mid-thigh circumference (inch) Mean (SD)
Baseline	3.1 (0.89)	2.9 (1.75)	2.9 (0.86)	2.1 (1.02)	2.9 (0.60)	1.9 (0.32)	596 (314.89)	56.9 (8.74)	9.7 (1.54)	17.2 (2.47)
End rehab	1.4 (0.63)	1.5 (0.83)	1.0 (0.45)	1.1 (0.56)	1.2 (0.63)	1.2 (0.42)	771 (153.29)	57.1 (7.20)	9.6 (1.51)	18.3 (2.61)
6 weeks post rehab	1.0 (0.65)	1.5 (1.06)	0.7 (0.50)	0.7 (0.56)	1.1 (0.33)	1.0 (0.00)	1027 (181.09)	58.4 (6.17)	9.9 (0.83)	19.1 (2.38)

Notes: ISWT -Incremental Shuttle Walking test; MUAC -Mid upper arm circumference; MRC -Medical Research Council

The program was well received by the patients, 8 strongly agreed that the program helped them manage their chronic lung disease effectively, 7 strongly agreed that the education was appropriate and all would recommend the program to other patients.

Conclusion: Preliminary results show that the pulmonary rehabilitation was feasible and acceptable to staff and patients and major improvements were seen in symptoms, quality of life and exercise capacity. Further research is ongoing to examine the optimum programme design. Rehabilitation offers a new and sustainable therapy for the neglected problem of chronic lung disease after TB in low to middle income countries.

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DIAGNOSIS OF CHILDHOOD ASTHMA IN PRIMARY CARE: COULD IT BE VALIDATED BY INFORMATION IN THE MEDICAL RECORD OF THE CHILD?

We do not have consent to publish this abstract on-line.

CHRONIC RESPIRATORY CONDITIONS IN A COHORT OF METROPOLITAN FIRE-FIGHTERS: ASSOCIATIONS WITH OCCUPATIONAL EXPOSURE AND QUALITY OF LIFE

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Aim: To assess the prevalence of chronic respiratory conditions in metropolitan fire-fighters, and study associations between occupational exposure, use of respiratory protection, and health-related quality of life (HRQoL) in fire-fighters with and without chronic respiratory conditions.

Methods: Cross-sectional cohort analysis. Respiratory symptoms, medical conditions, occupational tasks and exposures, and consistency of using respiratory protection were inquired by questionnaire. The SF12@V2 Health Survey was used to measure physical (PCS-12) and mental (MCS-12) HRQoL. Fire-fighters were categorized in subgroups: asthma; COPD/emphysema/chronic bronchitis; no chronic respiratory conditions, and as being 'not involved' or 'involved' in fire-fighting tasks, the latter further categorized as 'consistent' or 'inconsistent' use of respiratory protection. PCS-12 and MCS-12 scores were compared between subgroups and categories using linear regression analysis.

Results: 570 fire-fighters were analysed, 24 (4%) fulfilled the criteria for asthma, 39 (7%) for COPD/emphysema/chronic bronchitis. Fire-fighters with asthma were older than those in the other two subgroups and had been employed in the fire-service longer. Respiratory subgroups did not differ in their involvement in fire-fighting tasks. 91% of fire-fighters reported relevant occupational exposure in the past year. Mean PCS-12 scores for fire-fighters with no chronic respiratory conditions, asthma, and COPD/emphysema/bronchitis were 52.0 (SD 6.9), 47.0 (8.5) and 48.1 (9.4). For PCS-12 (but not for MCS-12) interaction between having a chronic respiratory condition and inconsistent use of respiratory protection during fire knockdown was observed ($p < 0.001$).

Conclusion: 10% of metropolitan fire-fighters reported underlying chronic respiratory conditions. Presence of such a condition in combination with suboptimal protection from inhaled exposures may lead to poorer physical HRQoL. Fire-services should pay specific attention to consistent use of respiratory protection devices in employees who have underlying chronic respiratory conditions but are nonetheless exposed to inhaled matters when fulfilling their professional duties.

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Disclosure of Interest: None Declared

PO001-THU

THE UTILITY OF PEAK-FLOW METER IN ASTHMA EXACERBATIONS IN OUR ENVIRONMENT: REAL LIFE VERSUS CLINICAL GUIDELINES.

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Research question: See the correlation between clinical criteria and measurements of peak expiratory flow (PEF), to estimate the obstruction severity in asthma exacerbations and its utility in the post-initial treatment in primary care settings.

Background: All clinical guidelines and consensus say that PEF measurement in asthma exacerbations is essential in management of the acute disease. It is well established among all of experts, although based in few and short studies.

Possible methodology: Analytical study between diagnostic tests. Study population: patients with asthma attacks treated in our emergency primary care district. Inclusion and exclusion criteria are defined. PEF measurements will take place at the beginning of the treatment and at 15, 30 and 60 minutes after. To avoid variability in treatment, all professionals involved (medical doctors and nurses) will follow the same algorithms, based in the current clinical guidelines. We will divide the professionals in two groups: A and B. In the first 6 months the A group will use the Peak Flow meter and not the B team; and in the second period of the year, the B group will use it, but not the A team.

Stratified systematic sampling. Patients following will be tracked by telephone a week after the discharge home or referral to hospital.

Variables: Quantitative discrete to numeric scales; diagnostic categories (mild, moderate, severe) for respiratory rate, heart rate, SpO₂ and PEF scales, defined by severity of asthma attacks in clinical guidelines and studies reviewed.

Univariate descriptive analysis with frequency measures for each of the studied variables: Student t X2 or Wilcoxon test.

Correlation analysis between variables: Pearson's correlation coefficient or Spearman as they are distributed symmetrically or ordinal, and simultaneous inclusion in logistic regression models.

Software support: EPIDAT data base. Calculating sample size: 434 patients

Questions to discuss: We don't use PEF in our environment for asthma attacks, despite the clinical guidelines, but the overall impression in management of these patients is quite good, and is getting better the last years.

The objective of the study will be to see whether the use of PEF in asthma exacerbations is so essential in the management of these patients, as the clinical guidelines indicate. If so, it would serve to implement its use in all primary care settings in our district. If not do not consider this device as essential as guidelines indicate.

Determining PEF or not will not damage the patient because we don't use it in our area, anyway. However, it would improve the management of these patients, any case.

Data will be collected after signing the informed consent. Patients will be treated according to the data protection law.

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Disclosure of Interest: None Declared

PO002-THU

DETERMINANTS OF ASTHMA CONTROL IN THE PORTUGUESE ASTHMA SURVEY

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Aim: To study possible determinants of asthma control in Portuguese adults.

Methods: All asthma patients identified in the first phase of the Portuguese Asthma Survey, who accepted to participate in the second phase were included. Data collection used computer assisted telephone interview performed by trained interviews. Asthma control was assessed by the Control of Allergic Rhinitis and Asthma Test (CARAT).

Results: Three hundred sixty four adults were included. The proportion of uncontrolled disease was 0,43 (95% IC:0,38-0,48). Non-adjusted logistic regression showed association between uncontrolled disease and age (OR=1,024; 95% IC:1,015-1,034); female gender (OR= 2,969; 95% IC:1,907-4,623); monthly household income <1000 euros (OR=2,120; 95% IC:1,231-3,653); medium-low and low socioeconomic class (OR=3,886; 95% IC:1,524-9,913 and OR=10,250; 95% IC:3,609-29,111; respectively); sinusitis (OR=2,625; 95% IC:1,402-4,915); cardiovascular disease (OR=4,042; 95% IC:2,530-6,456); patient perception of uncontrolled disease (OR=8,803; 95% IC:2,544-30,462); perception of non-participation in treatment decisions (OR=1,822; 95% IC:1,172-2,834); lack of adherence to therapy for economic reasons (OR=4,977; 95% IC:1,627-15,229).

Conclusion: Asthma control is associated with patient non-modifiable factors such as gender; personal factors such as self-perception of control; socioeconomic factors including lack of adherence for economic reasons and dependent factors of the doctor-patient relationship, namely patient involvement in treatment decisions.

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Disclosure of Interest: None Declared

OVER-CLASSIFICATION OF ASTHMA IN CHILDREN IN PRIMARY CARE

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Aim: Asthma is one of the most common chronic diseases in childhood. According to the guidelines the diagnosis should be objectified with spirometry in children above the age of six. Previous studies have shown evidence that asthma in children is probably over-classified. The extent to which this occurs was never assessed.

The objective of this study was to assess the number and determinants of children in primary care with a correct diagnosis of asthma according to primary care guidelines.

Methods: A retrospective analysis was carried out using routine care registration data in Julius Health Centers, the academic primary care practices in Utrecht, the Netherlands. Children between the age of 6 and 18 who received the diagnosis asthma or were treated with asthma medication were included. The diagnosis asthma was considered correct in case of recurrent dyspnea or wheezing, with reversible bronchial obstruction, objectified with spirometry. The following data were collected from the medical files of each patient: age, sex, presence of the international classification of primary care (ICPC) code for asthma (R96), year of diagnosis, whether the diagnosis was established according to the guideline, number of episodes referred to by a GP as exacerbation in 2012, use of chronic inhalation medication, type of medication and amount of inhalation medication used in 2012.

Results: In 16,1% (n=105) of the children classified with asthma the diagnosis was objectified with spirometry, 23,2% (n=151) were probably correctly classified as having asthma based on signs and symptoms but should undergo spirometry. More than half (53,5%, n=396) of the children was incorrectly classified with asthma, the remaining 7,2% (n=47) was probably correct classified as not having asthma. The main reason for classifying asthma without spirometry was dyspnoea (31,9%), cough (26,0%) and wheezing (10,4%). The majority of the children who had their diagnosis objectified with spirometry used a combination of an inhalation corticosteroid and a B2 sympathomimetic, as recommended in the guidelines. The number of asthma medication prescribed and the number of exacerbations was highest in children who underwent spirometry.

Conclusion: Over-classification of asthma is alarmingly common in primary care, leading to unnecessary treatment, disease burden and impact on quality of life. Only in a minority of children the diagnosis asthma is established by spirometry, despite recommendations in the guidelines. Diagnosis and treatment in children with respiratory disorders in primary care should be better structured and monitored.

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Disclosure of Interest: None Declared

PO004-THU

EVALUATION OF A RISK OF DEVELOPING COMPLICATIONS IN COMMUNITY ACQUIRED PNEUMONIA PATIENTS: A PROSPECTIVE STUDY.

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Aim: The objective of this study is to identify blood inflammatory markers, respiratory failure and pneumonia severity indicators to predict the risk of developing complications of community-acquired pneumonia.

Methods: This was a prospective study which involved 36 patients hospitalised with community-acquired pneumonia (CAP). Monitoring the course of disease, patients were divided into two groups: uncomplicated and complicated (parapneumonic pleural effusion, empyema, bilateral pneumonia, sepsis). To prognosticate CAP complications were chosen following criteria: gender, age, total hospitalisation time, blood leukocyte quantity, C-reactive protein's and procalcitonin's concentrations in arterial blood, PaO₂, SaO₂ of the first hospitalisation day. The severity of pneumonia was assessed under the PSI and CURB65 scales.

Results: Of 36 patients with pneumonia 23 (64%) developed complications. Development of complications did not correlate with gender, age, PaO₂, SaO₂, blood leukocyte quantity, C – reactive protein's and procalcitonin's concentrations in arterial blood, PSI and CURB65 score results. There is significant correlation between: PSI and CURB65, PSI and age, PaO₂ and procalcitonin's concentration in arterial blood, SaO₂ and CURB65.

Conclusion: Inflammation markers in arterial blood test (C – RP, white blood cell count, procalcitonin's concentration), respiratory failure indicators (PaO₂, SaO₂), pneumonia severity scores (PSI, CURB65) correlate, but they are not applicable to predict development of complications in patients with community acquired pneumonia.

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Disclosure of Interest: None Declared

ONCE-DAILY TIOTROPIUM RESPIMAT®: SAFETY AND TOLERABILITY RESULTS FROM FIVE PHASE III TRIALS IN ADULTS WITH SYMPTOMATIC ASTHMA

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Aim: Tiotropium Respimat®, a once-daily long-acting anticholinergic agent, is effective as add-on to inhaled corticosteroids (ICS) ± a long-acting β_2 -agonist (LABA) in adults with symptomatic asthma. Safety and tolerability are key issues in the development of new therapies or established therapies in new disease areas. We present key safety data from five Phase III, randomised, double-blind, parallel-group trials that evaluated once-daily tiotropium Respimat® efficacy and safety versus placebo in adults with symptomatic asthma.

Methods: Two 48-week trials of tiotropium Respimat® 5 µg (PrimoTina®: NCT00776984, NCT00772538) in patients on high-dose ICS (≥ 800 µg budesonide equivalent) + LABA; two 24-week trials of tiotropium Respimat® 5 µg and 2.5 µg (MezzoTina®: NCT01172808, NCT01172821) in patients on moderate-dose ICS (400-800 µg budesonide equivalent); one 12-week trial of tiotropium Respimat® 5 µg and 2.5 µg (GraziaTina®: NCT01316380) in patients on low-dose ICS (200-400 µg budesonide equivalent).

Results: 3476 patients were treated. Incidence of any adverse events (AEs), serious AEs and investigator-defined drug-related AEs was similar across treatment groups within each trial. AEs reported by $\geq 5\%$ of patients were similar across all treatment groups within each trial (Table). The number of cardiovascular AEs was small in all five studies and comparable between tiotropium Respimat® and placebo. No deaths occurred in any trial.

%	PrimoTina®		MezzoTina®			GraziaTina®	
	Tiotropium 5 µg (n=456)	Placebo (n=456)	Tiotropium 5 µg (n=517)/ 2.5 µg (n=519)	Salmetero I (n=541)	Placebo (n=523)	Tiotropium 5 µg (n=155)/ 2.5 µg (n=154)	Placebo (n=155)
Any AE	73.5	80.3	57.3/58.2	54.3	59.1	32.3/31.2	29.0
Drug-related AE	5.7	4.6	7.4/6.9	5.2	5.4	1.3/1.3	1.3
Serious AE	8.1	8.8	2.1/2.3	2.0	2.7	0.6/0	0.6
Asthma	39.9	50.9	21.5/15.8	19.4	22.0	11.0/15.6	12.9
Bronchitis	5.5	4.4	2.1/1.7	1.7	1.0	1.9/0	0.6
Decreased peak expiratory flow rate	20.4	26.8	11.4/9.4	8.7	15.1	3.9/5.8	3.9
Headache	6.4	7.2	1.5/3.5	1.1	2.7	1.9/0.6	0
Nasopharyngitis	11.2	12.3	7.9/9.4	7.6	9.2	0.6/1.3	3.2
Upper respiratory tract infection	4.6	3.5	3.7/5.2	7.6	7.8	4.5/1.3	4.5

Conclusion: Once-daily tiotropium Respimat® is well tolerated and comparable with placebo in adult patients with symptomatic asthma receiving at least low- to high-dose ICS.

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PO007-THU

USE OF SPIROMETRY IN THE DIAGNOSIS OF COPD IN FAMILY PRACTICE IN ALBERTA

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Research question: What is the frequency of a (confirmatory) spirometry in Alberta? What are possible causes for the inaccuracy? What are possible solutions to improve the diagnosis and treatment of COPD?

Background: An ongoing study in Alberta has discovered that many patients with the recorded diagnosis of COPD do not have confirmatory spirometry which you need according to the Canadian Thoracic Society Guidelines to diagnose COPD. As far as we know nobody has studied the frequency of spirometry performance for diagnosing COPD in Alberta before. Not having the result of a spirometry influences the type of treatment the patient gets. Physicians also might treat patients who do not even have COPD and maybe have asthma.

Possible methodology: This retrospective study examined patients who have been previously diagnosed with COPD in a family practice. Patientcharts were examined for gender, age, smoking status, and spirometry data. Participating physicians were interviewed and required to complete a questionnaire regarding barriers they encountered in performing a spirometry in patients diagnosed with COPD.

Questions to discuss: This abstract contains preliminary results of 125 patients from a total of 285 patients, at the congress all data will be available.

One hundred twenty-five patients from three practices were included. Spirometry was performed in 58.4% of the patients. In male patients and former smokers, spirometry was performed more often in comparison to females, current smokers and, non smokers, $p=0.0474$ and $p=0.02$ respectively.

Eleven physicians completed the questionnaire and were available for the interview. The most frequently mentioned barrier in performing a spirometry was limitation of the clinical staff (41%) (physician and the clinical nurse). The second and third most mentioned barrier in performing a spirometry was patient-related factors (e.g. comorbidities) (16%) and the absences of a well trained COPD nurse in the practice (11%).

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Disclosure of Interest: None Declared

PO008-THU

ASSESSMENT OF THE QUALITY OF LIFE OF PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) AT PRIMARY HEALTH CARE LEVEL

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Research question: The purpose of this study was to assess the quality of life of patients with COPD, in a given time, in primary care.

Background: COPD is one of the major public health problems. In Greece 8.4% of the population over 35 suffers from COPD, one of the chronic diseases that has great impact on the quality of life of patients.

Possible methodology: We studied 117 adults with COPD followed at the chronic disease department of Health Centre of Salamis. The patients completed the qualified for COPD questionnaire [COPD Assessment Test (CAT)], followed by spirometry and were classified into four stages of COPD sorted by GOLD, based on their performance (FEV1%). **Results:** Among 117 patients studied, 62,4% (n=73) were men and 37,6% (n=44) women, average age 60-80 years 58,1%(n=68). The CAT results were as followed; 22,2% (n=26) low score, 36,7% (n=43) moderate ratings, 25,6% (n=30) high and 15,5% (n=18) very high score. Patients in stage II were 36,75% (n=43), stage III 29,05% (n=34) and stage IV 19,65% (n=23). Patients with COPD in stage I had a normal response to exercise, stage II patients had reduced exercise capacity and increased fatigue, while patients in stage III and IV had much greater reduction (> 80%) in exercise capacity.

Questions to discuss: This study confirms that the subjective perception of patients with COPD is in correspondence with the objective findings characterizing the disease progression. Quality of life is determined by the stage and the severity of COPD. According to international guidelines, the improvement of patients health with COPD aims to reduction of the disease's socio-economic burden which amounts to 5 billion euros per year.

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Disclosure of Interest: None Declared

PO009-THU

A STUDY OF PREGNANT AND NO PREGNANT WOMAN INTENDING AND NOT INTENDING TO QUIT SMOKING

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Aim: Smoking is an important factor in mortality and morbidity. It is expected that between 2005 and 2030 it will kill more than 175 million people. As it is well known, perceived benefits and risks of quitting smoking are crucial factors in successful treatment. This study aims to examine the correlation between the continuing of smoking or it's quitting and their impacts in patient's health.

Methods: Eighty women, with subgroups formed by pregnant/non pregnant women and trying/not trying to quit smoking, performed judgments of the probability for consequences to occur given the condition of continuing or quitting smoking.

Results: for both the pregnant and non pregnant women, the probability that consequences will occur was rated less likely given the condition of quitting smoking. The condition of quitting had its greatest affect on the probability that somatic consequences would occur.

Conclusion: Consequences of smoking for somatic health should be stressed in health promotion, especially to pregnant women.

Keywords: Consequences, pregnancy, quitting, smoking

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Disclosure of Interest: None Declared

PO010-THU

USE OF HEALTH RESOURCES BY SMOKERS AND NON SMOKERS

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Aim: As smokers have higher morbidity than non smokers they can be more expensive for the Public Health System. The objective was to evaluate whether smokers generate more use of health care and worker absenteeism than non-smokers.

Methods: Retrospective case-control study (January-December 2009). We analyzed 540 patients of 45-75 years of a primary care health centre of Zaragoza (Spain); patients were matched for age and sex and former smokers were excluded. We calculated means and standard deviations for quantitative variables and proportions and confidence intervals at 95% for qualitative variables. For comparison of means was used ANOVA, to compare proportions Chi2 test and measurement the risk was calculated OR. The statistical package used was STATA9.1

Results: Mean of days by leave sick in general population was 13.44 (95% CI 7.89-18.99), 15.49 in smokers and 11.26 nonsmokers (F=49.28; p<0,0001); 31.96% of smokers had a chronic disease compared to 19.15% of non-smokers (p = 0.043). The smoking status, adjusted for age, BMI, alcohol consumption, and physical inactivity doubles the chance of developing a chronic disease like COPD an others (OR = 2.16). The average annual of hospitalization days was 1.75 (CI: 0.95-2.55) in smokers and 0.56 (CI:0.25-0.87) in nonsmokers. The smokers take more drugs than nonsmokers (3.61; CI: 3.17-4.05 and 2.42 (CI:2.05-2.79). The average annual cost of health care was 710.89 euros in nonsmokers and in smokers 1571.84.

Conclusion: Smokers have more chronic diseases and almost 30% more days off work by year. The annual cost for smokers was 860.95 euros more than nonsmokers. It would be profitable to invest more resources in prevention and treatment of smoking.

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Disclosure of Interest: None Declared

NON RESOLVING PNEUMONIA – CASE REPORT

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Aim: The case regards a 62-years-old Italian man, heavy smoker, working in the dialysis setting, seemingly healthy except for a chronic bronchopathy. On 4th January 2013, because of fever (>38°C) with cough increase, purulent expectoration and malaise, he consulted his GP who empirically prescribed an antibiotic therapy (Amoxicillin 875 mg+Clavulanic Ac. 125 mg os b.i.d. for 6 days). Persisting symptoms the patient came back to his GP who prescribed a new antibiotic (Cefonicid 1 gr i.m. u.i.d. for 6 days) and a chest X-ray that 10 days after displayed a little irregular parenchymal consolidation at the apex of the right lung evocative for pneumonia (CAP). Given that and the persistence of productive cough and slight fever, the GP prescribed 5 days more of Cefonicid and a X-ray control performed on 4th March and brought to the doctor only on 4th June. The new X-ray proved a worsening, showing several lung consolidations involving the whole upper right lobe; the report concluded suggesting a widening chest CT-scan. Despite that, the GP limited himself to prescribe a new antibiotic (Ceftriaxone 1 gr i.m. u.i.d. for 6 days) and a chest X-ray more that the patient didn't accomplish in the near. During the following three months, slight fever and poorly productive cough continued together with a progressive weight loss. A chest CT-scan prescribed by a respiratory GPwSI (in second opinion) in early September showed a wide cavitory lesion of the upper right lung lobe and several nodules disseminated in the other lobes, as well as some opacities were in the left lung. Followed urgent hospitalization in the suspicion of pulmonary tuberculosis and the patient was discharged, a month later, with the diagnosis of "Pulmonary Atypical Mycobacteriosis". This "Non resolving pneumonia" (NRP) case-report focalizes on the crucial role of GPs in the matter. NRP is a clinical syndrome in which focal infiltrates begin with clinical association of acute pulmonary infection and despite a minimum of 10 days of antibiotic therapy, patients improve or worsen or radiographic opacities don't solve in 12 weeks. It regards 6-15% of hospitalized CAP. Mortality by NRP is increased several-fold in comparison with responding patients, so a quick diagnosis is strongly needed. Given the correct use of guideline-recommended therapy, NRP can mostly be due to host factors, unusual or resistant microorganisms, misdiagnosed non infectious diseases mimicking pneumonia or complications. Non response management consists in the transfer of the patient to a higher care level, further diagnostic testing (microbiology, imaging, bronchoscopy with BAL), rise or change in treatment. Beyond the initial CAP management, certainly more known, also that of the NRP is recommended and detailed by specific guidelines that could help GPs in this difficult decision-making process, since the clinical re-evaluation of the patient belongs to the Primary Care.

Methods:

Results:

Conclusion:

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Disclosure of Interest: None Declared

PO012-THU

EFFICACY AND SAFETY OF TWO HFA FORMULATIONS OF IPRATROPIUM BROMIDE MDI IN PATIENTS WITH MILD TO MODERATE CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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Aim: To compare the efficacy and safety of generic ipratropium bromide HFA pMDI (Test IB; Cipla Ltd., India), against ipratropium bromide HFA pMDI, Atrovent (Ref IB; Boehringer Ingelheim, UK), in patients with COPD.

Methods: This was a 12-week, randomised, double-blind, double dummy, parallel group, multicentre study in patients with COPD. Patients were randomised to either test or reference product, 20 mcg/actuation, to be given as 2 puffs TID. The primary endpoint was change in pre dose forced expiratory volume in one second (FEV₁) measured at 90 mins post dose at week 12 from baseline. The secondary endpoints included measurements of forced vital capacity (FVC), symptom scores and rescue medication use. Safety was also assessed.

Results: Out of the 395 randomised patients, 341 (Test IB=170; Ref IB=171) completed the study. The mean change in FEV₁ at 90 mins after dosing at week 12 from baseline was 0.107 L/min for the Test-IB and 0.110 L/min for Ref-IB. The difference between the two groups was 0.003 L/min (95% CI: -0.0408, 0.0401). The symptom scores decreased in both the groups through 12 weeks and the other secondary endpoints were comparable between the two groups. Both formulations were well tolerated.

Conclusion: Ipratropium bromide HFA pMDI (Cipla Ltd., India) was found to be non-inferior to reference ipratropium bromide pMDI (Atrovent) in improving lung function and reducing symptoms of COPD.

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Disclosure of Interest: None Declared

PO013-THU

PRIMARY CARE RESPIRATORY PHYSICIAN- PRACTICE PROTOCOL IN DEVELOPING COUNTRY

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Brief outline of context: patient attend at doctor chamber with a lot of expectation about their treatment and wellbeings, but reality is that most of the patient and care giver are not aware about their health related issues. Respiratory problem are increasing day by day in developing countries. Education, awareness and treatment are main motto of asthma, COPD and others respiratory problem. Respiratory care physician are very limited especially in primary care. Majority doctors and health care professional are not update in modern management of asthma and COPD. There is no ideal model or unique protocol to patient center care with in limited resources. What will do our service development? A model will show during presentation.

Brief outline of what change you planned to make: Practice protocol and patient counseling

Assessment of existing situation and analysis of its cause: Patients are not getting appropriate services due to lack of physician practice protocol awareness

Strategy for change: who, how, following what timetable: Physician and health care provider will be change
If follow a model primary care respiratory physician practice protocol

Effects of changes: Doctors realize there gap and change there practice protocol

Measurement of improvement: Asthma control will be improve and number of COPD patient will be reduce.

Lessons learnt: Share a model of primary care practice protocol and change attitude of physician

Message for others: Asthma and COPD patient first attend to primary care physician instead of tertiary care level in developing country.

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Disclosure of Interest: None Declared

EVALUATION OF KNOWLEDGE ABOUT ASTHMA AND COPD: IMPACT OF AN EDUCATIONAL PROGRAM FOR PHC PROFESSIONALS

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Brief outline of context: Asthma and COPD are chronic conditions sensitive to primary care. A more effective teaching approach to PHC teams can reduce the risk of hospitalizations, improving patients quality of life

Brief outline of what change you planned to make: An educational intervention was designed to improve the management of Asthma and COPD in multidisciplinary teams. It was planned based on local asthma and COPD referrals, and the absence of adequate number of specialists in respiratory diseases

Assessment of existing situation and analysis of its cause: In the city of São Bernardo do Campo, chronic respiratory diseases are the 2nd cause of hospitalization and 3rd cause of death. Asthma and COPD account for 70% of referrals to the specialist. The great number of referrals was a sign of lower knowledge in these diseases

Strategy for change: who, how, following what timetable: The educational program was developed in three areas encompassing 11 BHU. Thematic management workshops lasting 8 hours, discussion of clinical cases and professional awareness of the importance of Asthma and COPD within the context of Public Health and PHC were made. To assess the professional level of knowledge, questionnaires were applied pre and post educational program. The questionnaires were adapted from GINA and GOLD documents and contained 10 multiple choice questions and a subjective question

Effects of changes: A total of 117 professionals attended the multidisciplinary training. We observed a relatively higher prior knowledge of asthma compared to COPD, which rose slightly after training. (TABLE) The professional's degree of learning in the three territories showed a similar pattern pre intervention for asthma. Territory 9 performed better. For COPD, knowledge was considered bad in two territories (3 and 9) improving to regular post-test. Territory 7 performed slightly better with good standard at post test. The answers to the open question show that professionals felt safer for diagnosis and treatment of asthma and COPD

TERRITORY	Degree of learning by territory			
	EVALUATION			
	PRE TEST ASTHMA	POS TEST ASTHMA	PRE TEST COPD	POS TEST COPD
9	6,16 (Good)	8,0 (Good)	3,65 (Bad)	4,69 (Regular)
7	6,01 (Good)	7,37 (Good)	4,53 (Regular)	6,58 (Good)
3	6,44 (Good)	7,11 (Good)	4,46 (Bad)	6,07 (Regular)

Measurement of improvement: Program evaluation was done by the level of performance before and after training allowing qualitative measurement (bad/regular/good) through self-assessment questionnaire and one subjective question

Lessons learnt: The difficulties in diagnosis and treatment of asthma and COPD can be overcome by investing in educational strategies that, even simple, may be able to produce some degree of change

Message for others: The multidisciplinary education for Asthma and COPD, based on local needs are able to improve diagnosis and treatment and consequently improve problem solving of PHC teams

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Disclosure of Interest: None Declared

PO015-THU

BCG SCAR AND VACCINATION STATUS OF CHILDREN ATTENDING THE OUTPATIENT DEPARTMENT AT A SECONDARY CARE HOSPITAL IN PESHAWAR

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Aim: The aim of this study was to find out the presence or absence BCG scar on the upper right arm of children from Peshawar Pakistan.

Methods: This study was performed in the outpatient department of Cantonment General Hospital Peshawar in 2012, undertaken by a team of General Medical officers and Pediatricians. 1000 patients were involved in this study out of which 529 were males while 471 were female patients. Patients were upto 10 years of age.

All of these patients were accompanied by their mothers as there attendants with most of them being illiterate.

Immunization status was assessed via questionnaire method which comprised details about the child immunization status.

Results: According to the results 81.9% of the children were fully immunized while 18.1% were partially immunized. All the patients were immunized against tuberculosis yet only 22.5% had a BCG scar on their upper right arm.

Conclusion: 22.5% is quite a small fraction which shows that the BCG vaccination did not happen properly in most patients. Reasons for such a poor result may include improper technique by the vaccinator or defect in the vaccine. All the patients without the BCG scar were scheduled for a revaccination. Hence proper training of the vaccinators and maintaining the quality of the vaccine are important measures that must be undertaken to avoid failure of vaccination in future.

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Disclosure of Interest: None Declared

PO016-THU

LEVEL OF KNOWLEDGE AND ATTITUDE OF THE PATIENTS OLDER THAN 65 YEARS ABOUT PNEUMOCOCCAL VACCINE

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Aim: Pneumococcal vaccine is a high protectional vaccine that is especially recommended for patients with chronic obstructive pulmonary disease (COPD) over 65 years. It is important for the prevention of many complications secondary to infection. In this study; it is aimed to determine the level of knowledge and attitude of the patients over 65 years, who had admitted to hospital for any reason, about pneumococcal vaccine.

Methods: Study was performed on December 2013. 33 patients over 65 years, who were admitted to İzmir Tepecik Education and Research Hospital for any reason, were chosen randomly. A questionnaire, related with this aim, was performed. Data were evaluated as percentages.

Results: 15 patients were men (45,6%) and 18 were women (54,4%). 42% were housewife (n:14), 18,4% (n:6) were retired, others were from different professions. Only 1 patient had an university degree and 14,8% (n:5) were illiterate. Number of the patients who heard about pneumonia was 18 (54,6%). Among them; 94% (n:17) described pneumonia correctly. Only 1 patient had pneumonia, hospitalized and treated in the past. All of the patients stated that they don't have lower respiratory tract infection and influenza infection so often. %63,5 (n:21) of the patients has heard about pneumococcal vaccine. Of the 21; 54,5% had heard from their family doctor, 46,5% from social media. Non of the patients have an idea about the protective effects of the vaccine. Only 18,4% (n:6) of the patients had pneumococ vaccine; and only 12,3% of them mentioned about its benefits. The percentage of patients who have correct knowledge about vaccination period was 21,7% (n:7). The percentage of patients who know the side effects of the vaccine was around 33,2% (n:11).

Conclusion: Knowledge level of the patients over 65 years about pneumococ vaccination was quite low and only small part of the patients were vaccinated. Family doctors must play an important role on this subject.

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Disclosure of Interest: None Declared

DIAGNOSIS OF TUBERCULOSIS SUSPECTS AT A DISTRICT TB PUBLIC HEALTH FACILITY UNDER DOTSTaj Muhammad*¹¹Health Department, TB Control Program, Peshawar, Pakistan

Aim: Tuberculosis is a contagious disease, not only in the developing countries due to many aggravating factors, but also in the developed countries due to dual infection of the Tuberculosis and AIDS, that is why it was declared as a Global Emergency in 1993, by the WHO, and as a National Emergency in Pakistan in 2001. Pakistan ranks 6th among the countries with highest disease burden.

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 6th month.

Methods: Patients visiting the health facility were advised for 2 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 specialties with their diagnoses and clinical evidences.

Results: [1st April to 30th June 2013] (2nd Quarter 2013)

	<u>Male</u>	<u>Female</u>	<u>Total</u>
New Smear Positive,	253	278	531
Previously Treated,	40	35	75
Treatment After default,	01	01	02
Sputum Smear Negative,	171	194	365
New Extra Pulmonary,	395	415	810
Others,	00	03	03
Total All Cases,	860	926	1786

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 cases i.e Sputum Smear Positive responsible for the spread of the disease in the society. The quarterly data as TB 08 shows the patients in a district with their sputum conversion and at the end of 2nd, 3rd month and treatment outcome at the end of 12th- 15th month as a TB 09.

TB control Program shares the Work and responsibilities of Health workers, because TB is not a Medical, but a Social Problem, aggravated by poverty, malnutrition, congested living, houses with improper ventilation, poor living style, and illiteracy. Cough for more than 2 weeks, not responding to antibiotic should be given due importance and sputum examination should be stressed. TB is completely curable Diseases with the available drugs and standard regimen and no more a social stigma.

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Disclosure of Interest: None Declared

PO001-FRI

COMMUNITIES COMING TOGETHER: THE PAEDIATRIC ASTHMA PATHWAY

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Brief outline of context: The Respiratory Clinical network was one of eight networks instituted by the Alberta Health Services (AHS) to improve clinical care in the province. The Asthma Working Group of 18 clinicians from all disciplines plus 3 administrative personnel from AHS identified uniform paediatric diagnosis and management as a priority.

Brief outline of what change you planned to make: We planned to involve all the health professionals involved in respiratory care in developing the management pathway, to use evidence-based algorithms to standardise the quality of care for children with asthma and to implement the plans throughout the province.

Assessment of existing situation and analysis of its cause: Less than 10% of children with asthma in Alberta have an action plan or take regular ICS which are standards of care in national guidelines. It is well known that passive guideline distribution is ineffective in achieving buy-in or in changing behaviour. We believed that poor knowledge to practice transfer was the cause of the low standards.

Strategy for change: who, how, following what timetable: We involved all clinical disciplines for a year in developing agreed pathways from evidence-based algorithms and spreading them province wide. The AWG developed three Pathways for use in the Emergency Room (ER), the in-patient wards (IP) and in primary care (PC). In April 2013, after 2 months site preparation, we introduced the ER and IP pathways for 6 months in one hospital region. Data collection is completed and preliminary analysis indicates some successes. Lessons learned have been important in the roll-out of the Pathways in the other 4 zones of the province. All zones will be active by March 2014.

Effects of changes: The effects of introduction of the ER and IP based Pathways have been to increase the use of the objective PRAM score in management of acute asthma and to facilitate standard orders for immediate management before children are seen by the physician. Other effects include the acceleration of team cohesion in care at several sites with agreement on processes and practices.

Measurement of improvement: Hospital outcomes measured include, time to first treatment, time to asthma control, length of stay and parental compliance with follow-up (as a measure of success of education). In the primary care setting, which starts an RCT in spring 2014, we will be measuring the proportion of children with persistent asthma that are on inhaled corticosteroids and have a written action plan.

Lessons learnt: Consensus, even on evidence-based practices, takes time to develop but the time spent is worthwhile when it leads to community buy-in to the plan. Implementation requires local champions who may not be the nominal leader but are in effect the leaders. Busy clinicians need and can work well with administrators and management to implement changes in care that are of importance to them all.

Message for others: Plan for a long process and many face to face as well as virtual meetings for successful implementation of Pathways that affect the whole clinical community.

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Disclosure of Interest: None Declared

PO002-FRI

STUDENTS' KNOWLEDGE AND OPINIONS ABOUT SMOKING IN PRIMARY AND HIGH SCHOOL OF WESTERN GREECE

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Aim: Smoking constitutes one of the more basic factors of morbidity and mortality. The beginning of smoking habit is located mainly in adolescents where is focuses the anti-smoking expedition. The investigation of students' knowledge and behaviours in primary and high school about smoking.

Methods: 254 students of primary school and 91 of high school, 10-15 years old, 48% males and 52% females, in Western Greece. Questionnaire, which recorded demographic elements, smoking habits in the family, and students' knowledge, experiences, and attitudes about smoking.

Results: In 62% of students' families smokes at least one parent and in 13,6% both of them. Cigarette brands are recognized by 72,4% of students and 10% have tried smoking. As main reasons of start smoking they report cunning (51,9%), the imitation of friends (44,3%), curiosity (28,0%), insufficient information (19,2%), publicity (17,2%) and easy access (16,7%). 13,6% believe that smoking constitutes indication of adulthood, 10,4% that gives sense of freedom, 9,8% that is fashion and 8,3% that surprises. Majority (76,4%) knows that it causes cancer, yellow teeth (55,2%) and unpleasant breathing (53,7%). Almost all (95,2%) recognize that smoking harms people around them and that it is drug (92,0%). Finally, 82% believe that can deny the offer of a cigarette.

Conclusion: Smoking is a very frequent occurrence in students' families. Even if most of them are aware for the consequences, the systematic briefing and anti-smoking expedition in the schools is essential in order to be disinclined the start of smoking.

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Disclosure of Interest: None Declared

PO003-FRI

THE BURDEN OF ICS/LABA-TREATED ASTHMA PATIENTS IN THE UK ADULT POPULATION

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Aim: According to NHS QOF (Quality and Outcomes Framework) figures, 3.3 million UK citizens have asthma. Previous studies have shown an association of asthma with increased direct and indirect healthcare costs, but similar studies have not been conducted specifically for UK asthma patients. The aim of the current study is to assess the impact of poor asthma control on UK patients treated with ICS+LABA maintenance treatment.

Methods: Data were from the 2010 and 2011 UK National Health and Wellness Survey (NHWS), an Internet-based questionnaire from a representative sample of UK adults stratified by age and gender. 701 respondents self-reported a diagnosis of asthma without concomitant COPD, chronic bronchitis, or emphysema and were currently being treated with ICS+LABA.

Patients Not Well Controlled (NWC) according to ACT (score < 20) were compared to well-controlled (WC) patients (score ≥ 20) on demographics, medications, health status, BMI, comorbidities, adherence (MMAS-4), healthcare use (number of physician visits, emergency visits and hospitalizations), work productivity and activity impairment (WPAI) and health-related quality of life (HR-QoL) (SF-12).

Results: A greater proportion of the 452 NWC patients (64% of the overall sample) go to emergency (21% vs. 14%, $p=0.016$) or are hospitalized (13% vs. 7%, $p=0.022$), in comparison with the WC; Their mental and physical HR-QoL is lower (SF-12 MCS: 43 vs. 47/100; PCS: 40 vs. 48/100; Health utility: 0.65 vs. 0.74/1.00; all $p<0.001$); while their work and activity impairment are greater: presenteeism (23% vs. 11%, $p<0.001$), overall work impairment (29% vs. 17%, $p<0.001$) and activity impairment (46% vs. 24%, $p<0.001$). In the current sample, NWC did not show significantly different levels of adherence from WC (50% vs. 55%, $p=0.361$).

Conclusion: Over 60% UK ICS+LABA-treated adult patients are poorly controlled. Poor control is associated with lower HR-QoL, greater healthcare use and productivity impairment, but not with significantly different levels of adherence to WC patients. The recognition of patients remaining symptomatic and utilising healthcare resource whilst treated with ICS+LABA maintenance therapy is an important step to improving their management.

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Disclosure of Interest: D. Price Consultant for: Boehringer Ingelheim Ltd UK, N. Mathieson Employee of: Boehringer Ingelheim Ltd UK, A. Mulgirigama Employee of: Boehringer Ingelheim Ltd UK, A. Scowcroft Employee of: Boehringer Ingelheim Ltd UK, R. Pedersini: None Declared, G. Isherwood: None Declared, I. Pavord Consultant for: Boehringer Ingelheim Ltd UK

PO004-FRI

APPLICATION OF THE NEW GOLD COMBINED ASSESSMENT TOOL IN A BANGLADESH COPD COHORT

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Aim: Chronic Obstructive Pulmonary Disease (COPD) is the common respiratory disease in Bangladesh with a huge toll at personal, familial and national level. Good COPD care needs empowerment of primary care service with best possible diagnostic, assessment tool and appropriate available treatment. Individualization of management protocol is the key element of success in COPD care. GOLD developed combined assessment tool for the same. Aim: To examine how it will help in the primary care service.

Methods: Method: we recruited 214 COPD patients from a primary care respiratory center with careful recording of FEV₁, mMRC, CAT score and exacerbation in last 12 months. As per GOLD we categorized the patients into A, B, C & D

Results: Result: On combined assessment we found: Category A: 4 (1.87%); B: 28 (13.08%); C: 10 (4.67%); D: 172 (80.37%). Total of 77 patients have exacerbation in last 12 months, which is the strong predictor for future risk, whereas 35 patients in group D is categorized by FEV, which is a weak predictor.

Conclusion: In real practice this finding do not co-relate well with patients status and need to re-evaluate the combined reassessment procedure to implement the same in primary care practice of a developing country like Bangladesh.

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Disclosure of Interest: None Declared

PO005-FRI

QVA149 PROVIDES GREATER IMPROVEMENT IN PATIENT REPORTED SYMPTOM SCORES COMPARED TO GLYCOPYRRONIUM AND TIOTROPIUM IN PATIENTS WITH SEVERE TO VERY SEVERE COPD: THE SPARK STUDY

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Aim: Daily symptoms in patients with COPD are associated with poorer health status and increased risk of exacerbation.¹ The dual bronchodilator QVA149, a fixed dose combination of a long acting β_2 -agonist, indacaterol, and a long acting muscarinic antagonist, glycopyrronium has been shown to be beneficial in reducing the risk of moderate-to-severe exacerbations in patients with severe-to-very severe COPD.² Here, we analyze the effect of QVA149 on patient reported symptom scores as this may contribute to the explanation of exacerbation reduction with QVA149 in the SPARK study.

Methods: SPARK was a multicenter, double-blind, parallel-group, active-controlled, 64-week study with a variable double-blind extension phase of up to 12 weeks. The study randomized patients to QVA149 110/50 μ g or glycopyrronium 50 μ g, via the Breezhaler[®] device; and to open label tiotropium 18 μ g via the HandiHaler[®] device. Patients recorded twice daily symptom scores (respiratory symptoms, cough, wheezing, breathless feeling, sputum production, sputum color, sore throat, colds, and fever) on electronic diaries for 76 weeks. Mean daily individual symptom scores ranged from 0 to 3 (0=better and 3=worse symptoms). The mean score of all the symptoms for a period of 4 weeks was calculated and summarized as mean daily total symptom score.

Results: Of the 2224 patients randomized, 96.3% had assessable diary data and were analyzed. Out of 741 patients in the QVA149 group, 95.5% and 95.6% patients were included in the full analysis set of daily total symptom scores and daily breathless scores, respectively. For glycopyrronium (n=741) and tiotropium (n=742), 97.7% and 95.5% patients, respectively, were included in both daily total symptom scores and daily breathless scores analysis set. QVA149 significantly decreased the mean breathless scores (Glycopyrronium - LS mean [LSM] treatment difference [Δ] \pm SE: -0.09 \pm 0.02; 95% CI: -0.14, -0.04; p=0.0001; Tiotropium - LSM Δ \pm SE: -0.13 \pm 0.02; 95% CI: -0.18, -0.08; p<0.0001) and mean daily symptom scores compared with glycopyrronium (LSM Δ \pm SE: -0.37 \pm 0.09; 95% CI: -0.55, -0.19; p<0.001) and tiotropium (LSM Δ \pm SE: -0.44 \pm 0.09; 95% CI: -0.62, -0.26; p<0.001) over the 64-week treatment period. QVA149 was generally well tolerated, with a frequency of adverse events similar to glycopyrronium and tiotropium.

Conclusion: Patient self-assessments reveal a greater improvement in symptom scores in the QVA149 group compared with glycopyrronium and tiotropium groups which may explain the greater reduction in exacerbations by QVA149 in this study.

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PO006-FRI

IN PATIENTS WITH MORE SEVERE DYSPNEA, DUAL BRONCHODILATION WITH ONCE-DAILY QVA149 IMPROVES DYSPNEA, HEALTH STATUS, AND LUNG FUNCTION COMPARED WITH OPEN-LABEL TIOTROPIUM AND SALMETEROL/FLUTICASONE COMBINATION: THE IGNITE TRIALS

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Aim: The purpose of this analysis is to examine the efficacy of QVA149 110/50µg (a novel once-daily dual bronchodilator containing the long acting β_2 -agonist, indacaterol and long acting muscarinic antagonist, glycopyrronium) in improving dyspnea (Transition Dyspnea Index [TDI]), health status, and lung function at Week 26 in patients with severe baseline dyspnea (Group-B in GOLD) compared with open-label (OL) tiotropium or salmeterol/fluticasone combination 50/500µg (SFC).

Methods: The SHINE (N=2144) and ILLUMINATE (N=523) studies randomized patients with moderate-to-severe COPD to placebo, indacaterol, glycopyrronium, OL tiotropium or QVA149 (SHINE); SFC or QVA149 (ILLUMINATE) for 26 weeks. In this analysis, symptomatic patients having a baseline dyspnea index (BDI) <8 were selected="selected" to represent a sub-group of patients with moderate to very severe functional impairment and very severe dyspnea. TDI, health status (St George's Respiratory Questionnaire [SGRQ]), and lung function (trough and pre-dose forced expiratory volume in 1 second [FEV₁]), at 26 weeks were evaluated.

Results: The mean BDI in each treatment arm was comparable in both SHINE (indacaterol: 5.5, glycopyrronium: 5.4, OL tiotropium: 5.6, QVA149: 5.4) and ILLUMINATE (QVA149: 5.8, SFC: 5.9) studies. Improvements in TDI and SGRQ total score, and trough and pre-dose FEV₁ were greater for QVA149 versus OL tiotropium or SFC at Week 26 (Table). Compared with SFC, the improvement in TDI exceeded the minimal clinically important difference of 1.

Table: Treatment differences in TDI, SGRQ and FEV₁ in symptomatic patients with BDI <8 at Week 26

Parameter	SHINE		ILLUMINATE
	QVA149 vs. placebo	QVA149 vs. OL tiotropium	QVA149 vs. SFC
TDI total score*	1.0 ^a	0.6 ^a	1.0 ^a
SGRQ total score	-2.9 ^a	-2.0 ^a	-1.4
FEV ₁ *, (mL)	200 ^{a#}	70 ^{a#}	100 ^{a†}
Values are LSM data. *TDI and FEV ₁ improvements are minimally clinically important differences; #Trough and †pre-dose FEV ₁ values were reported for SHINE and ILLUMINATE, respectively; ^a p<0.05. BDI, baseline dyspnea index; FEV ₁ , forced expiratory volume in 1 second; LSM, least square mean; OL, open-label; SFC, salmeterol/fluticasone combination; SGRQ, St George's respiratory questionnaire; TDI, transition dyspnea index.			

Conclusion: In a subgroup of symptomatic patients (with a BDI <8) from SHINE and ILLUMINATE population, dual bronchodilation with QVA149 110/50µg provided greater improvements in dyspnea, health status, and lung function in COPD patients with severe dyspnea (Group-B in GOLD) compared with OL tiotropium 18µg or SFC 50/500µg.

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EFFICACY AND SAFETY OF QVA149 VERSUS GLYCOPYRRONIUM AND TIOTROPIUM IN A SUBGROUP OF PATIENTS WITH SEVERE COPD: THE SPARK STUDY

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Aim: QVA149 is a once-daily dual bronchodilator with a fixed-dose combination of LABA indacaterol and the LAMA glycopyrronium (GLY) for the maintenance treatment of patients with COPD. We evaluated the effect of QVA149 versus GLY and tiotropium (TIO) on lung function, health status and safety in the subgroup of patients with severe COPD from the SPARK study.

Methods: SPARK was a 64-week, multicenter, randomized, double-blind, parallel-group, active-controlled study. Patients aged ≥ 40 years with severe-to-very severe stable COPD and ≥ 1 COPD exacerbation in the past year were randomized (1:1:1) to once-daily double-blind QVA149 110/50 μg , GLY 50 μg (both via Breezhaler[®] device), or open-label TIO 18 μg (via HandiHaler[®] device). Efficacy parameters assessed include pre-dose FEV₁ (defined as average of the -45 minutes and -15 minutes values taken prior to each dose during treatment) and health status (assessed via SGRQ). Safety data (adverse events [AEs] and serious AEs) was also recorded.

Results: Of the 2224 randomized patients, 1742 had severe COPD (GOLD 2008) (QVA149=578; GLY=583; TIO=581). In patients with severe COPD, pre-dose FEV₁ was significantly higher with QVA149 at all assessments compared with GLY and TIO ($p < 0.0001$ for both; Table 1). At Week 64, SGRQ total score was significantly lower in the QVA149 group than in the GLY (treatment difference [Δ]: -2.56; $p = 0.002$) or TIO (Δ : -3.38; $p < 0.001$) groups. The incidence of AEs were similar across all groups (QVA149=92.9%; GLY=93.0%; TIO=94.1%) with most being mild to moderate in severity. Number of SAEs per 100 patient years in QVA149, GLY and TIO groups was 38.1%, 40.2%, and 28.4%, respectively. Cardiac SAEs (QVA149=2.9%; GLY=2.9%; TIO=2.1%) occurred with similar frequency across treatment groups. Number of deaths were similar in each treatment group (QVA149=12; GLY=14; TIO=15).

Table 1: Least squares mean (SE) treatment differences (mL) in pre-dose FEV₁ over 64 weeks

Time point	Treatment difference (SE) of QVA149 versus comparators in mL	
	GLY	TIO
Week 12	80 (12)	80 (12)
Week 26	90 (13)	80 (12)
Week 38	80 (13)	90 (13)
Week 52	80 (14)	80 (14)
Week 64	80 (14)	70 (14)
All $p < 0.0001$		

Conclusion: In patients with severe COPD (GOLD 2008), QVA149 treatment resulted in significant improvements in lung function and health status (SGRQ) compared with glycopyrronium and tiotropium with a safety profile similar to that of both glycopyrronium and tiotropium.

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AstraZeneca, ONO Pharmaceutical, Merck Canada, Forest Laboratories, Novartis, Boehringer Ingelheim Ltd, Pfizer Canada, SkyePharma, and KOS Pharmaceuticals; , A. FowlerTaylor Employee of: Novartis Pharmaceuticals Corporation; , D. Banerji Employee of: Novartis Pharmaceuticals Corporation; , H. Chen Employee of: Novartis Pharmaceuticals Corporation; , R. Fogel Employee of: Novartis Pharmaceuticals Corporation

ONCE-DAILY QVA149 IS MORE EFFECTIVE THAN TWICE-DAILY SALMETEROL-FLUTICASONE IN IMPROVING LUNG FUNCTION, IN PATIENTS WITH SEVERE COPD: THE ILLUMINATE STUDY

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Aim: QVA149 is a once-daily inhaled dual bronchodilator with a fixed-dose combination of long-acting β_2 -agonist (indacaterol) and long-acting muscarinic antagonist (glycopyrronium) for the treatment of chronic obstructive pulmonary disease (COPD). Here, we report comparison results (lung function, dyspnea and health status) of QVA149 and the salmeterol-fluticasone combination (SFC) in a subgroup of patients with severe COPD from the ILLUMINATE study.

Methods: ILLUMINATE was a 26-week, multicenter, double-blind, double-dummy, parallel-group study. Patients aged ≥ 40 years with moderate-to-severe COPD (post-bronchodilator $FEV_1/FVC < 0.7$ and $FEV_1 \geq 40\%$ to $< 80\%$ predicted) with no history of exacerbations in the previous year and a smoking history ≥ 10 pack-years were randomized (1:1) to QVA149 110/50 μg once daily (via the Breezhaler[®] device) or SFC 50/500 μg twice daily (via the Accuhaler[®] device). Lung function assessments included FEV_1 area under the curve for 0-12h ($FEV_1 AUC_{0-12h}$) and pre-dose trough FEV_1 . Dyspnea and health status were assessed using the baseline and transition dyspnea index (BDI and TDI) and St George's Respiratory Questionnaire for COPD (SGRQ-C), respectively.

Results: Of the 523 patients randomized, 103 patients were categorized as having severe COPD [QVA149 (n=51), SFC (n=52)]. In these patients, $FEV_1 AUC_{0-12h}$ was significantly higher for QVA149 compared with SFC (treatment difference 0.10 L; 95% CI 0.02-0.18; $p < 0.05$) at Week 26. Pre-dose FEV_1 was significantly higher with QVA149 compared with SFC (treatment difference 0.11 L; 95% CI 0.03-0.19; $p < 0.01$). At Week 26, improvements in TDI score and SGRQ-C total score with QVA149 were not significantly different to SFC (Table).

Table: QVA149 versus SFC on lung function, dyspnea and health status

Parameter s	QVA149		SFC		Treatment difference (Week 26) QVA149 versus SFC
	Baseline	Week 26	Baseline	Week 26	
Pre-dose FEV_1 (L)	1.0 (0.0 4)	1.6 (0.0 4)	1.1 (0.0 7)	1.5 (0.0 4)	0.1 (0.04)**
$FEV_1 AUC_{0-12h}$ (L)	1.0 (0.0 4)	1.7 (0.0 4)	1.1 (0.0 7)	1.6 (0.0 4)	0.1 (0.04)*
BDI/TDI total score	6.2 (0.3 3)	1.4 (0.5 6)	5.9 (0.1 6)	1.4 (0.5 7)	-0.05 (0.57) ^{ns}
SGRQ-C total score	46.0 (2.2 3)	40.6 (2.0 7)	47.4 (2.0 9)	39.1 (2.1 0)	1.6 (2.25) ^{ns}
Patients with severe COPD ($FEV_1/FVC < 0.7$ and $FEV_1 \geq 40\%$ to $< 50\%$) were included in the analysis. ** $p < 0.01$, * $p < 0.05$ for comparisons between QVA149 and SFC; ns, not significant; Data presented as mean (SE)					

Conclusion: In patients with severe COPD without the history of COPD exacerbations, once-daily QVA149 was more effective than twice-daily SFC in providing significant improvement in lung function but improvements in dyspnea and health status were similar.

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PO009-FRI

ONCE-DAILY QVA149 IMPROVES LUNG FUNCTION AND HEALTH STATUS IN COPD TREATMENT NAÏVE PATIENTS: A POOLED ANALYSIS OF ARISE, ENLIGHTEN, SHINE AND SPARK STUDIES

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Aim: QVA149 (a fixed dose dual bronchodilator combining the long-acting β_2 -agonist [LABA] indacaterol [IND] 110 μ g and the long-acting muscarinic antagonist [LAMA] glycopyrronium [GLY] 50 μ g) has shown superior improvements on lung function and health status compared with placebo (PBO) and tiotropium (TIO). Here we analyze the effect of QVA149 compared with PBO and open-label TIO in treatment-naïve patients who self-reported to have not received any prior medication for chronic obstructive pulmonary disease (COPD).

Methods: Data was pooled from 4 randomized, parallel-group, multicenter QVA149 studies, namely ARISE, ENLIGHTEN, SHINE and SPARK. ARISE (active-controlled, open-label) and ENLIGHTEN (PBO-controlled, double blind) were 52-week studies, while SHINE (PBO- and active-controlled, double-blind, open-label TIO) was a 26-week study that assessed efficacy and safety of QVA149 in patients with moderate-to-severe COPD. SPARK (active control, double-blind, open-label TIO) was a 64-week study that evaluated efficacy and safety of QVA149 in patients with severe-to-very severe COPD and ≥ 1 COPD exacerbation in the past year. Efficacy parameters assessed included pre-dose FEV₁ (average of FEV₁ values taken 15 and 45 min prior to each dose throughout the treatment period) and post-dose FEV₁ (30 min and 1h throughout the treatment period). Health status (SGRQ scores) was analyzed from ARISE, SHINE and SPARK studies.

Results: Overall, 886 treatment naïve patients receiving QVA149 (n=276), IND (n=103), GLY (n=221), TIO (n=197), and PBO (n=89) were included in this pooled analysis. In these patients, QVA149 provided significant improvements in pre-dose FEV₁ and post dose FEV₁ compared with PBO and open-label TIO at 3 and 6 months (Table). QVA149 (n=225) provided significant improvement in SGRQ total score at 3 months compared with TIO. The SGRQ improvement with QVA149 was numerically greater compared with PBO at 3 and 6 months and TIO at 6 months.

Table1. Effect of QVA149 on lung function and health status

			QVA149 vs PBO	QVA149 vs TIO
Predose FEV ₁ , litres	Month 3		0.19 \pm 0.025**	0.09 \pm 0.018**
	Month 6		0.19 \pm 0.028**	0.07 \pm 0.020**
Postdose FEV ₁ , litres	Day 1	30 min	0.17 \pm 0.015**	0.06 \pm 0.012**
		1 hour	0.21 \pm 0.016**	0.06 \pm 0.012**
	Month 3	30 min	0.26 \pm 0.027**	0.13 \pm 0.020**
		1 hour	0.31 \pm 0.028**	0.14 \pm 0.020**
	Month 6	30 min	0.31 \pm 0.029**	0.14 \pm 0.021**
		1 hour	0.34 \pm 0.029**	0.13 \pm 0.021**

SGR Q total scores	Month 3		-2.75 ± 1.994 ^{ns}	-2.95 ± 1.239*
	Month 6		-2.59 ± 2.085 ^{ns}	-1.87 ± 1.284 ^{ns}
Data is Least square mean±SE; *p<0.05; **p<0.001; ns=not significant; FEV ₁ =forced expiratory volume in 1 second				

Conclusion: In COPD treatment-naïve patients, the results from the pooled analysis showed QVA149 provided significant improvements in lung function compared with both placebo and tiotropium and in health status compared with tiotropium at month 3.

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QVA149 IMPROVES LUNG FUNCTION IN PATIENTS WITH A HISTORY OF EXACERBATIONS AND BASELINE ICS USE: A SUBGROUP ANALYSIS FROM SHINE STUDY

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Aim: COPD exacerbations are linked to a rapid decline in lung function and increased mortality. QVA149 is a once-daily dual bronchodilator with a fixed-dose combination of long-acting β_2 -agonist (indacaterol) and long-acting muscarinic antagonist (glycopyrronium), for the treatment of COPD. We report the findings in a subgroup of patients from the SHINE study that had a history of at least one exacerbation in the previous year and used inhaled corticosteroid (ICS) at baseline.

Methods: SHINE was a multicenter, double-blind, parallel-group, randomized placebo and active-controlled study. Patients with moderate-to-severe COPD and ≥ 10 pack-years of smoking history were randomized (2:2:2:2:1) to receive QVA149 110/50 μg , indacaterol 150 μg , glycopyrronium 50 μg (all administered via Breezhaler[®] device), open-label tiotropium 18 μg (administered via HandiHaler[®] device) or placebo (administered via Breezhaler[®] device) for 26 weeks. This post-hoc analysis evaluated the effect of QVA149 on trough forced expiratory volume in 1 second (FEV₁) and forced vital capacity (FVC) in comparison with indacaterol, glycopyrronium, tiotropium and placebo using a linear mixed model in patients with a history of at least one exacerbation and ICS use at baseline.

Results: In total, 2135 patients were included in the full analysis set, 542 patients had a history of exacerbations and used ICS at baseline, of which 465 were included in this subgroup analysis (QVA149=110, indacaterol=105, glycopyrronium=111, tiotropium=102 and placebo=37). At Week 26, QVA149 significantly improved trough FEV₁ compared with indacaterol, glycopyrronium, tiotropium, and placebo (Least squares mean treatment differences [LSM td] ranging from 0.08 to 0.23 L; $p < 0.01$). Trough FVC at Week 26 was significantly improved with QVA149 compared with indacaterol, tiotropium, and placebo (LSM td ranging from 0.12 to 0.28 L; $p < 0.01$) and was numerically higher than glycopyrronium (LSM td 0.06 L; $p = 0.1969$; Table).

Table: Lung function parameters at Week 26 in patients with history of at least one exacerbation and baseline ICS use

	QVA149 vs comparators, LSM (SE)			
	Indacaterol	Glycopyrronium	Tiotropium	Placebo
Trough FEV ₁ , L	0.08 (0.026)**	0.11 (0.026)***	0.11 (0.026)***	0.23 (0.036)***
Trough FVC, L	0.12 (0.047)*	0.06 (0.046)	0.15 (0.047)**	0.28 (0.065)***

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.0001$; LSM, least squares mean; SE, standard error

Conclusion: In patients with a history of at least one exacerbation and baseline ICS use, QVA149 showed significantly greater improvement in lung function compared with indacaterol, glycopyrronium, tiotropium or placebo.

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PO011-FRI

PREVENTING AND LESSENING EXACERBATIONS OF ASTHMA IN SCHOOL AGE CHILDREN ASSOCIATED WITH A NEW TERM (PLEASANT): RECRUITING PRIMARY CARE RESEARCH SITES – THE PLEASANT EXPERIENCE

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Aim: To describe the PLEASANT trial and present results on factors which influence recruitment of primary care centres into a trial.

Background: In the UK there is a pronounced increase in the number of unscheduled visits to the doctor, by school aged children with asthma when they return back to school in September after the summer holidays. This increase is preceded by a drop in the number of prescriptions administered in August. PLEASANT is a trial to investigate whether a simple postal intervention can help to reduce this peak.

PLEASANT successfully recruited to its target sample size of 140 GP practices with the intervention sent in July 2013. Results for the intervention are being awaited. Here the concentration will be on what influence GP practices to participate in PLEASANT.

Design; Cluster Randomised Control Trial, 140 GP sites across England and Wales.

Population: school aged children (4-16) with diagnosis of asthma in receipt of asthma medication in the last 12 months.

Interventions: A letter from the child's GP, at start of summer school holidays, encouraging medication adherence over the summer. The comparator is usual care (no letter).

Outcomes; the primary outcome is reduction in unscheduled medical contacts in September following return to school. Secondary outcomes included unscheduled medical contacts in the period September to December and unscheduled contacts associated with a respiratory diagnosis.

Recruitment of sites started in Jan 2013 with 142 practices successfully randomised to time and target. The intervention was delivered, per protocol, in July 2013. Full results after 12 months follow up will be available in 2015.

Methods: Outcome data is to be collected through the Clinical Practice Research Datalink (CPRD). All 433 practices with CPRD at the start of the study were invited to take part in PLEASANT. Data were collected on practice size and previous research experience for all CPRD practices and an investigation made to examine factors which influenced whether a practice would agree to participate in PLEASANT.

Statistical analyses of participation included logistic regression, Kaplan-Meier survival plots and Cox regression

Results: Whether a practice had been in a previous randomised controlled trials (RCT (HR = 1.806 [C.I. 95%, 1.546 to 2.109] P < 0.001), and the number of trials a practice had engaged in (OR 2.511 [C.I. 95%, 1.713 to 3.783] P < 0.001), significantly influenced whether a practice would participate in PLEASANT. Practice size was not a significant deciding factor on whether a practice would participate (OR = 1.035 [95% C.I. 0.989 - 1.082] P = < 0.137).

Conclusion: From the experience of PLEASANT general practices with more research experience are more likely to agree to participate in a study.

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PO012-FRI

GLYCOPYRRONIUM ONCE DAILY VIA BREEZHALER® DEVICE IS SAFE AND WELL TOLERATED IN PATIENTS WITH MODERATE-TO-SEVERE COPD

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Aim: Glycopyrronium (GLY) 50µg via Breezhaler® device is a once daily (o.d.), inhaled long-acting muscarinic antagonist with a rapid onset of bronchodilation indicated for maintenance therapy in patients with COPD. This analysis was conducted to determine the safety profile of GLY 50µg o.d. via Breezhaler® device across phase II and III clinical studies in patients with moderate-to-severe COPD.

Methods: The current GLY major safety database is comprised of pooled safety populations from two pivotal phase III studies assessing the efficacy and safety of GLY 50µg o.d. via Breezhaler® device versus placebo (PBO; GLOW1 and 2) and open-label tiotropium (TIO) 18µg o.d. via HandiHaler® device (GLOW2) over 26 to 52 weeks, and a phase III study on exercise tolerance (GLOW3). Three additional phase II studies (A2205, A2207 and A2208) with GLY 50µg o.d. and placebo only groups in patients with moderate-to-severe COPD were also included. Of note, tiotropium was only dosed in one of the six studies, so that the TIO results reflect a different population than the broader pooled results. Here we present the results of the safety profile of GLY in terms of adverse events (AEs), serious AEs (SAEs), cerebro-cardiovascular (CCVs) events, clinical laboratory results, vital signs, ECGs and deaths. All atrial fibrillation cases and deaths were adjudicated by independent committee.

Results: The safety database includes 2436 patients (GLY=1353, TIO=267, PBO=816) of which 2279 patients were randomized. 70.7% were male; mean age: 63.3 years; 80.7% completed the study. The overall incidence of AEs in the GLY (58.2%) and PBO groups (54.4%) was lower than the TIO group (74.2%) with COPD worsening being the most frequent AE across all groups. Discontinuations due to AEs were lower in the GLY group (5.9%) compared to the PBO (7.1%) and TIO groups (7.5%). Potential anticholinergic AEs such as dry mouth and urinary tract infections occurred in <2% of patients, except for a 6.0% rate of urinary tract infections in TIO patients. SAEs were reported with a similar frequency in the GLY (8.2%) and the PBO groups (8.6%), while being higher in the TIO group (15.0%). The frequency of major adverse cardiovascular events (MACE) events was similar in GLY (0.4%) and PBO (0.3%) groups, and 1.1% in TIO group. There were no clinically meaningful changes in hematology or clinical laboratory results, vital signs or ECGs across all the treatment groups. A total of 14 deaths were reported [GLY 7 (0.52%); PBO 5 (0.61%) and TIO 2 (0.75%)]. None of these deaths were considered by investigator to be related to study medication.

Conclusion: In patients with moderate-to-severe COPD, glycopyrronium once daily is well tolerated. The incidence of serious adverse events (including MACE events) were similar between treatment groups. Overall, the observed safety profile of glycopyrronium is similar to placebo and tiotropium.

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RAPID BRONCHODILATION WITH ONCE-DAILY GLYCOPYRRONIUM VIA THE BREEZHALER® DEVICE: THE IMPORTANCE OF OPTIMIZING LUNG FUNCTION IN THE MORNING

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Aim: Glycopyrronium is a once-daily (o.d.), inhaled long-acting muscarinic antagonist with a rapid onset and sustained bronchodilation, indicated for maintenance treatment to relieve symptoms in patients with COPD. The morning hours are commonly the most troublesome for many patients with COPD¹. Using a drug with rapid onset of bronchodilation in the morning, could provide better relief for these patients.

Methods: Data from two GLYcopyrronium bromide in COPD airWays (GLOW1 and GLOW2) clinical studies was pooled and analyzed to assess the efficacy of glycopyrronium (GLY) 50µg o.d. vs placebo (PBO; GLOW1 and GLOW2, delivered via Breezhaler® device) and open-label tiotropium (TIO) 18µg o.d. (GLOW2, delivered via HandiHaler® device) in the morning between 8:00 – 11:00 h, over 26 (GLOW1) to 52 (GLOW2) weeks. Here we present the results of FEV₁ at 5min and 30min post-dose and early post-dose bronchodilation measured by FEV₁ area under curve from 0 to 4h (AUC_{0-4h}) at Day 1 and Weeks 12, 26 and 52.

Results: In the pooled analysis, 1888 subjects were randomized (GLOW1=822; GLOW2=1066), 98.2% analyzed (GLY=1059, TIO=267, PBO=528). GLY significantly increased FEV₁ versus and versus TIO on Day 1 and at Week 26 after 5min and 30min post-dose, respectively. Comparable results were found at Weeks 12, 26 and 52 (Table). The FEV₁ AUC_{0-4h} for GLY was significantly greater than PBO at all timepoints and versus TIO on Day 1, and at Weeks 12 and 26 and numerically better at Week 52 (Table).

Table: LSM (SE) treatment differences in FEV₁ at 5 min and 30 min and FEV₁ AUC_{0-4h}

	GLY-PBO			GLY-TIO			TIO-PBO		
	FEV ₁ at 5min	FEV ₁ at 30min	AUC _{0-4h}	FEV ₁ at 5min	FEV ₁ at 30min	AUC _{0-4h}	FEV ₁ at 5min	FEV ₁ at 30min	AUC _{0-4h}
Day 1	90 (5.9)***	171 (8.3)***	194 (6.8)***	43 (8)***	58 (11.3)***	55 (9.4)***	47 (8.7)***	113 (12.3)***	139 (10.1)***
Week 12	148 (11.9)***	164 (12.1)***	183 (11.6)***	23 (15.9)	30 (16.3)	32 (15.6)*	124 (17.5)***	134 (17.9)***	151 (17.1)***
Week 26	149 (12.8)***	176 (13.2)***	190 (12.6)***	52 (17.4)**	63 (18)***	55 (17.2)***	97 (18.9)***	112 (19.5)***	134 (18.7)***
Week 52 (GLOW 2)	131 (20.3)***	152 (21.1)***	165 (19.8)***	16 (19.9)	20 (20.6)	15 (19.4)	115 (23.4)***	132 (24.2)***	151 (22.7)***

LSM, least squares mean; SE, standard error; ***p<0.001; **p<0.01; *p<0.05

Conclusion: Once-daily glycopyrronium 50ug via Breezhaler® device, when given in the morning, provided significantly rapid onset of bronchodilation compared with placebo and tiotropium, after first dose (Day 1). Glycopyrronium also showed statistically significant improvement in early post-dose bronchodilation measured by FEV₁ AUC_{0-4h} compared with placebo and tiotropium, at all measured timepoints up to week 26 and was numerically better than TIO at Week 52. The rapid onset and early post-dose bronchodilation may be clinically important for patients who struggle with COPD symptoms in the morning.

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PO014-FRI

A UK BASED COST-EFFECTIVENESS ANALYSIS OF GLYCOPYRRONIUM: AN ANTI-MUSCARINIC AGENT FOR THE MAINTENANCE TREATMENT OF PATIENTS WITH COPD

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Aim: Patients with COPD experience periods of stable disease and episodes of acute worsening of dyspnea, cough and sputum production (exacerbations). Exacerbations can be severe enough to cause hospitalization and death, having a detrimental impact on quality of life and add to the economic burden of the disease. Glycopyrronium is a long-acting muscarinic antagonist (LAMA) which demonstrated superior bronchodilation and reduction in exacerbations versus placebo, and was similar in comparison to tiotropium in various clinical trials^{1,2}. The aim of this analysis was to assess the cost-effectiveness of glycopyrronium versus tiotropium for patients with moderate-to-severe COPD from the UK payer perspective.

Methods: A Markov model was developed with four health states following the GOLD classification of severity of airflow limitation. From each state, patients could experience a severe or non-severe exacerbation, move to a different COPD state, remain in the current state or die. Transition probabilities were based on data from two glycopyrronium clinical trials. In this model, the cost of glycopyrronium pack price was taken as £27.50. Real life resource use data was taken from the Optimum Patient Care Research Database. The outcome measure for the analysis was cost per total exacerbation avoided. In the base case a three-year time horizon was used. Extensive sensitivity analyses (SA) were undertaken.

Results: In this model-based analysis, glycopyrronium dominated tiotropium with an estimated incremental cost of -£179.66 and fewer exacerbations. The one-way SA showed that the exacerbations benefit was influential, with results changing from a position of dominance for glycopyrronium to being dominated (produced lower benefits at higher costs) when the exacerbation benefit was removed. Considering a cost-minimization approach that assumed similar outcomes with both the treatments, glycopyrronium was found to be cost-saving compared with tiotropium.

Conclusion: The analyses demonstrate that glycopyrronium dominated tiotropium in the base-case and is cost-effective as long as the risk of exacerbations is considered to be similarly reduced with glycopyrronium treatment.

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PO015-FRI

KEY INHALER DEVICE ATTRIBUTES IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) MANAGEMENT: INSIGHTS FROM PATIENTS AND PRACTITIONERS

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Aim: In the management of COPD, consideration of a suitable device for chronic self-administration of medication by patients is important. A range of inhaler devices are available, including metered dose inhalers (MDIs), dry powder inhalers (DPIs), nebulizers, and soft mist inhalers (SMIs), each with its own advantages and disadvantages. Physicians may consider various attributes when selecting appropriate inhaler devices for the patient's COPD maintenance therapy. We thus conducted an online quantitative survey to further understand what healthcare practitioners (HCPs, i.e., Physicians and Nurses) and patients consider to be the key attributes of an ideal inhaler device in COPD management.

Methods: Patients diagnosed with COPD for ≥ 6 months from the United States (US), United Kingdom (UK), France and Germany, and HCPs from the US, UK, France, Italy and Japan, were enrolled to participate in an online quantitative 35-minutes survey conducted from 31st March to 30th April 2010 (patients) and from 5th January to 29th April 2010 (HCPs). Adaptive choice-based conjoint and choice-based conjoint products from Sawtooth Software were used to collect, randomise and analyse participant opinions and preferences of various device attributes, including functionality.

Results: A total of 245 COPD patients, mean age 60.7 years, completed the survey. Of these, 124 and 121 patients were taking fluticasone/salmeterol (via Diskus[®] DPI or Advair[®] MDI), and tiotropium (via Respimat[®] SMI or HandiHaler[®] DPI), respectively. Patients cited ease of use, dose recording, and multi-dose capacity as important attributes for the device. Key factors that patients considered would make the device easier to use were fewer steps to operate the inhaler, confirmation that the dose has been taken correctly, easier coordination of breathing manoeuvre, and least resistance while inhaling. A total of 504 HCPs (380 physicians and 124 nurses) completed the survey, and cited patient satisfaction and ease of use as the most important attributes when selecting an inhaler device for patients. HCPs also considered an ideal device to be one that provides feedback to the patient on complete delivery of the dose.

Conclusion: The survey provides important insights into what patients and HCPs consider to be key attributes of an ideal inhaler device for COPD management. Given that patients with COPD self-administer their COPD chronic medication and the need to deliver the correct dose, it is important to consider these insights for the appropriate management of COPD.

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PO016-FRI

QVA149 ONCE DAILY IMPROVES LUNG FUNCTION AS COMPARED WITH INDACATEROL, GLYCOPYRRONIUM, TIOTROPIUM AND PLACEBO IN A SERIAL SPIROMETRY SUBGROUP: RESULTS FROM THE SHINE STUDY

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Aim: QVA149 is a novel, inhaled, once-daily, fixed-dose combination of the long-acting β_2 -agonist (LABA) indacaterol and the long-acting muscarinic antagonist (LAMA) glycopyrronium for the maintenance treatment of COPD. Here, we present the results from a post-hoc analysis on the improvement in lung function (trough forced expiratory volume in 1 second [FEV₁] and FEV₁ area under the curve from 0 to 4 hours [FEV₁ AUC_{0-4 h}]), at Week 26 in a serial spirometry subgroup of the SHINE study.

Methods: In this 26-week, multicentre, double-blind, parallel-group, placebo- and active-controlled (open-label tiotropium) study, patients aged ≥ 40 years with moderate-to-severe COPD (post-bronchodilator FEV₁/forced vital capacity (FVC) < 0.7 and FEV₁ $\geq 30\%$ to $< 80\%$ predicted) and smoking history ≥ 10 pack-years were randomised to receive once-daily QVA149 (110/50 μg), indacaterol (150 μg), glycopyrronium (50 μg), tiotropium (18 μg) or placebo (2:2:2:2:1).

Results: In a subset of 294 patients (QVA149, n = 66; indacaterol, n = 64; glycopyrronium, n = 63; tiotropium, n = 70; and placebo, n = 31), serial spirometry permitted detailed analysis of bronchodilator response. QVA149 demonstrated a statistically significant improvement in trough FEV₁ at Week 26 and FEV₁AUC_{0-4h} as compared to placebo (Table). Amongst active treatments, trough FEV₁ was significantly better with QVA149 compared to indacaterol (116 mL; p<0.01) and glycopyrronium (86 mL; p<0.05) and numerically superior to tiotropium (66 mL). FEV₁ AUC_{0-4 h} was significantly better following QVA149 as compared to indacaterol (153 mL; p<0.0001), glycopyrronium (144 mL; p<0.0001) and tiotropium (152 mL; p<0.0001) (Table).

Table. Least square mean differences in various lung function parameters between the treatment groups

Parameters	QVA149-Placebo	QVA149-Indacaterol	QVA149-Glycopyrronium	QVA149-Tiotropium
Trough FEV ₁ , mL	263***	116**	86*	66
FEV ₁ AUC _{0-4h} , mL	380***	153***	144***	152***
***p<0.0001, **p<0.01, *p<0.05				

Conclusion: In the serial spirometry subgroup of the SHINE study, QVA149 once-daily showed significant and clinically meaningful improvements in lung function as compared to indacaterol, glycopyrronium and placebo over 26 weeks in patients with moderate-to-severe COPD.

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FAMILY PHYSICIAN ASSISTANTS' KNOWLEDGE ABOUT THE VACCINE COLD CHAIN

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Aim: "Cold Chain" is the name, given to the system which consists of human and material that provides desired amount of active vaccine on the right temperature to the people who need. In this study; Family Physician Assistants' knowledge, who were thought to have active role in vaccine applications and maintaining cold chain, were evaluated.

Methods: Study was performed between November-December 2013. 32 Family Medicine assistants, who were working in Tepecik Education and Research Hospital, were included in the study. A questionnaire about cold chain applications, prepared by the researchers, were applied to the participants. Data were evaluated as percentages.

Results: 50% of the participants (n:16) were women, 50% (n:16) were men. Average residency period was 24 months. 46,8% of the participants had worked in primary care before the residency program and 28,1% had participated vaccination studies. 12 residents (34,3%) gave the correct answer for the question about the transport temperature of the vaccine from production to user. The words "fire, reserve stock, session, wasted" were defined correctly by 53,1% (n:19), 90,6% (n:33), 90,6% (n:33), 56,7% (n:20), respectively. Non of the residents could answer the questions about placement of the vaccines in the refrigerator, names of the vaccines that can be frozen and the dispatching period of the vaccines from warehouse. Ultraviolet sensitive vaccines were known correctly by 30 residents. Vaccines should not be on the shelves of the refrigerator door was known by 11 (31,3%) person as a correct answer. Refrigerator to do list, no-frost refrigerator necessity, ice packs sequence, temperature monitoring device and temperature monitoring chart were known correctly by 35 (%96,8), 34 (%93,7), 35 (%96,8), 35 (%96,8), 36 (%100) residents, respectively. Meaning of the color changes in heat follow-up cards was known by 26 (71,8%) people and the efficiency change by freezing was known by 28 (78,1%) people.

Conclusion: Vaccine cold chain process, which has an undisputed importance in terms of effectiveness of the vaccine should be well known by all staff involved in this process. Family medicine residents were found to be highly knowledgeable about refrigerator, ice packs, materials put in the cabinets and heat follow-up methods. But, their level of knowledge about vaccine protection, tracking and general concepts is quite low.

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PO018-FRI

OPTIMIZATION OF ASTHMA TREATMENT WITH COMBINATION OF ICS AND LABA IN PRIMARY CARE

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Research question: To investigate how many patients with asthma in primary care are treated with combination of inhaled glucocorticosteroid and long-acting β agonist, their symptom's control and adaptation with guide management

Background: Asthma is a chronic condition that can't be cured. Its principal characteristic is variability. Is necessary an adequate monitoring and management. Clinical guidelines advise that treatment should be adjusted in a continuous cycle driven by the patient's asthma control status. If asthma is controlled on the current treatment for at least three months, treatment can be stepped down. Ongoing monitoring is essential to maintain control and to establish the lowest step and dose of treatment to minimize cost and maximize safety.

Possible methodology: The design of the study is an descriptive and observational study. We'll extract the sample of outpatient s with asthma diagnose label in database of our health care settings . We'll analyze a randomized sample of around 300 clinical records looking for combined treatment of ICS and LABA prescribed by their GP. With this selection records we'll collect patient's demographic and clinical variables . We'll evaluate treatment's optimization according GINA clinical guideline.

Questions to discuss: The question is that probably is necessary to improve ongoing asthma management. Many patients can obtain benefits of lowest step to reduce side effects and maximize safety

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PO019

SURVEY ON COPD FOR PRIMARY CARE PHYSICIANS

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Brief outline of context: COPD is a relevant illness with a great and worrying infradiagnosis.

Brief outline of what change you planned to make: The objective of this survey was to learn about the degree of knowledge of COPD in Spanish family doctors through a questionnaire carried out online or on paper using de delphi method in order to improve the COPD diagnosis and management.

Assessment of existing situation and analysis of its cause: In EPI-SCAN study, published in 2007 by Miravittles, only 27% of the cases identified like COPD had previous diagnosis. This percentage is very similar to that observed in Spain in IBERPOC study in 1997 of 21.8%. The result is consistent with other international recent studies that show a previous diagnosis of 20% in the United Kingdom or 19% in Greece , for example.

Strategy for change: who, how, following what timetable: On a population of 70.000 family physicians, a sample of 383 answered surveys was required for an error of 5% and a confidence level of 95%. 480 primary care physicians answered a questionnaire of 22 questions prepared by the Spanish Group of Respiratory in Primary Care (GRAP). Then compared the answers of several questions by comparison of proportions of samples.

Effects of changes: The average of years of practice of the medical participants was 21,42 years, 57,71% were women and 50,83% no smoking. 91% primary centers had spirometer and most (87%) professionals performed spirometry in their centers, in 58% of them by a specific nurse. The majority of respondents (77%) requested ≤ 5 spirometries a month.

Measurement of improvement: The 70% considered that the spirometries had good quality . COPD were diagnosed preferently by primary care physicians, followed by neumonologist, the 83% by spirometry, mainly in patients who have dyspnea. 55% of the physicians diagnosed bronchial obstruction with correct spirometric parameters and a half of them prescribed correctly inhaled corticosteroids.

Lessons learnt: The goal in treatment for these doctors was decrease the symptoms and physicians who had made a training course of spirometry requested more spirometries and diagnosed COPD better.

Message for others: The realization of training courses on spirometry increases the number of theses tests requested and the diagnosis of COPD. The percentage of patients with COPD or perceived quality of spirometry does not influence the number of spirometries requested.

Training courses appear usefull to decrease the COPD infradiagnosis.

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Disclosure of Interest: None Declared

PO001-SAT

IN WHICH PATIENTS WITH ASTHMA SHOULD REGULAR CONTROLLER THERAPY BE INITIATED?

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Aim: Clinical practice guidelines (CPGs) inform the daily management of our patients by providing evidence based recommendations for their care. We analyzed recent international guidelines asthma guidelines (last 5 years), to determine when one should initiate regular controller therapy for a patient with asthma.

Methods: The Canadian Thoracic Society (CTS), British Thoracic Society/Scottish Intercollegiate Guidelines Network (BTS/SIGN) and the Global Initiative for Asthma (GINA) guidelines were reviewed by a set of physicians including a respirologist with expertise in knowledge translation(SG), a worldwide acknowledged respirology leader in asthma (LPB), a respirology resident trainee (NG) and a primary care practitioner with a special interest in asthma (AK).

Results: While all of the guidelines advise starting controller therapy in the form of inhaled corticosteroids (ICS) when the patient is "uncontrolled," the thresholds defining a lack of control differ between guidelines, and some guidelines do not apply certain criteria (Table). Differences included symptom frequency and lung function.

Patients report any of the following criteria:	GINA	BTS/SIGN	CTS
Daytime symptoms /week	>2	≥3	≥3-4
Night time symptoms/week	Any	≥1	1
Rescue therapy per week	>2	3	≥4
Activity limitations	Any	-	Any
Exacerbations needing oral steroids	-	Any in last 2 years	Any (no time period given)
Lung function FEV1 (%predicted) or PEF (%personal best)	<80	-	≤90
Other	-	-	Asthma related missing work or school. PEF variability ≥10-15%. Sputum eosinophils ≥ 2-3%
Level of evidence	B	B	None provided

Conclusion: AA guidelines should use the same evidence to reach conclusions and recommendations, but they do not, Conflicting counsel confuses the target audience and may add to guideline distrust among health care practitioners. Involvement of primary care might mitigate some of these issues and improve guideline implementation

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Disclosure of Interest: None Declared

PO002-SAT

ANALYSIS OF DYSPNOEA DEALT BY A PRIMARY CARE AND URGENCY UNIT IN OUR ENVIRONMENT BASED ON MEDICAL-NURSING MANAGEMENT DURING THE NIGHT SHIFT

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Aim: Based on our references the number of patients affected of COPD (Chronic Obstructive Pulmonary Disease) increases at our area in October. We have considered cases attended by a Primary Care and Urgency Unit in that month and the results of the doctor-nurse examinations.

Methods: Our study is based on the descriptive-retrospective analysis of the patients attended at the Primary Care and Urgency Unit in Chiclana (Cádiz). We have focussed our study on patients that came to our unit with "breathing difficulty", "acute respiratory distress syndrome", "asphyxia" and definitely "Dyspnea". The data was collected from 1 to 31 October 2013 at night shift, from eight o'clock in the afternoon to eight o'clock in the morning.

The representative sample size is 113; 35 of them were children (age between 0 and 14); and 78 adults (age between 15 and 90).

Results: According to the sex, 52,21% were male (59 patients) and 47,79% were female (54 patients).

Regarding the time to go to the primary care unit a large number of them comes between 20:00 and 0:00 which represents 69,02% (78 from 113). The percentages are lower from 0:00 to 02:00 (20,35%) and keeps on descending to 8:00, detecting a minimum rising from 06:00 to 07:00 (4,42%).

Referral: 29,20% (33 patients) were referred to their paediatrician (primary care health centre). 68,14% of them (77 patients) were referred to his primary care doctor; 1,77% (2 patients) were referred in a patient transport ambulance to the paediatrics unit at Hospital. And finally 0,89% were referred to Hospital with life-support equipment (medicalized ambulance).

Nursing interventions were required in 46,90% of cases: Administer medication as appropriate, use aerosol therapy, monitor vital signs (blood pressure, pulse, temperature, and respiratory status), intravenous insertion for fluids and medications...

Finally, the disease that comes first is: Acute Bronchitis (17,69%) followed by "Asthma" with 16,81%, "Acute Nasopharyngitis" (11,50%), "Cough" (8,85%); "Anxiety Disorder" (8,85%) and "Acute Laryngitis" (7,07%). The remaining 38,08% of the sample, refers to other diseases as: "Fever", "Panic Disorder", "Acute Nasal Catarrh", "Ischaemic Heart Diseases"...

Conclusion: According to the results, the health care interventions based on the medical-nursing examinations at the Primary Care and Urgency Unit in our environment is highly efficient (just 2,65% of the patients were referred to the Hospital). The Primary Care Unit is qualified to assist all kind of respiratory diseases even if they are included on paediatrics or adults patients, reducing most of health problems in the community that were only resolved at Hospital before.

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Disclosure of Interest: None Declared

PO003-SAT

AN AUDIT OF COPD MANAGEMENT IN A GENERAL PRACTICE IN IRELAND

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Brief outline of context: COPD is a common condition. COPD management occurs primarily in the community. The **audit aims** were to assess how we were managing patients with COPD and to hopefully improve on patient care based on current guidelines.

The ICGP Management of COPD in general practice guidelines and GOLD guidelines provide a national and international framework of clear standards of COPD management. These include each patient with COPD should have spirometry performed at least once, patients should receive influenza vaccination annually and have received the pneumococcal vaccination.

Brief outline of what change you planned to make: As a result of this, a COPD care template was devised using Health 1 computer software following a practice meeting outlining optimal COPD care objectives. An audit was planned by retrospectively reviewing the practice computer patient files to assess existing practice and compare it with optimal care of patients with COPD.

Assessment of existing situation and analysis of its cause: At initial audit, smoking status was documented for 82 % patients, smoking history in 14.3% patients and smoking cessation measures in 5 % cases. 4.5 % patients had spirometry completed and documented in the notes. Influenza and pneumococcal vaccinations were up-to-date to 2010 in 82 % and 45.5 % patients respectively.

Strategy for change: who, how, following what timetable: Ethical approval was sought and obtained in Sept 2011. A standard of 85 % was agreed. A comparison was made between our practice and current guidelines; and following this a practice meeting took place and an intervention planned to invite patients with either established or clinically suspected diagnosis of COPD to attend for annual COPD review. A total of 21 patients agreed to the review. Following this a re-audit took place.

Effects of changes:

At re-audit of 21 patients, 100 % patients had smoking status, smoking history, smoking cessation measures reviewed and documented. Annual review and spirometry was completed in 100 % patients. Influenza and pneumococcal vaccinations were up to date for 100 % and 75 % patients respectively.

Measurement of improvement: As a result the standard of 85% was achieved for many care parameters except pneumococcal vaccination uptake which on reaudit was at 75%.

Lessons learnt: Strengths of this audit are its simple thorough methodology, good response rate and use of existing resources in recessionary times to improve patient care delivery.

Limitations of the study are the small sample sizes and relatively short intervention period at 3 months.

Message for others: Conclusion:

This small but important audit in general practice has brought about an improvement in our patients' quality of COPD care in line with ICGP guidelines.

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Disclosure of Interest: None Declared

PO004-SAT

THE IMPACT OF MORNING SYMPTOMS ON DAILY ACTIVITIES IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

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Aim: To assess the impact of morning symptoms of COPD on patients' ability to perform activities throughout the day and the extent to which physicians provide advice including how medications may help maintain quality of life.

Methods: This study was conducted in eight countries using a structured 20 minute on-line survey. Patients had to have a physician's diagnosis of COPD, be aged 30 - 70 years and suffer from at least one of four listed symptoms (shortness of breath, increased cough, tightness in the chest and wheezing) to a greater extent in the morning.

Results: A total of 811 patients completed the study. 'Cough' (57%), 'shortness of breath' (46%) and 'coughing up phlegm' (43%) were most frequently judged to be the worse symptoms in the morning. Although 'improved breathing' (76%) and 'reduced shortness of breath' (63%) were the key patient perceived goals of medication, a third (33%) of patients also cited 'improves ability to carry out morning activities' as a key treatment goal. Shortness of breath was identified as the commonest cause of reduced task performing ability. Patients on average took 12 minutes longer to complete the most basic activity of 'getting up' and about 30 minutes longer for more physically demanding activities (e.g. routine morning chores). Only 22% of patients indicated that their physicians had discussed how their medication might help improve their 'ability to carry out morning activities' even though it was selected as a 'goal of treatment' by a third of patients. Over half (53%) of all 811 patients confirmed that they had suffered social inhibition or embarrassment at some point in the past, as an impact of COPD symptoms in the morning. Almost half (49%) of the 811 patients reported that they had made changes to their morning routine as a result of symptoms and (54%) of all patients confirmed that morning symptoms continued to affect their routines throughout the day. The majority (79%) of patients believed that their medications provided sufficient relief of their morning symptoms, the most frequently mentioned benefits being 'improvement in breathing' (77%). However, these same medications were deemed to be much less able to help improve patients ability to carry out morning tasks, as only 21% overall mentioned this as a benefit. Morning symptoms were shown to have negative impact on the working day in 63% of employed patients leading to serious personal financial and economic implications.

Conclusion: In addition to emphasizing the importance of physical activity, it is recommended that treatment guidelines should be updated to stress the importance of communication between patients and health care practitioners in maintaining quality of life.

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Disclosure of Interest: N. Chavannes Consultant for: Novartis, Boehringer Ingelheim, Pfizer, AstraZeneca, Chiesi and GlaxoSmithKline; , P. Hagan Consultant for: (independent); , B. Oezel Employee of: Novartis

PO005-SAT

EVALUATION OF THERAPY SUCCESS IN PATIENTS WITH TUBERCULOSIS – RE-APPRAISAL AFTER TREATMENT COURSE COMPLETION

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Aim: Successful treatment of patients with tuberculosis (TB) requires close monitoring of patient adherence, to prevent in time recurrences. The aim of this study was to evaluate the evidence of treatment success in tuberculosis cases treated under DOTS strategy in comparison to conventionally past-treated patients.

Methods: A total of 54 TB patients, 13 newly detected cases in the period 2006-2009 and treated according DOTS strategy and 41 past-treated patients were studied. All patients were interviewed by a general practitioner, whereas the 13 DOTS patients were monitored during the treatment. At the end of the treatment outcome assessment was conducted based on sputum smear examination and other diagnostic exploration. Comparison of parameters related to treatment evidence was performed between DOTS- and past-treated TB cases.

Results: Clinical re-appraisal after the completion of treatment was performed in 84.6% of the 13 DOTS patients, whereas one deceased and another one was lost to follow-up. Re-assessment was done in 75.6% past-treated patients, whereas in 12.2% no outcome evaluation was performed and further 12,2% cannot recall. Regarding the evidence of treatment success, in 81.8% of the DOTS patients who completed therapy, sputum smear examination (SSE) and thorax x-ray (TXR) were performed, and in 18.2% TXR. Out of the 41 past-treated patients, in 61% SSE and TXR were performed, in 12.2 TXR, in 9.8% SSE, in 4.9% TXR and thorax-CT, whereas 12.2% do not remember.

Conclusion: DOTS strategy in patients with tuberculosis contributes not only to the continuous control and adherence of treatment, but is also a cost-efficient and reliable method of outcome evaluation, based mainly on the sputum smear examination, both at the course and at the end of treatment.

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Disclosure of Interest: None Declared

PO006-SAT

WORKPLACE CONDITIONS AS AGGRAVATING FACTORS FOR THE COURSE OF DISEASE IN PATIENTS WITH TUBERCULOSIS

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Aim: Inadequate work conditions in patients with tuberculosis constitute aggravating factor of morbidity and of treatment outcome. Furthermore risk for transmission and infection of colleagues exposed to the source of infection is increased. The aim of this study was to record and describe these aggravating conditions in the work environment of TB patient.

Methods: A total of 54 TB patients were interviewed by a general practitioner and various parameters of work environment, such as aeration, lightness, humidity and cleanliness were recorded.

Results: Out of the 54 patients 29.6% were retired, 26% farmers, 18.5% employees, 9.2% self-employed, 9.2% in household acting and 7.4% workers. Excepting the pensioners, aeration was satisfactory in 26%, moderate in 63% and deficient in 11%. Lightness showed similar results (24%, 71%, 5%), whereas the cleanliness was moderate in 42% and unsatisfactory in 39%. Regarding the air quality, in 50% high humidity was recorded, whereas in 95% the temperature was adequate.

Conclusion: The results demonstrate considerable problems at the workplaces of TB patients in respect to ventilation, lightness and cleanness, as well as to air quality. Concerned are mainly farmers, workers and self-employed with lower socioeconomic level. The inadequate work conditions of TB patients in combination with similar inadequate living conditions constitute aggravating factor for disease development, course of the disease and treatment outcome, since they are at least 8-10 hours daily at work. Thus, effective measures improving the workplace environment should be taken to prevent and promote the health of both, the TB patients and their colleagues.

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Disclosure of Interest: None Declared

PO007-SAT

ASSESSMENT OF NICOTINE DEPENDENCE, WILLINGNESS TO QUIT SMOKING AND COPD RISK AMONG TAXI DRIVERS IN A GREEK CITY

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Research question: Smoking prevalence, nicotine dependence, willingness to quit smoking and COPD risk among taxi drivers in a Greek city.

Background: A previous research in China showed that smoking is associated with a significant excess risk of overall mortality in professional than non-professional drivers. A study that would assess the smoking habits, addiction, and willingness for smoking cessation among professional drivers may guide us in delivering, if necessary, relevant health interventions in this group. The parallel administration of a questionnaire to assess the risk of COPD would also pose a screening opportunity.

The results of this research would not only guide locally situated interventions for promoting health among taxi drivers in Patras, but may also point out a professional group at a particular risk for smoking and COPD in Europe.

Possible methodology: In the city of Patras taxi drivers are the most accessible and numerous professional drivers. They are ideally situated for future interventions, even for prospective studies. Therefore we intend to administer the Fagerström test for nicotine dependence (FTND), a questionnaire concerning the willingness to quit smoking by the Hellenic Thoracic Society and a COPD diagnostic questionnaire developed by Price et al. for primary care settings.

Questions to discuss: Which tools are most appropriate for assessing the smoking habits and and COPD risk? Could there be any other populations where a similar intervention would be of interest?

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Disclosure of Interest: None Declared

PO008-SAT

COMORBIDITY AND LIFE STYLE HABITS OF PATIENTS WITH TUBERCULOSIS

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Aim: Concomitant diseases, tobacco and alcohol use in patients with tuberculosis (TB) have negative impact regarding the effectiveness of treatment and control of side effects in TB patients, since antituberculosis therapy involves several drugs in combination for six or more months. The aim of the present study was to evaluate the comorbidity and life style habits of TB patients at the beginning of TB therapy.

Methods: Face-to face interviews were conducted in 54 newly detected and past-treated TB patients (70% males), aged 22-85 years, during the time period from 2006-2009 in W-Greece by a general practitioner. Secondary disorders and various life style habits (smoking, alcohol use, diet, and physical activity) were recorded.

Results: Chronic obstructive pulmonary disease (COPD) or bronchial asthma were present in 33% of the patients, coronary heart disease in 27,7%, upper respiratory tract infections in 12,9%, hypertension in 11%, gastrointestinal diseases in 5,6%, alcoholism in 5,6%, psychiatric disorders in 3,7% and diabetes in 1,9%. Tobacco use reported 48,1%, and daily alcohol consumption (>3 glasses wine) 75,9%. Mediterranean diet followed about 76% and daily exercise was mentioned by 67%.

Conclusion: The diseases of the respiratory tract and mainly COPD and bronchial asthma are frequent in TB patients. Furthermore, half of them are smokers and the great majority, mainly from lower socioeconomic groups, is consuming alcohol. Careful monitoring for these aggravating risk factors and applying of prevention and treatment measures is essential, and consideration should be given in the course and follow-up of anti-TB treatment, to increase the effectiveness of the therapy and reduce possible harms or adverse reactions.

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Disclosure of Interest: None Declared

PO009-SAT

THE ROLE OF EFFECTIVE CPAP THERAPY IN PATIENTS WITH IDIOPATHIC PULMONARY FIBROSIS AND OBSTRUCTIVE SLEEP APNOEA: ONE YEAR OF EXPERIENCE

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Aim: The recent literature shows an increased incidence of obstructive sleep apnea (OSA) in patients with idiopathic pulmonary fibrosis (IPF). On the other hand there is a paucity of studies related to long term effects of CPAP treatment in this patient group. Our aim was to assess the effect of CPAP on sleep and overall life quality parameters in IPF patients with OSA after one year of effective OSA therapy. This study represents the continuum of our previous published study evaluating the same parameters until the sixth month after CPAP initiation.

Methods: Ten patients (8 males and 2 females, age 68.6 ± 7.9 yrs) with newly diagnosed IPF and moderate to severe OSA, confirmed by overnight attended polysomnography (PSG), were included. Therapy with CPAP was initiated after a formal in-lab CPAP titration study. The patients completed the Epworth Sleepiness Scale (ESS), the Pittsburgh Sleep Quality Index (PSQI), the Functional Outcomes in Sleep Questionnaire (FOSQ), the Fatigue Severity Scale (FSS), the SF-36 quality of life questionnaire, and the Beck Depression Inventory (BDI) at CPAP initiation and one year after effective CPAP therapy.

Results: A statistically significant improvement was observed in the FOSQ (14.1 ± 2.9 vs. 17.7 ± 1.5 , respectively, $p=0.008$), the PSQI (13.3 ± 3.2 vs. 7.3 ± 5.6 , respectively, $p=0.01$) and the parameters of Social Functioning, SF (80.6 ± 12.7 vs. 92.2 ± 11.5 , respectively, $p=0.04$) and Role-Emotional, RE (63.9 ± 16.7 vs. 81.2 ± 13.9 , respectively, $p=0.03$) of the SF-36 questionnaire after one year of effective CPAP treatment. Statistical significant trends were observed in the Bodily Pain (BP) component as well as in the Total mental status score of the SF-36 questionnaire. No death or IPF exacerbation and/or need for hospitalization was noted during the above period in the included patient group

Conclusion: OSA is common co morbidity in IPF and its early recognition and treatment is crucial. Effective CPAP treatment in IPF patients with OSA results in a significant improvement in daily living activities based on the FOSQ, namely an OSA specific follow-up instrument. In addition statistically significant improvement was noted in the PSQI, namely a specific questionnaire for sleep quality. In the absence of any effective treatment for IPF so far, the improvement of quality of life and sleep by treating common co morbidities like OSA should be recognised as a primary therapeutic goal.

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Disclosure of Interest: None Declared

PO010-SAT

TIOTROPIUM RESPIMAT SOFT MIST INHALER VERSUS HANDIHALER TO IMPROVE SLEEPING OXYGEN SATURATION AND SLEEP QUALITY IN COPD

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Aim: Previous reports have shown that sleep can be associated with clinically important adverse effects in patients with chronic obstructive pulmonary disease (COPD), such as disordered gas exchange and poor sleep quality. Such adverse effects are known to have a negative impact on a range of clinical outcomes in COPD. There is a shortage of data to support the efficacy of long-acting inhaled anticholinergic agents in improving these adverse effects. Therefore, we aimed to compare the effect of Tiotropium Respimat Soft Mist Inhaler versus HandiHaler on sleeping oxygen saturation and sleep quality in patients with COPD, 6 months after treatment initiation.

Methods: In a randomized, double-blind, parallel-group trial involving patients with COPD stage A or B, we compared 6 month treatment with tiotropium Respimat to tiotropium HandiHaler on sleeping arterial oxygen saturation (SaO₂) and sleep quality. Overnight polysomnography and pulmonary function testing was performed at baseline and after 6 month treatment.

Results: A total of 361 patients with newly diagnosed COPD with awake resting arterial oxygen tension >75 mmHg, for whom inhaled anticholinergic therapy had been recommended, were randomised and 200 patients completed the 6 month treatment trial. At the end of treatment both groups showed significant improvements in mean SaO₂ and percentage of sleep spent below 90% of SaO₂ (TST90) compared to baseline. However, the patients who received Respimat had significantly better TST90 than did the patients receiving handihaler. Sleep disturbance was highly variable in these patients, but duration of sleep stages were significant better in the Respimat group.

Conclusion: Sleeping SaO₂ can be improved with Tiotropium delivered either by the HandiHaler device, or via Respimat Soft MistInhaler. However, the patients who received tiotropium respimat had significantly improved mean SaO₂, TST90 as well as sleep architecture parameters.

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Disclosure of Interest: None Declared

PO011-SAT

USABILITY, CONFIDENCE, PREFERENCE AND SATISFACTION OF USE WITH REVOLIZER, A DRY POWDER INHALER IN OBSTRUCTIVE AIRWAY DISEASE

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Aim: To assess usability, satisfaction, confidence and preference with the use of Revolizer, a device to deliver DPI.

Background: Difficulty in using an inhaler device leads to reduced lung deposition and consequently poor asthma control.

Methods: This was an open-label, prospective, multi-center study with 100 participants in two groups of 50 healthy volunteers and 50 patients with obstructive airway disease (OAD). All participants went through training on the use of Revolizer at visit 1 and then record the average time taken for three consecutive correct attempts (primary endpoint). Secondary endpoints were number and type of errors (critical and non-critical), scores on the confidence, usability, preference and satisfaction questionnaires.

Results: The study included 100 participants (45 with asthma and 5 with COPD) that completed the study. The average time to 3 consecutive correct attempts was 3.7 minutes and significantly reduced to 3.1 minutes at visit 2 ($p < 0.0001$). The number of errors decreased from visit 1 at visit 2. Participants scored higher on the questionnaires at visit 2 and 78% preferred Revolizer over their current device.

Assessments	Maximum score	Score at visit 1 (Mean \pm SD)	Score at visit 2 (Mean \pm SD)
Confidence	12	10.8 \pm 1.0	10.8 \pm 1.0
Ease of use	18	16.3 \pm 1.3	16.1 \pm 1.5
Preference	72	63.3 \pm 5.1	62.9 \pm 5.6
Satisfaction	15	13.4 \pm 1.4	13.3 \pm 1.4

Conclusion: Revolizer, a novel DPI device, is easy to use in patients with obstructive airway diseases.

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Disclosure of Interest: None Declared

PO012-SAT

A FIXED DOSE COMBINATION OF SALMETEROL/FLUTICASONE PROPIONATE PROVIDES GREATER IMPROVEMENT WHEN COMPARED WITH FLUTICASONE MONOTHERAPY IN PATIENTS WITH ASTHMA

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Aim: To assess superiority of a SFC HFA pMDI combination versus FP HFA pMDI alone on pulmonary function and symptom control.

Background: Adding a long-acting β_2 agonist (LABA) to an inhaled corticosteroid (ICS) improves lung function of patients with asthma, as compared with increasing the dose of ICS. This study was conducted to compare the fixed dose salbutamol/fluticasone combination (SFC) (Cipla Ltd., India) with fluticasone propionate (FP).

Methods: This was a randomized, double-blind, 2-way crossover study in patients with mild to moderate asthma. Patients were randomized to receive 2 puffs BID of SFC (25/125 mcg) or FP (125 mcg) for two treatment periods of 4 weeks each, separated by a 2 week washout period. The primary efficacy measure was change in the pre dose FEV₁ at the end of treatment period from baseline. The secondary measures were change in diurnal variation of peak expiratory flow rate (PEFR), symptom scores and use of rescue medication.

Results: Fifty four patients were randomized of which 44 completed the study without any major deviations (PP). Despite minimal impairment in predose FEV₁ at baseline (74.86% predicted), an additional improvement of 80 mL in predose FEV₁ was observed in the SFC group compared with only 10 mL improvement in the FP group. A statistically significant improvement ($P < 0.0005$) in morning PEFR was also observed in SFC group versus FP alone (mean difference in mPEFR between the two treatment groups was 26.651 L/min [95% CI: 12.276, 41.032]). The mean change in the use of rescue medication decreased by 0.65 puffs/day and 0.47 puffs/day in the SFC and FP groups, respectively, at week 4 from baseline. The percentage of symptom free days and nights were higher after treatment with SFC than FP alone. Both the treatments were well tolerated.

Conclusion: The salmeterol/fluticasone fixed dose combination was demonstrated to be superior to fluticasone alone in improving pulmonary function and symptom control.

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Disclosure of Interest: None Declared

PO013-SAT

EFFICACY AND SAFETY OF TWO HFA MDIS OF FLUTICASONE PROPIONATE; A DOUBLE-BLIND, RANDOMISED, MULTI-CENTRIC, PARALLEL GROUP STUDY IN PERSISTENT MODERATE ASTHMA

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Aim: To determine whether the test fluticasone 125 mcg HFA pMDI (Test-FP) is non-inferior to the reference fluticasone 125 mcg HFA pMDI (Ref-FP) in patients with persistent moderate asthma.

Objective: To compare the clinical effect of a hydrofluoroalkane (HFA) pressurized metered dose inhaler (pMDI) formulation of fluticasone propionate (Cipla Ltd., India) with the established reference HFA pMDI formulation of fluticasone propionate (Flixotide, GSK, UK).

Methods: This was a 12 week, double-blind, multi-centric, parallel group study in patients with persistent moderate asthma. The patients were randomised (1:1) to receive either Test-FP or Ref-FP, 125 mcg/actuation, two puffs BID. The primary efficacy outcome was the change in pre dose FEV₁ at week 12 from baseline. Secondary efficacy outcomes were morning and evening peak expiratory flow rate (mPEFR and ePEFR), daytime and nighttime asthma symptoms, rescue medication use and safety assessments.

Results: Of the 308 randomised patients, 270 (Test-FP: n=132; Ref-FP: n=138) completed the study. Despite relatively mild impairment in FEV₁ at baseline (69% predicted), the mean change from baseline in FEV₁ in the PP population at week 12 for Test-FP was 0.143 L and 0.032 L for Ref-FP (treatment difference = 0.086 L; 95% CI: 0.0221, 0.1500). The findings of the secondary outcomes supported the primary outcome. The mean number of rescue medication puffs in the morning decreased by 0.72 and 0.54 in the Test-FP and Ref-FP groups, respectively, at week 12 from baseline. Similar results were observed in the ITT Population. Both the treatments were well tolerated.

Conclusion: The test fluticasone propionate HFA pMDI (Cipla Ltd., India) is non-inferior in terms of efficacy and safety to reference fluticasone propionate (Flixotide, GSK).

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Disclosure of Interest: None Declared

PO014-SAT

A USERS' GUIDE TO MEASURING MULTIMORBIDITY IN COPD: AN IPCRG INITIATIVE

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Brief outline of context: Currently, health care practitioners have little guidance when measuring multimorbid conditions in their COPD patients.

Brief outline of what change you planned to make: This abstract presents the ongoing process of an IPCRG initiative designed to provide a simple and practical guide that employs a succinct, descriptive approach to summarizing the strengths and weaknesses of 10 multimorbidity tools commonly used by primary care practitioners with their COPD patients.

Assessment of existing situation and analysis of its cause: Efforts have been made by researchers to provide informative publications that address the current challenges of measuring multimorbidities in patients with chronic disease; however, to date, no single contribution provides a comprehensive approach, or practical guide that lists available tools for measuring, specifically, multimorbidity in patients with COPD in primary care.

Strategy for change: who, how, following what timetable: A review of the literature for additional measures is ongoing, as well as investigative work of the current research literature already retrieved that is used to inform the descriptive properties of each tool.

Effects of changes: Through the use of the IPCRG Users' Guide, health care practitioners will be better placed to understand the challenges, and in turn, better able to select the most appropriate tool to measure multimorbidity in their COPD patients in their primary practice.

Measurement of improvement: By condensing the research of key investigators in the field, this Users' Guide will highlight important information for primary care practitioners. By providing a brief discussion of each of the 10 tools, primary care practitioners will be better placed to understand the strengths and weaknesses of each measure, and make informed decisions on the application and relevance of each tool to their primary practice needs.

Lessons learnt: The use of instruments to measure mortality using tools that indicate the presence of co-existent conditions in primary care settings presents a number of challenges, including agreement on appropriate code lists, quality recording (Schneeweiss et al., 2000), and diagnostic classification schemes (e.g., self-report, International Classification of Diseases [ICD] coding, Clinical Classifications Software [CCS]) (Goodman et al., 2013). These challenges stem mainly from a lack of consensus on terminology for multiple co-existent disease (Almirall & Fortin, 2013; Goodman et al., 2013).

Message for others: Given the challenges of data collection methods, classification schemes, and the lack of consensus regarding terminology, many of the tools which are commonly used and readily available may be inappropriate when measuring multimorbidity in COPD patients. With the help of this comprehensive Users' Guide, primary care practitioners can gain practical, evidence-based guidance when selecting an appropriate tool for their practice needs.

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Disclosure of Interest: None Declared

PO015-SAT

USE OF INHALED CORTICOSTEROIDS STUDY OF PATIENTS DIAGNOSED OF COPD AT PRIMARY CARE

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Aim: A recently published Spanish COPD guide(gesEPOC) in which patients diagnosed with COPD are classified in 4 different phenotypes and, according to the severity level, a treatment that has more evidence is proposed to be the optimal for the disease(therapeutic algorithm based on bronchodilator therapy basically and various drug combinations as inhaled corticosteroids, theophylline...).The severity level is to be set by a scale known as BODEx that measures airflow obstruction, degree of dyspnea, body mass index, physical activity level and history of severe exacerbations (who required hospital care).In the guide is given much importance to the correct diagnosis of patients, both clinical and spirometric. We are going to do a study basing on it.Once phenotyped patients and checked their severity level, observe the treatment being carried, and check if we are making an excessive use of inhaled corticosteroids.

Methods: The study includes all patients in our health center diagnosed of COPD by medical history program implemented in the Valencia Health Agency(Abucasis).We can access to information about the treatment prescribed by the physician. We want to check if patients take medication properly through the clinical interview. Once patients are phenotyped and know what their level of severity, we will know which patients should or should not take inhaled corticosteroids. In this way, we will check if it is really doing an excessive use of them.Are statistics data that can help us get an idea of the situation, but we also want to make it more useful, and inform to physicians of the results of their patients, because they are those who have the patient daily. Let this be their guide and always low criterion to improve management of their patients.

Results: The study takes place between November 2013 and March 2014. Collection and data analysis will be done with the statistical analysis program (SPSS) that will give us the results we seek.In our clinic 859 people are diagnosed with COPD, that have spirometry done in the health center 192, of which 127 have obstructive spirometry and therefore can be included in the study. We can conclude that spirometry is applied with good clinical judgment. There is a high percentage of spirometric obstructive pattern resulting in the total requested. But we have a little short of the percentage of spirometry that are requested of all patients with COPD. Taking spirometry of these patients, we can qualify as we have mentioned above and therefore also improve handling. The work has been passed by an ethics committee, which approved the study.

Conclusion: We understand this can be a significant improvement on comprehensive care for our patients with COPD and pretend that the results are presented at the congress of IPCRG Athens 2014, and we think it is a work done by and for primary care physicians.

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Disclosure of Interest: None Declared

PO016-SAT

EVALUATION AND CONFRONTATION OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) IN PRIMARY HEALTH CARE

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Research question: The purpose of this study is the evaluation and confrontation of COPD exacerbations of those attended the primary health care centre (PHCC) of Salamis and the significance of PHCC in the overall outcome of the disease.

Background: Several epidemiologic studies estimate that the prevalence of COPD is 9-10% worldwide in adults over 40 years old. Other studies indicate that the severity of COPD depends on the degree of airflow obstruction and disability, the frequency of exacerbations and the value of FEV₁. The diagnosis of COPD is made when the FEV₁/FVC ratio is less than 0.7 after performing post-bronchodilator spirometry.

Possible methodology: Between September 2013 and December 2013, 50 patients with moderate COPD and 98 patients with exacerbations of COPD were recruited. Most participants were men (58.90%) aged 60-80 years old (61.50%). **Results:** The main cause of COPD in our specimen was tobacco smoking (74%), which precedes heavy exposure to certain irritants at work (26%). COPD is associated with important chronic co morbid diseases, including cardiovascular disease (28.2%), hypertension (20.5%) and diabetes (12.82%). The 23.3% (n=53) of the specimen had attended the PHCC of Salamis more than two times with the usual exacerbation symptoms, while a 13% did not take their medication properly. In the majority of the patients medication was recommended, as appropriate i.e. tiotropium, indacaterol or combination of both and in severe COPD combination of inhaled corticosteroids and bronchodilators. Most of the patients were confronted successfully and only a 28.2% was transported in pulmonary clinic for hospital treatment and stabilization. To the rest of the patients, medication was recommended and they were advised to quit smoking and to receive influenza and pneumococcal vaccines.

Questions to discuss: The main goals of PHCC of Salamis were to improve the quality of care that was provided to patients with COPD and to reduce the number of exacerbations of COPD. Implementation of the national clinical guidelines on management of COPD led to a better quality of patients' life and the reduction of socioeconomic status of COPD.

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Disclosure of Interest: None Declared

PO017-SAT

SPIROMETRY IN PRIMARY HEALTH CARE CENTRE AND EARLY DIAGNOSIS OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

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Research question: The purpose of this study is to early identify COPD in asymptomatic adults and the evaluation of those attended PHCC (Primary Health Care Centre) of Salamis with exacerbations of COPD. Moreover one of our goals was the estimation of the appropriate therapeutic treatment in order to ameliorate the lung function.

Background: Chronic Obstructive Pulmonary Disease (COPD) constitutes the fourth leading cause of death worldwide. The severity of COPD depends on the degree of airflow obstruction and disability, the frequency of exacerbations per year, the value of FEV1 and the exposure to various risk factors.

Possible methodology: A number of 88 adults were recruited. Most of them were women (51%), aged over 40 years old that underwent spirometry test in the PHCC of Salamis during one week. **Results:** Most participants (54.24% / n=32) appeared with normal values in spirometry. Mild COPD was present in 38.64% (n=34), moderate COPD in 22.73% (n=20) and severe COPD in 5.56% (n=2). The majority of patients (47.73% / n=42) was exposed to tobacco smoke and a percentage of 45.23% (n=19) were smoking ≥ 60 package/year. 67.05% (n= 59) present symptoms from the respiratory system and had at least one exacerbation of COPD per year. Among the participants, a 44.32% (n=39) was taking medication as appropriate: tiotropium (38.64% / n=15), indacaterol (33.33%, n=13) and combination of fluticasone and salmeterol. 28.21% (n=11). A great amount of the specimen (47.73 / n=42) was overweight and some of them (30% / n=13) were advised to undertake sleep apnea test due to their values of FEV1. All patients that were first diagnosed with pathological results, apart from taking medication, they were advised to quit smoking, to eat healthy and exercise regularly.

Questions to discuss: The primary health care plays an important role in diagnosis and prevention of COPD at early stages. The early diagnosis and treatment is of vital significance over the course of the disease. Spirometry comprises a valuable tool for the re-evaluation of the first diagnosed patients as well as the re-examination of the ones already diagnosed. This study is still in progress, since the aim of primary care is the control of the symptoms and a better quality of life.

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Disclosure of Interest: None Declared

PO018-SAT

FIXED DOSE COMBINATION OF FLUTICASONE/SALMETEROL MDI COMPARED WITH SALMETEROL AND FLUTICASONE IN TWO SEPARATE MDI PREPARATIONS IN PATIENTS WITH ASTHMA

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Aim: To assess the non-inferiority of the efficacy of SFC (25/125 mcg) vs. SM (25 mcg) and FP (125 mcg) given concurrently, in patients with mild to moderate asthma.

Objective: To determine whether a cost effective salmeterol/fluticasone combination (SFC) propelled in hydrofluoro alkane (HFA) pressurized metered dose inhaler (pMDI) developed by Cipla Ltd., India, provides comparable asthma control in symptomatic asthma patients as compared with salmeterol and fluticasone given separately via two single pMDIs (SM+FP) by Allen and Hanburys, UK.

Methods: This 12-week, double-blind, parallel group study randomised patients to receive either two puffs of SFC 25/125 mcg BID, or two puffs of SM 25 mcg and FP 25 mcg via two different inhalers, BID. The primary efficacy measure was the difference in the morning peak expiratory flow (mPEFR) at week 12 from baseline. Safety was also assessed.

Results: Out of the 360 patients enrolled in the study, 183 and 177 patients were randomised to the intent-to-treat population in SFC and SM+FP groups, respectively. The mean change in mPEFR at week 12 from baseline in SFC group was 37.6 L/min and in SM+FP group was 33.8 L/min (adjusted treatment difference: 4.7; 95% CI: -3.6, 12.9). The incidence of adverse events was similar in the two treatment groups.

Conclusion: The cost-effective combination of salmeterol/ fluticasone pMDI is non-inferior to fluticasone and salmeterol administered by two separate pMDIs.

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ORLB-001

UNDERSTANDING VARIATIONS IN OUTCOME IN COPD: EARLY RESULTS FROM AN OBSERVATIONAL STUDY USING ROUTINE CLINICAL DATA.

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Aim: To determine the proportions of patients diagnosed with COPD in UK General Practice populations who attended hospital because of respiratory problems (either Accident and Emergency department (A+E) attendance or hospital admission) and who died in a 2-year time period (01/01/11-31/12/12), and to estimate risk factors for poor outcomes.

Methods: A retrospective observational study, using individual patient-anonymised data held in the Hampshire Health Record (HHR, an electronic NHS database holding coded primary and secondary care routine clinical data for over one million patients). A prevalent cohort with a practice diagnosis of COPD as at 31/12/2010 were defined and described, with a 2 year follow-up of outcomes (hospital admissions, A+E attendances, mortality).

Read codes (a coded classification of clinical terms) are used in primary care in the UK to record clinical information electronically. Selected codes from the Read directory were used to define the COPD cohort and to interrogate the primary care data in the HHR. Hospital discharge data were identified from the Secondary Uses Service (SUS) using ICD-10 (International Classification of Disease, version 10) codes and Accident and Emergency Clinical Codes were used to identify respiratory A+E attendances.

Results: We identified 21243 patients with COPD, mean age (SD) 71.5 (11.7) years, 55.0% male.

FEV₁ values were available in 19085 patients (89.8%) and % Predicted FEV₁ in 10236 (48.2%); median (IQR) %predicted FEV₁ was 58 (43–72)%. FEV₁/FVC ratios were available in 17536 (82.5%); median (IQR) FEV₁/FVC was 58.1 (47.0–69.0) %.

Smoking status was recorded in 21068 (99.2%): 37.8% 'current smokers', 51.0% 'ex-smokers', 10.4% 'never-smokers'. Over the two years, 2777 patients (13.1%) had one or more respiratory hospital admission; in addition, 1285 (6.0%) attended A+E with a respiratory complaint.

2446 (11.5%) patients died (12.2% of men, 10.7% of women, $p < 0.001$). Comparing those who died with those who survived, mean (SD) age was greater (79.2 (9.8) versus 70.5 (11.6) years, $p < 0.001$) and median (IQR) FEV₁ was lower (1.04 (0.73-1.49) versus 1.39 (0.99-1.88) litres, $p < 0.001$). Death occurred in 856 of 2777 who were hospitalized (30.8%), compared to 1590 of 18466 (8.6%) of those who were not ($p < 0.001$).

Conclusion: In a broad, unselected UK primary care COPD population, we highlight the high percentage of patients still smoking (over 1/3) and the poor prognosis of COPD: 1 in 10 patients died over the 2 years, respiratory hospitalisation occurred in over 1 in 6, and almost 1 in 3 of those with an admission were dead at the end of the 2 year observation window. The prognosis following a respiratory admission in a COPD patient is worse than that from a myocardial infarct or most cancers.

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ORLB-002

SPIROMETRY QUALITY CONTROL STRATEGY

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Brief outline of context: Asthma and COPD are prevalent conditions in Baleares and most patients are diagnosed and followed up in the public primary care health system. Every practice in Baleares has its own spirometer to perform the required tests. All spirometers are similar. Every hospital and primary care practice depending on the Balearic public health system are connected by an universal informatic platform and share patients' medical records

Brief outline of what change you planned to make: By integrating the spirometry tests into the informatic system we would be able to develop a structured spirometry quality evaluation plan, as well as to share the tests among all health system professionals working both in primary care or hospitals.

Assessment of existing situation and analysis of its cause: *Brief outline of problem:* Since 2000, we have developed a spirometry implementation and education strategy trying to assure good quality spirometry in every primary care practice in our system. Continued quality evaluation is one of the missing points in the strategy.

In previous years, spirometry software only saved the tests in an internal file.

Strategy for change: who, how, following what timetable: We have developed an informatics system that integrates the signal coming from the spirometers into the Balearic Public Health Service universal informatics platform. The data are saved in HL7 language what also opens the possibilities to get spirometric data into specific informatics applications for clinical decision help systems and indexes calculations.

Effects of changes: We are now in the position to begin our spirometry quality control continued evaluation and clinical decision help systems and we are piloting them in some primary care practices

Measurement of improvement: By auditing central files in the computerized integrated health System.

Lessons learnt: *Lessons learnt and message for others:* In the informatics' era, spirometry quality control is easy to perform by using not expensive informatics developments that can assure an easy and accurate evaluation of the tests

Message for others: *Lessons learnt and message for others:* In the informatics' era, spirometry quality control is easy to perform by using not expensive informatics developments that can assure an easy and accurate evaluation of the tests

Disclosure of Interest: None Declared

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ORLB-003

INCREMENTAL INNOVATION IN ASTHMA / COPD MANAGEMENT

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Brief outline of context: Incremental Innovation in Asthma/COPD Management R. Rychlik, F. Kreimendahl

Introduction

Academic and industry researchers investigate innovative compounds for the management of severe and prevalent diseases worldwide. Ultimately, these compounds will be approved by regulatory and reimbursement authorities applying health technology assessments (HTA).

Value categories in HTAs are efficacy and effectiveness, safety, and in some cases health-related quality of life.

Endpoints include mortality, morbidity, and quality of life and costs.

'Softer' criteria such as peace of mind, ease of use, patient preference, handling, etc. are frequently ignored and can even lead to the rejection of the attribute, "innovative". As a result, the so-called incremental research, or step-by-step research, is often viewed as less important and in many cases results in reimbursement at a lower level.

Asthma/COPD management depends on both physicians and patients' acceptance and often on their adherence. From the technical point of view, it is not only the relevant drug, but also the drug delivery system that is important for successful therapy.

But how innovative are drug/device combinations?

Aims and objectives

To illuminate the importance of incremental research patient reported outcomes in asthma / COPD management like peace of mind, ease of use and intuitive handling should be more included in both, HTA endpoints and daily control of successful management.

Methods

An international survey in 9 European countries enrolled 181 health care professionals (HCPs) and 80 patients.

Qualitative face-to-face interviews of 75 minutes (HCPs) and 60 minutes (patients) were conducted to determine the patient preference of two different inhalers (Spiromax and Turbohaler)

Results

Topics covered in the interviews included criteria that influence the HCPs' choice of treatment, such as the device, drug, familiarity and experiences, etc., but also how the prescribing decision is influenced by the type of patient to be treated. For HCPs, the inhaler, drug, familiarity/personal experience, price and the time needed for instruction were factors that influence the HCPs' decision. For patients, peace of mind, easy handling (intuitive), proof of success, and enhanced quality of life are important.

There were only minor differences between countries. The Spiromax was rated more favourably than the Turbohaler (both from the HCP and the patients' view) because of the easier (self-explanatory) and more intuitive handling; 80% of patients and 89% of HCP's found the Spiromax more intuitive. 76% of patients and 87% of HCPs correctly handled the Spiromax without usage instructions. The majority of patients found the Spiromax intuitive or very intuitive.

Conclusions

Intuitive handling (self-explanatory) and improved feedback confirmation of inhalation to give peace of mind may lead to better adherence, less tuition time and greater patient acceptance.

Disclosure of Interest: None Declared

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THE USE OF AN ALGORITHM ON SMOKING CESSATION FOR FAMILY MEDICINE RESIDENTS

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Brief outline of context: Smoking remains to be a major source of concern as it affects the health of many Filipinos. Smoking is a behavior and therefore affected by multiple factors. Simple advice from a doctor has been shown to be significant but not all doctors take this consciously and deliberately. A simple algorithm has been developed to help family doctors as they negotiate with patients curb a habit that has been acknowledged by most governments as a danger to health. The aim of this study is to determine the effectiveness of an algorithm on smoking cessation developed for family doctors compared to usual clinic advice. The major intervention will be the training of family medicine residents on the algorithm.

Brief outline of what change you planned to make: The plan is to modify behaviors of current adult smokers either through brief advice or through a smoking cessation algorithm that highlights recognition of tobacco use as disease, motivation and the stage of behavior change of the patient.

Assessment of existing situation and analysis of its cause: Currently, when family medicine residents ask for the history of tobacco use they merely get the basic facts and just inform patients that it's bad for health. An algorithm developed to increase number of questions asked and propose tools to measure level of tobacco addiction will be used to train family medicine residents how to better intervene when dealing with patients requiring smoking cessation. The algorithm is meant to be used in a primary care setting and formulated to guide the doctor as to what to do depending on the stage of change of the patient.

Strategy for change: who, how, following what timetable: Two strategies are being compared – one brief usual clinic advice and the other a more intensive smoking cessation algorithm based guide – for use by family medicine residents in their clinic. The intervention is given once for the usual advice group but follow up interventions are inherent in the algorithm based one. However, patients in both groups will be monitored after two weeks, one month, 2, 4 and 6 months to check for any changes in behavior and perception about smoking.

Effects of changes: It is proposed that with the use of the algorithm, more smokers will decide to quit. Concomitantly, it is also a means to determine if family medicine residents will be able to better motivate smokers if guided by the algorithm.

Measurement of improvement: A statistical test will be done to check if there is a significant difference between smoking cessation rate of smoking cessation algorithm compared to usual clinic advice to quit smoking.

Lessons learnt: The study has not yet been done and will be presented as a research proposal.

Message for others: Motivating patients to stop smoking is not an easy task. Studies have shown that doctors have a strong potential to increase smoking cessation rates even with a simple and brief advice to quit. Guided by steps based on the stage of readiness of the patient, doctor may be encouraged to utilize a more intensive intervention.

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ORLB-005

US COPD COALITION'S NEW CLINICAL CARE TOOL

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Brief outline of context: The US COPD Pocket Consultant provides new recommendations for COPD case finding, new classifications of severity based on spirometry testing and a compact guide for selecting and modifying therapy that is different from the current 2014 GOLD COPD format.

The enhanced criteria for case finding include symptoms, risk factors and co-morbidities that should lead to further evaluation for COPD, in particular spirometry testing.

Severity domains are based on spirometry results including groups SG 0 through SGU. SG 0 = normal spirometry which may still be consistent with emphysema or chronic bronchitis, SG 1-3 consistent with mild, moderate and severe COPD and SG U which is undefined and may be consistent with restrictive lung disease or muscle weakness.

Therapy selection is based on a grid of SG category, regular symptoms, exacerbations, oxygenation level, Emphysema, chronic bronchitis and co-morbidities.

The pocket consultant includes approved USA therapies (drugs and doses) as well as the mMRC and CAT to facilitate monitoring.

The pocket consultant was developed in conjunction with primary care physicians and has links for patient education --the BIG FAT COPD Guide and trained peer support availability.

Brief outline of what change you planned to make: The Pocket Consultant is the basis for a program to enhance primary care physician and other clinicians ability to include COPD in the patients differential diagnosis, increase case finding activities and to simplify the currently available guidelines.

Assessment of existing situation and analysis of its cause: The need for the pocket guide was based on work with primary care physicians and other clinicians around the USA during educational programs and with focus groups.

The format and breadth of the materials included in one site (paper or online) was directed by the stated needs of the primary care physicians.

Strategy for change: who, how, following what timetable: Who---primary care physicians and other clinicians caring for adults.

How--large pragmatic project introducing the system and pocket guide into primary care practices in USA.

Effects of changes: Improved recognition of individuals at high risk of COPD, appropriate evaluation for case finding and management and follow up linked to patient's condition.

Measurement of improvement: To be studied: rates of COPD correct diagnosis, patient outcomes, appropriate management of COPD with pharmacologic and non-pharmacologic therapy, and physician and other clinicians comfort with evaluation and management of COPD.

Lessons learnt: Lack of evidence for many of the steps in COPD identification and management. Specialists and primary care continue to have differing views on how to advance COPD care in primary care settings.

Message for others: New systems require multiple methods of evaluation. Linking patient support and medical care through one organization, the COPD Foundation offers potential advantages that need to be tested.

Disclosure of Interest: None Declared

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ORLB-006

ASTHMA AND PNEUMONIA AMONG CHILDREN LESS THAN FIVE YEARS WITH ACUTE RESPIRATORY SYMPTOMS IN MULAGO HOSPITAL, UGANDA: EVIDENCE OF UNDER-DIAGNOSIS OF ASTHMA

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Aim: Pneumonia is considered the major cause of mortality among children with acute respiratory disease in low-income countries but may be over-diagnosed at the cost of under-diagnosing asthma. We report the magnitude of asthma and pneumonia among 'under-fives' with cough and difficulty breathing, based on stringent clinical criteria. We also describe the treatment for children with acute respiratory symptoms in Mulago hospital

Methods: We enrolled 614 children aged 2-59 months with cough and difficulty breathing. Interviews, physical examination, blood and radiological investigations were done. We defined asthma according to Global Initiative for Asthma guidelines. Pneumonia was defined according to World Health Organization guidelines which were modified by including fever and, white cell count, C-reactive protein, blood culture and chest x-ray. Children with asthma or bronchiolitis were collectively referred to as "asthma syndrome" due to challenges of differentiating the two conditions in young children. Three pediatricians reviewed each participant's case report post hoc and made a diagnosis according to the study criteria.

Results: Of the 614 children, 41.2% (95% CI: 37.3 - 45.2) had asthma syndrome, 27.2 % (95% CI: 23.7 - 30.9) had bacterial pneumonia, 26.5% (95% CI: 23.1 - 30.2) had viral pneumonia, while 5.1% (95% CI: 3.5 - 7.1) had other diagnoses including tuberculosis. Only 9.5% of the children with asthma syndrome had been previously diagnosed as asthma. Of the 253 children with asthma syndrome, 95.3% (95% CI: 91.9 - 97.5) had a prescription for antibiotics, 87.7% (95% CI: 83.1- 91.5) for bronchodilators and 43.1% (95% CI: 36.9 - 49.4) for systemic steroids.

Conclusion: Although reports indicate that acute respiratory symptoms in children are predominantly due to pneumonia, asthma syndrome contributes a significant proportion. Antibiotics are used irrationally due to mis-diagnosis of asthma as pneumonia. There is need for better diagnostic tools for childhood asthma and pneumonia in Uganda.

Disclosure of Interest: None Declared

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ONCE DAILY TIOTROPIUM RESPIMAT® ADD-ON TO ICS+LABA IMPROVES SYMPTOM CONTROL AND REDUCES EXACERBATIONS IN PATIENTS (PTS) WITH SYMPTOMATIC ASTHMA

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Aim: To evaluate the effect of once-daily tiotropium Respimat® (TioR) 5 µg on lung function, asthma exacerbation and asthma symptom control among pts with symptomatic asthma receiving ICS (≥800 µg/day budesonide or equivalent) + LABA.

Methods: Data were pooled from two replicate, double-blind, placebo-controlled, 48-week, parallel-group studies of once-daily TioR 5 µg vs placebo Respimat® (pboR) (NCT00772538; NCT00776984). Eligible pts had: ≥5-year history of asthma diagnosed before age 40 years; 7-question Asthma Control Questionnaire (ACQ-7) score ≥1.5; experienced ≥1 exacerbation during the previous year. Pts were either lifelong non-smokers, or ex-smokers (<10 pack-years) who quit smoking ≥1 year before study enrolment. Exclusion criteria included diagnosis of chronic obstructive pulmonary disease. Co-primary endpoints in individual trials: peak FEV_{1(0-3h)} and trough FEV₁. A co-primary endpoint in pooled data was time to first severe exacerbation; secondary endpoints included time to first episode of asthma worsening and ACQ-7 response. Post-hoc efficacy analyses were performed.

Results: 912 pts were randomised to receive TioR (n=456) or pboR (n=456). At Week 48, TioR was associated with statistically significant improvements vs pboR in peak FEV_{1(0-3h)} (adjusted mean difference 100 mL; 95% CI 52, 148; P<0.0001) and trough FEV₁ (adjusted mean difference 62 mL; 95% CI 18, 106; P=0.006). Time to first severe asthma exacerbation was significantly longer with TioR vs pboR (282 vs 226 days; respectively, hazard ratio [HR] 0.79; P=0.034), as was time to first episode of asthma worsening (315 vs 181 days; respectively, HR 0.69, P<0.0001). At Week 24, ACQ-7 responder rate was significantly higher with TioR (53.9%) vs pboR (46.9%; odds ratio 1.32, P=0.0427).

Conclusion: Once-daily tiotropium Respimat® add-on to ICS+LABA improves lung function, reduces risk of severe asthma exacerbation and asthma worsening, and significantly improves asthma symptom control compared with placebo Respimat® in pts with symptomatic asthma.

Disclosure of Interest: D. Price Shareholder of: Shares in AKL Ltd which produces phytopharmaceuticals and owns 80% of Research in Real Life Ltd and its subsidiary social enterprise Optimum Patient Care , Grant / Research Support from: UK National Health Service, Aerocrine, AstraZeneca, Boehringer-Ingelheim, Chiesi, GlaxoSmithKline, Meda, Merck, Mundipharma, Novartis, Nycomed, Orion, Pfizer, Takeda, Teva and Zentiva , Consultant for: Almiral, AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Merck, Mundipharma, Medapharma, Novartis, Napp, Nycomed, Pfizer, Sandoz and Teva , Speaker bureau of: Almiral, AstraZeneca, Boehringer Ingelheim, Chiesi, Cipla, GlaxoSmithKline, Kyorin, Novartis, Medapharma, Merck, Mundipharma, Pfizer, SkyePharma, Takeda and Teva , M. Engel Employee of: Boehringer-Ingelheim , P. Moroni-Zentgraf Employee of: Boehringer Ingelheim , H. Schmidt Employee of: Boehringer Ingelheim , R. Dahl Speaker bureau of: Novartis, Boehringer-Ingelheim, GSK, MSD, Chiese, Ache , P. Paggiaro Grant / Research Support from: AstraZeneca, Boehringer Ingelheim, Chiesi, GSK, Menarini, MSD, Novartis, Takeda , Speaker bureau of: AstraZeneca, Boehringer Ingelheim, Chiesi, GSK, Menarini, MSD, Novartis, Takeda , M. Vandewalker Grant / Research Support from: Boehringer Ingelheim , Consultant for: Boehringer Ingelheim , H. Kerstjens Grant / Research Support from: Boehringer Ingelheim, Pfizer , Consultant for: Boehringer Ingelheim, Pfizer, GSK, Novartis, Almiral, Takeda , A. Kaplan Grant / Research Support from: Tiospir investigator (Boehringer Ingelheim), REACT investigator (Takeda), Consultant for: Astra Zeneca, Boehringer Ingelheim, Takeda, Pfizer, Novartis, Aerocrine, Speaker Bureau of: Astra Zeneca, Boehringer Ingelheim, Takeda, Pfizer, Novartis, Merck Frosst, Purdue, Grifols

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REAL WORLD EFFECTIVENESS OF CHANGING FIXED-DOSE COMBINATION THERAPY FROM SERETIDE® MDI TO FLUTIFORM® IN UK ASTHMA PATIENTS

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Aim: To investigate the success of changing fixed dose combination therapy from Seretide® (fluticasone propionate/salmeterol: FP/SAL) to Flutiform® (fluticasone propionate/formoterol: FP/FOR) in asthma patients and compare the characteristics of patients changing therapy with those remaining on FP/SAL.

Methods: Observational study of UK primary care patients from the Optimum Patient Care Research Database changing fixed-dose combination therapy from FP/SAL using a metered dose inhaler to FP/FOR. Patients were aged 12-80 with asthma diagnosis and/or ≥2 prescriptions for asthma therapy 1 year prior to their first FP/FOR prescription. The primary outcome was “change success” defined as ≥70% of patients with ≥1 prescription for FP/FOR in the 6 months following therapy change (not including first prescription). Patient characteristics during the year prior to FP/FOR prescription were analysed and compared with patients prescribed a repeat prescription of FP/SAL (using Mann-Whitney and χ^2 tests where appropriate). Exacerbations were defined as either asthma related hospital or emergency department attendance or an acute course of oral steroids following respiratory review. Differences were considered significant where $p \leq 0.05$.

Results: Of the 164 patients changing their therapy to FP/FOR, 88.4% had at least 1 further FP/FOR prescription 6 months following the change. 164 FP/FOR patients were compared with 6,228 FP/SAL patients and important demographic and clinical baseline characteristics are shown in table 1.

		FP/FOR N = 164	FP/SAL N = 6228	p-value
Age at date of prescription, Median (IQR)		60 (44 – 70)	51 (38 – 65)	<0.001
Sex, % male		46	43	0.456
Current smokers, %		31	17	<0.001
BMI, Median (IQR), kg/m ²		27 (24 – 31)	28 (24 – 32)	0.846
Number of exacerbations, %	0	82	86	0.176
	1	11	10	
	2	7	4	
	+			
Consultations for lower respiratory tract infections (LRTI) resulting in antibiotics, %	0	61	74	0.001
	1	23	16	
	2	16	10	
	+			
Number of ICS inhalers / (ICS inhalers + SABA inhalers), Median (IQR)		1 (0.5 – 0.8)	1 (0.4 – 0.8)	0.339

Conclusion: As the 88.4% rate of FP/FOR patients receiving a second prescription 6 months following therapy change exceeds the pre-set limit of ≥70%, change success was achieved. Patients who were switched to FP/FOR were found to be older, higher chance of being a current smoker and more consultations for LRTI resulting in antibiotics.

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Chiesi, Cipla, GSK, Kyorin, Medapharma, Merck, Mundipharma, Napp, Novartis, Nycomed, Pfizer, Sandoz, Takeda and Teva

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CAN WE IMPROVE THE FOLLOW UP OF ASTHMATIC PATIENTS WITH AN ASTHMA EDUCATIONAL PROGRAM (PAMA)?

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Aim: To determine if PAMA implementation:

- Improves disease control level and patients' quality of life
- Reduces the number of exacerbations and emergency visits due to asthma

Secondary:

- To determine optimal PAMA application frequency

Methods: A 3 years long RCT performed in 10 urban primary care teams, to evaluate PAMA which includes: patient education, asthma control test questionnaire (ACT), explanation of inhalation systems, exacerbation symptoms and treatment action plan, revision of patient's technique and delivery of behaviours to avoid list.

Data were collected by an interview with his doctor or nurse.

Collected data: age, gender, smoking status, asthma severity, treatment, number of exacerbations, additional tests, hospital admissions, asthma control test (ACT) and quality of life test (mini-AQLQ).

Results: 498 asthmatic patients were included and randomized into 3 intervention groups: I: PAMA application every 6 months: 124 patients; II: every 12 months: 120 patients; III: every 18 months: 115 patients and control group: follow-up (with usual management): 139 patients.

The average age was 49 years old (SD 16.4). 72% were women. 36.9% had intermittent asthma, 17.3% mild persistent and 40% moderate persistent, 24.1% presented partially controlled and 5.8% uncontrolled asthma.

47% of patients didn't perform any medical follow-up visit in the last year. 51.4% presented one or more exacerbations in the last year with 0.7 (SD 1.1) average emergency visits for patient. The 35.2% of the asthmatic patients who presented an exacerbation didn't perform follow-up visits in the last year. 55.7% of exacerbations were attended in primary care and 30.9% resolved with self-management or telephonic instructions. The average ACT scoring was 20.9 (SD 4.2), and the global mini-AQLQ 5.7 (SD 1.1).

There weren't differences between groups.

Conclusion: Our asthmatic patients have a good level of control and quality of life but half of them don't have any follow-up visit and have exacerbations. Therefore it's important the implementation of an educational program to improve the management of asthmatic patients.

Disclosure of Interest: None Declared

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EVALUATION OF THE FACTORS THAT INFLUENCE ADHERENCE TO THE CLINICAL PRACTICE GUIDELINE FOR CHILDHOOD ASTHMA IN CHILE: A QUALITATIVE STUDY.

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Aim: Since 2006 is childhood asthma included in the Chilean Explicit Health Guarantees law, for focused prioritization. The corresponding guideline was updated in 2011. Nevertheless, asthma hospitalizations are rising and so is concern of low guideline adherence. No local data report on this specific topic, but internationally numerous publications emphasize low adherence as a relevant obstacle for a better quality of care. We aimed to identify the external factors that may influence adherence and implementation of the guideline and its recommendations at primary care level.

Methods: This qualitative study involved semistructured individual interviews with 30, for maximum variability purposively sampled primary care physicians (from different parts of the country) in Chile. Participants were asked to describe their main perceptions, perspectives and thoughts about their experience with the asthma guideline. Interviews were digitally recorded and transcribed verbatim. Using NVivo © 10, significant themes were identified, extracted and organized into different categories.

Results: 7 categories influencing guideline adherence and implementation were identified as key factors: 1) Level of guideline knowledge, 2) Knowledge paths, 3) Guideline dissemination history, 4) Critical appraisal of the guideline, 5) Applicability at primary care level, 6) Actual meaning of the guideline and 7) Clinical impact of recommendations. Although a general positive perception about the guideline prevails, it is also remarkable that finally the influence in clinical practice is perceived as insignificant.

Conclusion: Findings add to current knowledge about barriers and facilitators for adherence to and implementation of guideline recommendations. Major challenges included appropriate massive dissemination, more practical orientation of recommendations and enhance of pertinence in terms of correspondence between guideline aim and clinical practice context. The provision of detailed online intervention protocols and manuals may help clinicians to overcome the clinical impact barrier. Inclusion of primary care and family physicians in guideline development may improve pertinence and applicability.

Disclosure of Interest: None Declared

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POLB001-THU

THE PRIVATE PUBLIC MIX (PPM) TUBERCULOSIS PROGRAM ,PESHAWAR PAKISTAN

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Aim: The Private Public Mix Tuberculosis Program has been launched in peshawar on empirical grounds by GTZ as a pilot project. The AIM was total eradication of Tuberculosis which has caused significant mortality and morbidity in community. Basic health care providers, like general practitioners and Family physicians were involved actively in PPM, **Methods:** In the ongoing project patients and their attendants in community will have a convenient approach to their basic health care providers (General practitioners and Family physicians) with an additional advantage of short distance to travel, less frequent visits and waiting periods. It is imperative to train basic health providers about TB control program and DOTS strategy regarding patient registration, diagnosis (TB7) sputum conversion (TB8) and treatment outcomes (TB9). Patients are subjected to free diagnostic and therapeutic followup, sputum conversion 2/3, 5, 7, months of their visit with standard free drugs.

Conclusion: PPM seems to have a significant impact on the control of Tuberculosis in the community, consistency in this motive is imperative in improving its implications as this is the only solution in countering the problem of Tuberculosis infection if applied in its true spirit.

Disclosure of Interest: None Declared

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RIGHT PRESCRIPTION OF INHALATION DEVICES DEPENDING ON THE INSPIRATORY FLOW RATE OF THE COPD PATIENT

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Aim: Estimate the prevalence of prescription inhalation device unsuitable to inspiratory flow rate of COPD patient. Assess inhaler technique. Describe associated variables.

Methods: Design: Multicenter, observational, descriptive, cross-sectional study that aims to estimate what percentage of COPD patients is treated with used for a device which doesn't have sufficient inspiratory flow.

We intend to measure inspiratory flow in our patients and compare it with the minimum flow required for inhalation device, so that we understand the requirement of the device is inadequate if our patient has inspiratory flow below the minimum required for each device. It aims to assess inhalation technique and describe the variables associated with patient and prescriber.

Scope: It will be developed in the field of primary care.

Subjects, sampling and sample size: We will include COPD patients to selected health centers who are being treated with inhalation devices. To ensure equiprobabilistic sample, similar to that of the study population variability, we propose a systematic random sample of all patients with COPD. 435 select accepting a confidence level of 95% with a sampling error of $\pm 5\%$ and considering a level of 50% non-response subjects. As it is not known the prevalence of inappropriate prescribing of inhalation devices, the worst situation ($p = q = 50\%$) is assumed. Variables. Evaluate the patient's inspiratory flow, assessment of inhalation technique, staging bodec, CAT scale, annual exacerbations, anthropometric variables and variables of the prescribing physician.

Results: Statistical Analysis: Determinations descriptive statistics, measures of central tendency and dispersion will. In inference, measurement partnerships through hypothesis testing. Bivariate analysis with the chi-square test between qualitative and ANOVA for quantitative variables. Multivariate analysis with a binary logistic regression model was performed.

Limitations: The inherent design. For the sample calculation we considered the worst situation (prevalence = 50%), even if it means a higher number of patients. We adjusted the maximum acceptable error for the highest accuracy. Voluntary participation is a limitation not avoidable. The study is consistent to meet objectives, but could not determine the predictive capability of presenting an inadequate device, although the results can serve to initiate working hypotheses that attempt to demonstrate a causal link between the variables.

Conclusion: Knowledge of the use of an inappropriate device capabilities of patients to identify opportunities for improvement in the therapeutic approach by the primary care physician and to improve the most efficient use of treatment resources.

Disclosure of Interest: None Declared

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SURVEY OF 7 STEPS PATIENT PASSPORT FOR COPD IN PRIMARY CAREStephen Gaduzo^{*1}, Dominic Gaduzo¹¹NHS Stockport, Stockport, United Kingdom

Brief outline of context: We have previously reported the development of a “Patient Passport” describing the 7 Steps to best COPD care. (Roberts, poster ERS 2013) A survey on the British Lung Foundation (BLF) website’s patient forum showed significant shortfall in the standards patients felt were delivered in primary care. (Gaduzo, poster ERS 2013)

Brief outline of what change you planned to make: We wondered if the self-selected group in the BLF website survey may have produced a bias in the survey, so decided to repeat it in a whole COPD population in primary care.

Assessment of existing situation and analysis of its cause: The Patient Passport is a potentially powerful, patient-held summary of standards of care. Cheadle Medical Practice is a suburban general practice in the northwest of England, with a population of approx 11,700 patients and COPD prevalence of 1.6%. We wanted to see what our patients thought of the care we provide.

Strategy for change: who, how, following what timetable: We conducted a postal survey of all our COPD patients. They were sent an introductory letter, a survey page asking them to tick which of the 7 items they felt the practice had successfully delivered, and a self-addressed return envelope. No reminders were sent, data was collated after 4 weeks.

Effects of changes:

183 sent, 117 responses (64%)	Number	%
Diagnosis confirmed by QA spirometry	115	98
Supported to manage my COPD	101	86
Smoking cessation with support	75	64
Activity, exercise, pulmonary rehabilitation	71	61
Medicines, Inhaler technique	113	97
Written action plan, Rescue medication	62	53
Annual structured review by GP/PN	107	91

Measurement of improvement: The high response rate (64%) suggests a motivated, informed population. Results suggest we perform well in the eyes of our patients, especially in diagnosis, inhaler technique and review.

Lessons learnt: This was an unbiased, whole population, postal survey suggesting good levels of care. Some areas need clarification. EG: 10 patients said the smoking cessation question was not applicable because they had given up years before. 8 patients said they had not been referred to pulmonary rehabilitation because they were active or still working, their response suggests the subject had in fact been discussed. Some areas suggest we could do better.

Message for others: A patient held summary of the principles of good care can be a powerful motivator for improvement. This survey suggests good levels of patient satisfaction and informs us on areas in which to target our future efforts.

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POLB004-THU

THE ROLE OF GP TO IDENTIFY CAUSE OF CONTINUING SMOKING IN RURAL AREA

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Aim:

To evaluate the smoking habit in the randomised sample of rural population and to compare with pre-smokers as well to describe their attitude about smoking cessation.

Methods: This study used data sourced from questionnaire in 616 consecutive patients in our surgery. [406 (65,6%) males, 210 (34,1%) females; mean age: 62.01+_ 15.57 years; range: 18-89 years]. Smoking habits, age onset smoking, pack per years, symptoms of respiratory system due smoking, smoking cessation efforts, smoking cessation reasons and smoking cessation desire also analyzed

Results: Three hundred seventy nine (61,5%) of them were smokers;192 currently and 187 ex-smokers. The mean age onset of smoking was 18.66+_6.14 years, and pack years was 28,4+-. Symptoms of respirator system (cough, sputum production, breathlessness), were significantly appeared in smokers (65%) vs 1,61% . Pre-smokers stopped smoking at 44,5+_ 4,2years old .The smoking cessation reasons were 57,6% health's reason, 27,41% individual reasons, 11,04% doctors advise, 3,95% financial reasons. They stopped smoking mean efforts 3,5+-1.2. 57% of smokers wanted to interrupt smoking with 3,8 +_ efforts and 43% didn't want it with 2,7 +_ 1,3 efforts and felt frustrated.

Conclusion: The impact of smoking in health is well-known, however many times doctors don't consider patients feelings like frustration barrier for smoking cessation. The role of primary care is essential to provide multidisciplinary approach in smoking cessation effort.

Disclosure of Interest: None Declared

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EVALUATION OF THE CHILDHOOD ASTHMA GUIDELINE IN CHILE. A CRITICAL ANALYSIS OF THE GUIDELINE AND RECOMMENDATIONS DEVELOPMENT PROCESSES.

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Aim: In 2004, the Chilean Ministry of Health (MoH) issued the childhood asthma national guidelines in the context of the health reform process in the country. Numerous publications have reported low guidelines compliance. Different strategies have been used to improve adherence. One line of research has focused on the intrinsic factors inherent to the guideline and recommendations development processes and their relationship to adherence. One of the most validated tool for guideline quality assessment is the AGREE II instrument. Recent studies have also identified intrinsic attributes of the recommendations that could influence their application in patient care. Our aim is to critically assess the quality of the childhood asthma guideline and recommendations development processes.

Methods: Descriptive study of the Chilean asthma guideline in two stages:

Stage 1: Critical analysis of the latest guideline version (2011) using the **AGREE II instrument** by two independent reviewers and a third reviewer to resolve disagreements

Stage 2: A two-round Delphi technique via email correspondence evaluating the recommendations looking for the presence of intrinsic attributes identified in the international literature (nature of the recommendation, executability, complexity, flexibility, experimentability, observability and clinical validity) with a likert-type 9-point scale.

Results: AGREE II assessment:

Domains	Score for 2 Appraisers*
Domain 1 - Scope and Purpose	58%
Domain 2 - Stakeholder Involvement	39%
Domain 3 - Rigour of Development	40%
Domain 4 - Clarity of Presentation	69%
Domain 5 - Applicability	17%
Domain 6 - Editorial Independence	42%
Domain 7 - Overall Guideline Assessment	4**

*(percentage of the maximum possible score).

** (1=Least Quality - 7=Highest Quality)

Intrinsic attributes of the recommendations assessment according to likert-type 9-point scale (percentage of recommendations in each categories) :

Intrinsic attribute	Low (1-3)	Uncertain (4-6)	High (7-9)
Executability	35%	48%	17%
Complexity	48%	48%	4%
Flexibility	4%	83%	13%
Experimentability	0%	22%	78%
Observability	9%	35%	56%

Conclusion: Overall, the guideline received a low quality score with applicability as the worst evaluated domain. The guideline recommendations were characterized by low executability, low complexity, high experimentability and high observability.

There is a significant room for improvement in the guideline and recommendations development processes, in order to improve their application in the clinical care of children and adolescents with asthma in Chile.

Disclosure of Interest: None Declared

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THE INFLUENCE OF PARENTAL AND FRIENDS SMOKING IN SMOKING HABIT

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Aim: Smoking is a major risk factor of mortality and morbidity of many diseases Cessation is truly difficult but is essential to stop this habit in the early stages. In this study we evaluated the impact of familial and non familial smoking on the onset and dependence of smoking.

Methods: A total of 616 randomized sample of population [406 (65.6%) males, 210 (34.1%) females; mean age: 62.01 ± 15.57 years; range: 18 – 89 years] were investigated. Smoking habits, age that smoking started, pack per years and quitting smoking were analyzed in relation to the presence of smokers in the family or among friends. Multivariate linear and logistic regression models were used to assess the independent effect of the presence of smokers in the family or among friends on the herein studied parameters.

Results: Three hundred seventy nine (61.5%) of them were smokers; 192 currently and 187 ex-smokers. They started smoking at a mean age of 18.66 ± 6.14 years, while the median amount of smoking, expressed as pack per years, was 30 (25th to 75th percentile, 15 to 47). Smoking was significantly associated with male gender (aOR=17.14, p<0.001) and the presence of at least one smoker in the family (aOR=1.65, p=0.021), but not with a smoker among friends (aOR=1.36, p=0.187). Among smokers, the presence of at least one smoker in the family was associated with older age of starting smoking (19.3 vs 16.5 years, p<0.001), while the presence of a smoker among friends was associated with younger age of starting smoking (16.9 vs 18.9 years, p=0.008). Pack-years were independent of having smokers in the family (p=0.695) or among friends (p=0.537). Quitting smoking was more frequent among smokers without any smoker in the family (aOR=1.70, p=0.015).

Conclusion: Most of the smokers are influenced to maintain smoking, because there is at least one member of their family who is smoker. Another less significant factor to maintain smoking is that one of their friends is smoker, in which case they start smoking at younger age. The absence of parental smoking is related with quitting smoking more frequently.

The role of family doctors is of major importance in order to implement the policy of avoiding and preventing smoking It is the key factor in order to cooperate with the family.

Disclosure of Interest: None Declared

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DIFFERENCES IN DISEASE BURDEN BETWEEN PATIENTS WITH CONTROLLED AND NON-CONTROLLED ALLERGIC RHINITIS AND/OR ASTHMA FROM THE GENERAL POPULATION OF LISBON AND PORTO

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Aim: Our aim was to compare the disease burden (disease-specific QoL, work impairment and unscheduled medical visits) between controlled and non-controlled patients with allergic rhinitis and asthma (ARA) or rhinitis only.

Methods: We present data from the on-going observational nationwide cross-sectional study ICAR - Control and Burden of Asthma and Rhinitis (PTDC/SAU-SAP/119192/2010). Standardized questionnaires (CARAT, MiniAQLQ, MiniRQLQ, WPAI) were used. ARA was considered controlled when CARAT's global score was > 24 and rhinitis when CARAT's nasal score was > 8. Diagnosis was established by clinical interview and objective diagnostic tests.

Results: A total of 518 adult participants were included in Lisbon and Porto, the two largest Portuguese cities (32% of the Portuguese population). Participants with rhinitis (n=249) and ARA (n=106) were selected for the analysis. Most were females (231, 65%) with mean (SD) age of 41.1(14.9) years old. Only 19% (n=56) had their diseases controlled; corresponding to 21% (n=40) of the rhinitis patients and 16% (n=16) of the ARA patients. Controlled Rhinitis and ARA patients had lower miniRQLQ score than the non-controlled, indicating better quality of life (mean(SD): 0.5(0.5) vs 1.5(1.1), respectively; p<0.001) and controlled ARA patients had higher miniAQLQ score, indicating better asthma-related quality of life than the non-controlled (6.7(0.5) vs 5.8(1.0), respectively; p=0.007). Regarding WPAI-AS overall work impairment assessed, controlled patients had less impairment than the non-controlled (mean%(SD): 0,0 (0.0) vs 5.1(15.0), respectively; p<0.001). Because of their allergic disease, in the last 12 months, 40(14%) patients had at least one unscheduled healthcare utilization; of these, 18(0.5%) had rhinitis only and 6(15%) were controlled.

Conclusion: The control of Rhinitis and ARA is related with less disease burden, in terms of work impairment and of life but not in what refers unscheduled healthcare utilization.

Disclosure of Interest: None Declared

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POLB008-THU

TIME TRENDS AND FACTORS ASSOCIATED WITH ASTHMA ADMISSIONS IN ENGLAND BETWEEN 2004 AND 2012: A NATIONAL OBSERVATIONAL STUDY

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Aim: Lists of ambulatory or primary care-sensitive conditions, including asthma, for which hospital admissions may be avoided by high quality primary care, have been produced by expert consensus for national and international comparisons.

We aimed to determine time trends in emergency admissions for asthma between 2004-5 and 2011-12 in England and the effect of population and primary care factors.

Methods: National observational cross-sectional study of the English population during the period 2004-2012. We combined data on hospital admissions with primary healthcare staffing, clinical quality and access indicators, and practice deprivation scores and asthma prevalence. Negative binomial regression models were fitted to model the associations of explanatory variables with general practice admission incidence rate ratios.

Results: There were 399,139 emergency asthma admissions in 8 years over 55 million patients. Admissions decreased by 48% (IRR 0.593; $p < 0.001$) between 2004 and 2012. Deprivation (IRR 1.015; $p < 0.001$) and asthma prevalence (IRR 1.018; $p < 0.001$) were risk factors for admission, while GP supply (IRR 0.999; $p < 0.017$) and access to non-urgent care (IRR 0.999; $p < 0.001$) were protective.

Conclusion: Associations of admission rates with deprivation and GP supply highlight the need for adequate primary care provision in deprived areas. However, some of the reduction in asthma admissions cannot be fully explained by the factors included in our analysis, and may be the result of public health legislation introduced in 2007. The potential to further reduce admissions by improving the clinical quality of primary healthcare may be limited, and other public health measures should be explored.

Disclosure of Interest: None Declared

THE CERTIFICATION OF ALLERGY-, ASTHMA- AND COPD-CLINICS IN PRIMARY CARE IN SOUTHERN SWEDEN

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Brief outline of context: In 2014 the asthma- and COPD- clinics in Skane had to apply for certification to be registered on the 1177 (the Swedish health care guide). The national criteria for asthma / COPD clinics from 2008 have been used. The certification requirement has led to higher educational level and increased patient time.

Brief outline of what change you planned to make: The aim of certification was to ensure the quality of care regarding the patients with asthma, allergy and COPD in primary care in Skane, Sweden.

Assessment of existing situation and analysis of its cause: In primary care asthma, allergies and COPD are common diseases with increasing prevalence, causing both human suffering and huge costs for society. A structured treatment with well-functioning asthma- and COPD-clinics has been found to improve the care of these patients.

Strategy for change: who, how, following what timetable: The certification process was assigned the Allergy Competence Centre, Skane University Hospital, Lund. The requirements stipulated followed the national criteria for asthma / COPD clinics from 2008. Since the first of January 2014 only certified asthma, allergy and COPD clinics could be listed on the 1177 (the Swedish health care guide).

The Asthma and COPD nurse should have at least 15 credits (Bolonga) in the field of asthma, allergy and COPD and a continuous training in the disciplines. The dedicated time for the nurse should be at least 2 hours a week per 1,000 listed patients and the nurse should perform structured patient education.

A specialist in general medicine with continuous education in asthma, allergy and COPD should be medically responsible for asthma, allergy and COPD clinic.

Both the nurse and the general practitioner must have completed the “ **Spirometry driving license**” (a Swedish national education program in spirometry).

The clinic should offer support for smoking cessation and have an established cooperation with a physiotherapist. A spirometer, pulse-oxygenometer, oxygen and equipment for nebulization shall be available at the clinic. The clinics should perform structured examination and treatment of allergy-, asthma- and COPD- patients, including lung function measurements and allergy testing.

The Swedish Airway Registry should be used by the clinic.

Effects of changes: The first of January there were six clinics qualified but already after 3 months forty clinics fulfilled the criteria. The education in asthma and COPD for nurses (15 credits Bolonga) which previously had been set in Skane due to little interest has now thirty-two nurses in training 2014.

Measurement of improvement: Patient time and the clinics availability for patients has increased. An increasing number of the staff are trained in spirometry. The connection to "The Swedish Airway Register" has increased.

Lessons learnt: Certification of the asthma and COPD clinics in Skane has resulted in more time devoted for these patients, and the educational level in allergy asthma and COPD has increased

Message for others: By certifying asthma and COPD clinics both education level and dedicated time for patients can be increased.

Disclosure of Interest: None Declared

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INVESTIGATION OF OBSTRUCTIVE SLEEP APNEA IN OVERWEIGHT AND OBESE INDIVIDUALS IN PRIMARY CARE

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Aim: Introduction: Obstructive Sleep Apnea (OSA) is a common but under-recognized medical condition, especially among overweight and obese individuals of the general population. Its major symptoms are: snoring and apneas at sleep accompanied by excessive daytime sleepiness (EDS). Different questionnaires have been validated as screening tools for OSA. Aim of the study was to compare the prevalence of suspected OSA, as assessed by scoring of 3 different questionnaires [Berlin Questionnaire (BQ), Stop Bang Questionnaire (SBQ) and Epworth Sleepiness Scale (ESS)] between normal-weight individuals and overweight/obese individuals.

Methods: Included were 135 individuals (71 males, 64 females), who consecutively visited a primary health care setting in a rural area of northern Greece. Exclusion criteria were diagnosis of a sleep disorder, inability or unwillingness to participate. Based on BMI they were divided into 2 groups: Group A (BMI < 25 Kg/m²) and Group B (BMI > 25 Kg/m²)

Results: Mean age was 59.7±12.4 years and mean BMI was 29.9±4.3 Kg/m². Reported sleep duration was 6.7±1.4 hours. Mean ESS score was 4.6±3.8, mean SBQ score was 3.2±1.5 and 38.5% of participants had a BQ indicative of OSA (i.e. responded positively at 2 out of the 3 categories). No difference between males and females in terms of age or BMI was observed. Comparisons between BMI-based groups revealed the following: No difference in age (p=0.773), sleep duration (p=0.412), smoking habit (p=0.565) and alcohol use (p=1.000) was observed. A higher prevalence in BQ with scores indicative of OSA was observed in group B (42.6% vs. 15%, chi-sq. 5.484, p=0.024). Likewise, a higher prevalence in SBQ with scores indicative of OSA was observed in group B (66.1% vs 30%, chi-sq. 9.364, p=0.005). On the other hand, prevalence of individuals with EDS (ESS≥11) did not differ (p=0.358).

Conclusion: Among patients in primary care, OSA prevalence, according to BQ and SBQ, is significantly higher in overweight and obese than normal-weight individuals of comparable age; while prevalence of EDS does not differ.

Disclosure of Interest: None Declared

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SELF-REPORTED SMOKING HABITS COMPARED WITH CARBON MONOXIDE IN THE EXHALED BREATH IN HEALTHY ADULTS FROM A POPULATION-BASED SAMPLE

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Aim: We aimed 1) to determine the agreement of self-reported smoking habits in two different settings: at the lung function laboratory (LFL) and during a clinical interview (CI) by a physician, and 2) to compare the self-reported smoking habits with objective measurement of carbon monoxide in the exhaled breath (eCO).

Methods: We selected healthy adults from a population-based sample, included in the study ICAR – Control and Burden of Asthma and Rhinitis (PTDC/SAU-SAP/119192/2010, funded by Fundação Ciência e Tecnologia). Healthy was defined as absence of respiratory and other chronic diseases. Exhaled CO was defined as the mean of 3 consecutive measurements in ppm with a MicroCO (Carefusion, USA), recoded as ≤ 6 ppm (non-smoker) and > 6 ppm (smoker) and defined as the gold-standard. Participants were classified in current smokers and non or ex-smokers (quitted more than 6 months ago) at the LFL and during CI. Agreement between categorical variables was computed using Unweighted Cohen's Kappa.

Results: We've analyzed 95 subjects, mean (SD) age 40(13.9) years, with 50 (52%) females and 23 (24%) smokers. Mean (SD) eCO in smokers vs. nonsmokers was 7.91(6.74) vs. 1.88 (1.28) ppm ($p < 0.001$). Unweighted Kappa (95%CI) between self-reported smoking habits in the LFL and during the CI was 0.14 (0.06-0.21), between LFL and eCO was 0.53 (0.31-0.74) and between CI and eCO 0.04 (0-0.10). Sensitivity and specificity (95% CI) of self-reported smoking habits at LFL were 84.6% (54.5-97.6) and 85.3% (75.8-92.2) and during CI were 20.7% (12.6-31.1) and 92.3% (63.9-98.7), respectively.

Conclusion: The accuracy of self-reported smoking habits seems to be dependent of the setting, with the poorest results being during the clinical interview, apparently due to inaccurate reports from smokers. This should be taken in account when interviewing patients in whom smoking habits are of key relevance for the diagnosis and prognosis of respiratory diseases.

Disclosure of Interest: None Declared

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POLB001-SAT

A RAPID SYSTEMATIC REVIEW OF THE EVIDENCE FOR SMOKING CESSATION INTERVENTIONS IN PATIENTS WITH SCHIZOPHRENIA AND DEPRESSION

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Aim: A rapid systematic review of the evidence for smoking cessation interventions in patients with schizophrenia and depression. What might work?

Methods: We conducted a systematic literature review of smoking cessation interventions for patients with schizophrenia and depression in electronic databases, including Medline, Uptodate and the Cochrane Tobacco Addiction Group. Mesh terms used: "Mental Disorders and Smoking Cessation". Search for systematic reviews (SR) and Randomized Controlled Trials (RCTs), published in the last 5 years. No language restrictions.

Results: Of 413 initial search hits, we included 4 SR, 4 RCTs and 2 Cochrane Summaries. Study quality was variable and interventions heterogeneous. Were included RCT and SR designed exclusively for smoking cessation in patients with schizophrenia or depression.

Of the 4 RCTs, 3 were about the use of varenicline for smoking cessation in schizophrenia, safety and effectiveness (1), safety and efficacy (2). Last RCT was design to evaluate the effects of varenicline in patients with current or past depression.

3 of the SR included were about the evidence for safety and efficacy of bupropion (2) and varenicline (1) for smoking cessation in schizophrenic patients. The other SR compared effectiveness of smoking cessation strategies for patients with depression.

Bupropion: Rates of smoking cessation in schizophrenia patients were higher with bupropion than with placebo at 6 months. The adverse effects were similar to general population, and mental state was stable. For patients with history of depression, not for those with current depression, is a therapeutical option . There is no evidence for the use of other antidepressants in smoking cessation in depressive patients.

Varenicline: Is suggested as an option in schizophrenia stable patients for whom it showed superior efficacy compared with placebo for the 12 weeks treatment. However Cochrane mention adverse events including suicidal ideas. In depressive patients appears to increase smoking cessation in smokers with stable treated current or past depression.

Nicotine replacement or psychosocial interventions: We did not found any evidence for schizophrenic patients regarding this two interventions. For patients with depression nicotine replacement demonstrated small positive effects on smoking cessation rates. Psychosocial interventions, learning how to control depressive symptoms, were effective.

Conclusion: The lack of RCTs and their heterogeneity, for smoking cessation among adults with depression and schizophrenia, makes it difficult for us to answer our initial question. However some clues were found and the need for further high quality research is mandatory.

Depressive patients, possible options: Varenicline, Bupropion and Psychosocial interventions/ Schizophrenic patients, possible options: Bupropion, Varenicline?

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DETERMINANTS OF ANNUAL CHANGE IN PEAK EXPIRATORY FLOW RATE (PEFR) AND PEAK INSPIRATORY FLOW RATE (PIFR) VALUES IN A COHORT OF INDIAN CHILDREN AGED 4-10 YRSSneha S. Limaye¹ and Symbiosis PEFR Study workgroup¹Clinical Research, CHEST RESEARCH FOUNDATION, Pune, India

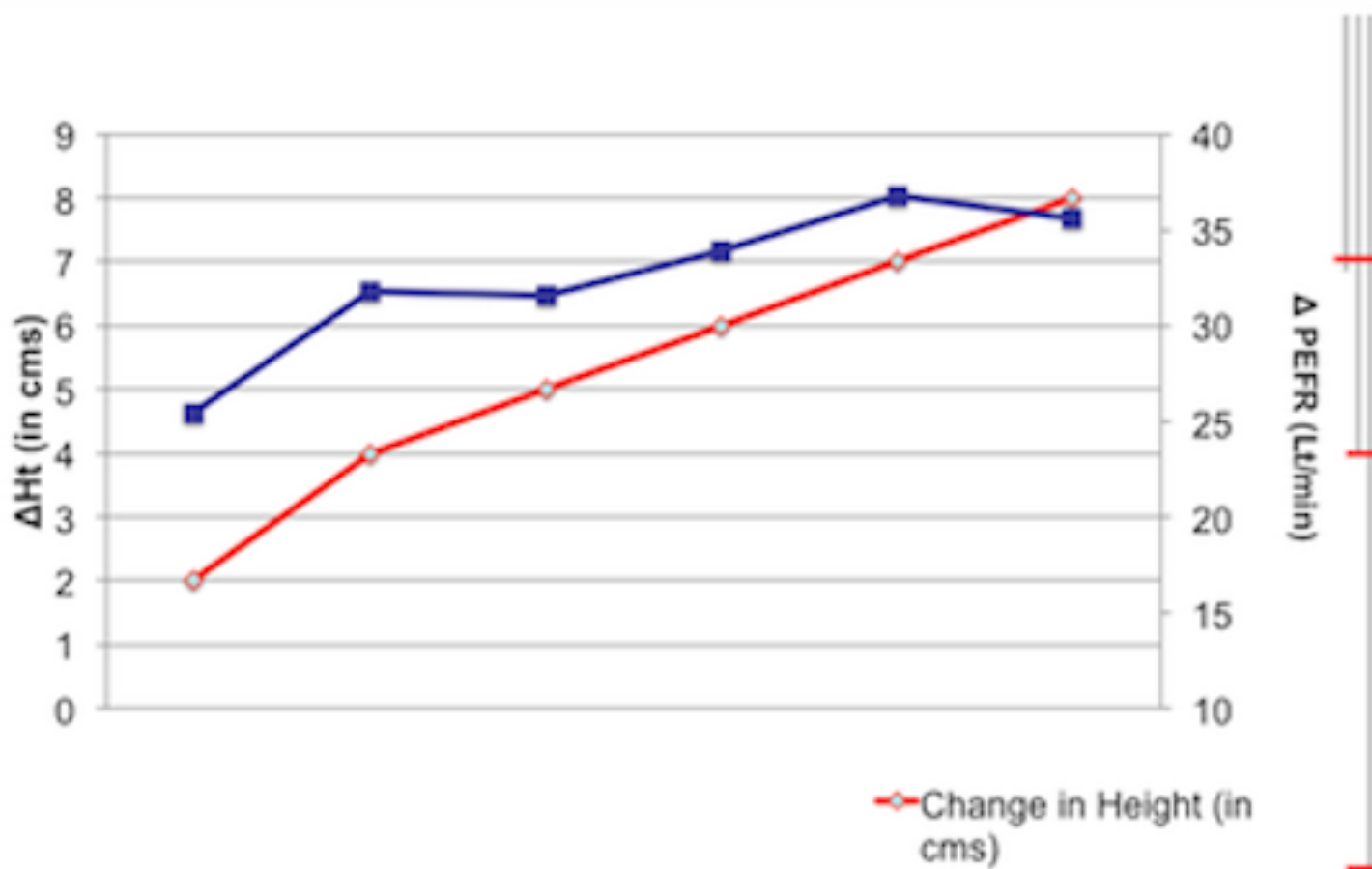
Aim: Determinants of annual change in peak expiratory flow rate (PEFR) and peak inspiratory flow rate (PIFR) values in a cohort of Indian children aged 4-10 yrs.

Methods: PEFR and PIFR were measured for 2 consecutive years in a cohort of 813 children (467 boys, 356 girls) after obtaining a written informed consent from their parents. Height, weight and age of every child was recorded by trained medical nurse. PEFR was measured by an EU scale peak flow meter [Breathometer \dot{O} , Cipla Ltd, India] and PIFR was measured by Clement Clarke Peak Inspiratory Flow Meter, UK. Best of 3 acceptable readings were used for analysis.

Results: Change in height was the major determinant of change in PEFR [Fig 1] whereas, change in PIFR did not correlate with height significantly. Change in age and weight did not have any impact on either PEFR or PIFR values.

Image:

Fig 1 - Determinants of PFFR growth in children



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Conclusion: Increase in height [growth of a child] is a major determinant of increase in their lung functions.

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POLB003-SAT

COPD SCREENING: VALIDATION OF THE IPAG QUESTIONNAIRE AND PIKO-6® FLOW METER IN THE PRIMARY CARE SETTING

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Brief outline of context: It seems that COPD is under diagnosed and misclassified at PHC level. Main reasons for this are several:

- Until recently, the lack of clinical guidelines, and inefficient use of the same

- Insufficient education of doctors about the severity of the problem

- Lack of proper "instrument" and equipment to diagnose disease

- Administrative problems

The Aim of our research is to investigate the usefulness of International Primary Care Airways Guidelines (IPAG) questionnaire and PiKo-6R (Ferraris Respiratory Europe Ltd.) flow meter as screening tools for diagnosing chronic obstructive pulmonary disease (COPD) in the primary care setting.

The research is designed as randomised control study within primary care practices. Two groups of doctors will be involved: intervention and control group

The first 40 patients in 20 general practice offices, aged >40 years who visited each GP during the period 1 September to 30 November will be included in the study.

Brief outline of what change you planned to make: To improve early and accurate diagnosis in primary care settings by using of simple screening methods

To establish use of clinical guidelines for diagnosis and prescribing

Assessment of existing situation and analysis of its cause: COPD is underdiagnosed and misclassified at PHC level.

Main reasons were several:

- Lack of clinical guidelines

- Insufficient education of doctors about the severity of the problem

- Lack of proper "instrument" and equipment to diagnose disease

- Administrative problems

Strategy for change: who, how, following what timetable: Improve early and accurate diagnosis of COPD in primary care settings

- Reduce number of medical visits

- Reduce total costs of treatment

- Increase patient satisfaction

Effects of changes: COPD will be properly diagnosed and treated in primary care settings

Measurement of improvement: We expect that primary care physicians will accept the use of IPAG questionnaire and Pi-Ko 6R flow meter in every day practice

Lessons learnt: It is yet to be concluded after analyzing the results of the research

Message for others: We hope that after this research, will increase the awareness of proper diagnosis and treatment of COPD in primary care settings

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