

ABSTRACTS

IPCRG International Scientific Conference 5th June 2009, Stansted airport, UK Abstracts selected for the *PCRJ*

1. Pilot study of a population cohort for the study of COPD and OSAS in the Balearic population: The PULSAIB study

Román M, Yáñez A, Renom F, de la Peña M, Gómez A, Duro R, Soriano JB

Atención Primaria Ibsalut Fundación Caubet-Cimera

Aim: There are no population studies that describe the natural history of chronic obstructive pulmonary disease (COPD) and obstructive sleep apnea syndrome (OSAS). Their frequency and distribution in the Balearic Islands are unknown. We conducted a pilot study of a future population cohort in the Balearic Islands, the PULSAIB study, to investigate the natural history of COPD, OSAS, and other common chronic diseases.

Method: Cross-sectional study. 350 participants 30 years and older, in two areas, rural and urban. Sociodemographic and clinical questionnaires, forced spirometry with PBD test, portable polygraphy, EKG, and blood extraction were conducted.

Results: The participation rate was 53%: 175 participants from the municipality of Bunyola and 130 from the area of Son Pizà Health Center in Palma. Prevalence of COPD (FEV₁/FVC ratio <0.70 PBD) was 12.8% (95% CI 8.5%-18.2%), 20% in men and 5% in women. Prevalence of OSAS (apnea-hypopnea index (AHI) > 10/hour) was 35.9% (95% CI 25.3%-47.6%), 42% in men and 29% in women.

Conclusion: We conclude that setting up a cohort study in the Balearic population is doable, expanding in number and following up in time the participants of this pilot study, all aimed to investigate the natural history of the two most common chronic respiratory diseases, COPD and the OSAS.

Conflict of interest and funding: Fundings by Balearic Government 12-2006 Research Emerging Groups.

2. 'A way of life'. Findings from a longitudinal qualitative study of people with end-stage COPD.

Pinnock H, Murray S, Worth A, Porter M, MacNee W, Kendall M, Levack P, Sheikh A.

Allergy and Respiratory Research Group, Centre for Population Health Sciences: GP Section, University of Edinburgh.

Aim: Globally, there is increasing interest in the provision of palliative care services for people with COPD (IPCRG Opinion sheet 4). In the UK, primary care clinicians are encouraged to include people with very severe COPD on palliative care registers to facilitate provision of end-of-life care.

Method: We conducted serial in-depth interviews over 18-months with people with severe COPD and their nominated informal and professional carers to identify their clinical, information, psycho-social and spiritual needs. Interviews were transcribed and analysed thematically.

Results: 21 patients (7 died during the study) and their social and professional carers, provided 130 interviews. Severe symptoms causing major disruption to daily life were described in the context of deprived social circumstances which patients often felt powerless to change. Particularly striking was that COPD was perceived as a 'way of life' rather than an 'illness'. The insidious development of symptoms over a lifetime of smoking made it impossible for patients to describe the beginning of their condition, although significant milestones (e.g. diagnosis, first admission) were highlighted. Clinicians had reservations about identifying the 'moment' when palliative care became

appropriate in a condition which typically spanned decades.

Conclusion: Acceptance of COPD as 'a way of life' by patients, in the context of seemingly insurmountable social difficulties, has important implications for healthcare professionals. Identifying a time point for inclusion on a palliative care register may be impossible and potentially counter-productive if it obstructs provision of holistic care.

Conflict of interest and funding: Chief Scientist's Office, Scottish Government. HP is supported by a PCRA from the Chief Scientist's Office of the Scottish Government.

Published or submitted elsewhere: Conference submission: European Respiratory Society 2009.

3. Technique training does not improve the ability of most patients to use pressurised Metered Dose Inhalers (pMDI)

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Aim: pMDI technique should be tested in all asthmatic patients.¹ We assessed uncontrolled asthma patients ability to learn to use a pMDI using the Aerosol Inhalation Monitor (AIM, ©Vitalograph) which tests inspiratory flow, synchronisation and breathholding.

Method: Patients were clinically reviewed by trained asthma nurses, according to practice protocols. After agreeing a proxy measure of asthma control (prescribed rescue bronchodilators), selected patients completed postal symptom questionnaires. (RCP 3Q)¹ Symptomatic patients were invited for a clinical review, including inhaler technique. Those patients using pMDIs had at least two assessments. Technique education was provided after testing if appropriate.

Results: 2123/8843 (24%) symptomatic patients from 100 practices caring for 30779 asthmatics (prevalence 6.9%) were assessed by nurses between 1/4/2008 and 30/6/2008. (Data available for 2112 patients). 1291/2112 (61%) were using pMDI's (mean age 52 years; SD 21.37). 685 (55.4%) and 368/1236 (29.8%) were in BTS steps two and three respectively. 1092/1275 (85.6%) using pMDIs, failed the first AIM test. After instruction the number of patients able to use their pMDIs correctly increased after the second (129 to 260 of 1197 patients, p<0.01) and third (61 to 181 of 528 patients, p<0.01) tests. 909/1197 (76%) and 323/527 (61.3%) patients tested twice and three times respectively, failed on these subsequent attempts, despite instruction. No effect of age and BTS step on these outcomes.

Conclusion: Despite training a significant majority of symptomatic asthma patients are unable to use pMDIs correctly.

Reference:

1. Douglas G. *et al. Thorax* 2008; **63**(Suppl. 4):iv1-iv121.

Conflict of interest and funding: The EACS service is an independent nurse service sponsored by TEVA UK Limited.

Published or submitted elsewhere: Conference submission: BTS Winter Conference 2008.

4. Effect on health care costs of an asthma education intervention in primary care

Cave A, Bhanji N, Makarowski C

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Aim: To assess the impact on direct health care costs of asthma education delivered in the family physician's office.

Method: A site-randomised, unblinded controlled study of an educational intervention for asthma. 85 Family Physicians (FPs) in Alberta invited asthma patients to participate. 200 of 250 were enrolled. Half the practices were allocated to control group for six months and half to intervention. Both groups were assessed at 0, 6 and 12 months. Control group completed baseline spirometry, and study questionnaires, and received an educational brochure. The intervention group also received three 40 minute education sessions from a certified asthma educator. The self reported Edmonton Asthma Behaviour Scale (EABS), included a question on unplanned health care use over the last three months.

Results: 58 subjects in the control group and 60 in the intervention group have completed six month assessments. Control group costs (by EABS scoring) fell from \$115.6 to \$61.9 per patient (47%) and the intervention group costs fell from \$178.2 to \$107.9 per patient (39%). Medication costs are not included

Conclusion: Asthma assessment and patient evaluation by a certified asthma educator in the FP's office can reduce direct health care costs for these patients.

Conflict of interest and funding: Financial Support: Alberta Heritage Foundation for Medical Research, Alberta Strategy for The Management of Asthma (ASTHMA), Astra-Zeneca, GSK Canada, Nycomed and Boehringer Ingelheim. AC has presented and advised for each of these companies. NB and CM have no conflicts of interest. We prefer an oral presentation.

5. Impact of asthma education on patient quality of life

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Aim: Providing asthma education in the Family Physician's (FP) office expands the model of primary care in Canada and provides an expanded role for health professionals in the primary care team. Our objective was to evaluate the impact of asthma education in FP's offices on patient quality of life.

Method: In a site randomized, unblinded controlled study of education for asthma, 85 FPs from 28 practices identified asthma patients and invited them to participate. 250 asthma patients were screened and 200 were enrolled (35 children). Half the practices were allocated to a control group and half to the intervention. Both groups were assessed at 0, 6 and 12 months. Subjects in the control practices completed spirometry and baseline asthma assessments and received an educational brochure. The study group received an additional three sessions of one-to-one education (totaling two hours) from the educators. One of the outcomes assessed was quality of life using Juniper's Asthma Related Quality of Life Questionnaire.

Results: Data for 128 adult subjects who completed the six months assessments shows statistically significant improvements in quality of life for both groups. The intervention group, with extra teaching, shows a greater improvement but this difference is not statistically significant.

Conclusion: Asthma assessment by certified educators, can improve quality of life for patients with asthma when provided in FP offices. Personalised, patient-centred education can add to this effect.

Conflict of interest and funding: Financial Support: Alberta Heritage Foundation for Medical Research, Alberta Strategy for The Management of Asthma (ASTHMA), Astra-Zeneca, GSK Canada, Nycomed and Boehringer-Ingelheim.

6. Different factors affecting asthma control in Ireland (Helping Asthma in Real People (HARP) Study)

Bajwa Joseph M, Price D, Sims E, Haughney J, Keeley J, Shanahan E, Holohan J, Ryan D

Research in Real Life

Aim: HARP is an asthma audit and review service developed by the International Primary Care Research Group (IPCRG) in conjunction with Asthma Society of Ireland and Optimum Patient Care (OPC) using electronic patient data and/or questionnaire to inform and facilitate the flow of information between the patient and physician. The aim was to analyse questionnaire results from patients' correspondence to determine reasons for poor asthma control.

Method: Currently in Ireland, there is no standard treatment/ disease coding system used. Therefore, patients were identified by asthma treatment prescription codes as follows:

- Patients identified by treatment data alone
- No data extracted due to the inconsistent coding of clinical data and subsequent difficulty in analysis
- Questionnaires sent to all identified patients
- Reports generated on all questionnaire respondents

GP review involved asking patients to complete asthma control test (ACT) including the Royal College of Physician (RCP) asthma score questionnaires.

Results: Fifteen practices were audited, a total of 3973 number of patients were mailed of which 1444 patients responded, and a response rate of 36.3% was achieved. 894 respondents classified as uncontrolled 550 respondents classified as controlled. Summary of results:

1. Of the 1444 respondents, 61.9% were classified as uncontrolled.
2. Respondents with uncontrolled asthma were more likely to have significant rhinitis.
3. 25.8% of respondents with uncontrolled asthma had significant rhinitis compared to only 10.6% of respondents with controlled asthma.
4. 48.7% of respondents with uncontrolled asthma compared to 35.1% of those with controlled asthma reported low adherence to therapy.

Conclusion: The large majority of uncontrolled respondents had comorbid factors hindering asthma control which the HARP project is now addressing.

Conflict of interest and funding: None.

7. Variation in COPD management in 100 UK practices

Price D, Sims E, Jones R, Freeman D, Ryan F

Research in Real Life

Aim: Despite the publication of several sets of COPD guidelines there is still a high level of variation in the management and treatment of COPD in primary care. This study was designed to quantify the difference between treatment of COPD patients in primary care and recommended treatment as provided by NICE and BTS management guidelines.

Method: Data of all diagnosed COPD patients were collected from 100 UK practices. In order to prevent bias of the results in practices where routine medical data was not in a form where it could be readily collected all COPD patients were sent a questionnaire including validated instruments asking about their perception of their condition. Questionnaire data (where available) was then matched with the corresponding medical record allowing each patient's situation and therapy to be compared to treatment recommended by the guidelines.

Results: Routine data from 10538 COPD patients was collected and 4386 questionnaires were returned giving a response rate of 41.6%.

- 22.1% of patients were found to have at least one drug treatment out of line with recommendations.
- 37.8% of patients had at least one management or therapy (other than drug treatments) out of line with the guidelines.
- 35.3% of patients were found to require either further assessment, change in therapy or other complimentary therapy to bring management of their condition in line with recommendations.
- Very high levels of inter-practice variation were found. For example 27%

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of practices had $\geq 80\%$ of patients MRC scores recorded whilst 18% of practices had $\leq 30\%$ of patients MRC scores recorded.

Conclusion: There are high levels of inter-practice variation as well as high levels of deviance from guideline COPD treatment and management overall.

Conflict of interest and funding: BI.

8. Canadian family physician preparedness for management of TB

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Aim: The preparedness of primary care physicians for early detection and management of TB is crucial in preventing spread in the community. Studies in USA and Pakistan have found a low level of familiarity with current TB management in primary care.

Method: A survey was mailed during March 2008 to 950 affiliated members of the Family Physicians Airways Group of Canada. Email warnings of the survey were sent one week before mail out and a reminder one week after mail out. A single sheet survey with questions concerning physician demographics, experience with TB, confidence in managing TB and knowledge testing questions was mailed.

Results: There was a 27% response rate. Membership is heavily weighted in favour of Ontario physicians and so data from this province was analysed separately (N=172). Of these, 8.7% (15) were trained in areas of the world where TB is endemic, 78% (132) practiced in an urban area and 69% (117) had less than ten patients with TB.

Graduating outside North America ($p=0.0009$), coming from an endemic area ($p=0.019$) or seeing more than 10 TB patients ($p<0.0001$) resulted in higher confidence with managing TB but none of these factors showed significant differences in management knowledge scores.

Conclusion: Graduating in North America and having little exposure to patients with TB lowers preparedness to manage TB in primary care. Education should be targeted to those physicians.

Conflict of interest and funding: Funding was provided by the Public Health Agency of Canada. No author has a conflict of interest.

Published or submitted elsewhere: Conference submission: Non-referenced poster presentation at International Union Against TB and Lung Disease (IUTBLD) regional meeting, Vancouver, Feb 2009.

9. Chronic Obstructive Pulmonary Disease Patient Action Plan for Acute Exacerbations: evaluation study

Kaplan A, Hernandez P, Bourbeau J, Power B, Gupta S, Goubanova E

Family Physician Airways Group of Canada

Aim: Acute exacerbations of COPD (AECOPD) are the most frequent cause of medical visits, hospital admissions and death among patients with COPD. The recent CTS guidelines recommended appropriate prevention strategies and early identification and treatment of exacerbations. The purpose of this evaluation study was to assist the Canadian Thoracic Society in assessing the effectiveness of its guidelines implementation tools.

Methods: The CTS COPD Action Plan was developed and distributed to the sample of GPs, respiratory educators and pharmacists with an accompanying introductory letter and a questionnaire.

Results: Based on the feedback received to date, respondents indicated strong positive perception of the tool effectiveness in managing exacerbations. If implemented appropriately, respondents expect positive outcomes such as: a decrease in emergency department visits; and a shorter symptom recovery time which will improve health-related quality of life. Majority of respondents (96%) expect positive outcomes from implementing the COPD Action Plan. They place their most positive evaluation of Action Plan outcomes on decreasing the ER visits and hospital admissions. Majority of respondents expect their patients to promptly use prednisone (96%) and

antibiotic (81%) if supported by patient education and a proper follow-up.

Conclusion: All three groups had identified strong need for future professional development activities and resources. Overall, based on different priorities and needs of respondents from three groups surveyed at the evaluation phase (GPs, RTs and pharmacists), advances in CME/CHE may help in the development of multidisciplinary workshops serving the common needs of health care professionals across the professional and geographic boundaries.

Conflict of interest and funding: The study was funded by the Canadian Thoracic Society. Authors declared no conflict of interest.

Published or submitted elsewhere: Conference submission: Canadian Society Respiratory Therapy Conference, May 2009.

10. Incidence of asthma and accuracy of diagnosis in the Portuguese Sentinel Practice Network

Correia-de-Sousa J, Silva ML, Almada-Lobo F, Yaphe J

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Aim: In 1999 the Portuguese Sentinel Practice Network decided to study the incidence of new cases of asthma presented to members of the network over a four year period. This report presents data from this network study and explores the question of diagnostic accuracy for the diagnosis of asthma by network members.

Method: Data were collected by 54 network physicians in sentinel practices in over a four year period in 2000-2003. All patients consulting with their Family physician with complaints suggestive of asthma were enrolled in the study. Data were collected on a standardized data reporting form. All forms were collected on completion and data were coded and entered for analysis. Frequencies of symptoms, diagnoses of asthma and place of diagnosis were tabulated. Diagnostic accuracy was computed by dividing the rate of asthma diagnosis by family physicians by the true rate as determined by established diagnostic criteria.

Results: 128 412 patients were seen in this study. Asthma was diagnosed in 310. The true incidence was 2.02/ 1000/ year as determined by accepted criteria giving an accuracy rate of 84%.

Conclusion: The incidence of asthma was lower than expected in this population if only the clinical diagnoses of family physicians are used. The incidence approaches rates in the published literature if accepted criteria are used. Outcomes for asthma patients may be improved in this population if accepted criteria are used widely. Educational efforts should be focused in this direction.

Conflict of interest and funding: No conflict of interests; funding through Portuguese Government bodies.

Published or submitted elsewhere: Publication reference: Accuracy of diagnosis of new cases of asthma by the Portugal Sentinel Network; Conference submission: WONCA Conference, Amsterdam 2004, only partial data presented.

11. Long-term results of integrated COPD management in primary care: the Kroonluchter Program

Chavannes N, Gussekloo J

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Aim: Integrated Disease Management (IDM) of primary care COPD-patients has been demonstrated to improve exercise tolerance and quality of life after one year, but longer-term results are currently lacking.

Method: Since 2006, the Kroonluchter IDM-program has treated 216 primary care patients with mild to moderate COPD. Prospective six-minute walking distance (6MWD) results of patients reaching 24 months of follow-up were analyzed using paired-samples T-tests.

Results: Patients that completed follow-up had a mean FEV₁ of 65% predicted and were aged 68 years on average. The mean improvement compared with baseline on the 6MWD was 78m [95% CI 49-106] $p<0.001$. Up to 62% of patients reached and maintained the MCID of 54m on the

6MWD during 24 months of follow-up.

Conclusion: Integrated Disease Management can lead to long-term improvements in primary care COPD patients, the majority of whom reach and maintain clinically relevant differences in exercise tolerance.

Conflict of interest and funding: None.

Published or submitted elsewhere: Conference submission: ERS Congress 2009.

12. Knowledge of asthma guidelines: Results of a web-based 'Test your Knowledge' quiz

Pinnock H, Small I, McArthur R, Holmes S, Levy ML for the GPIAG Education Committee

Allergy and Respiratory Research Group, Centre for Population Health Sciences: GP Section, University of Edinburgh

Aim: Each update of the British Thoracic Society and Scottish Collegiate Guideline Network (BTS-SIGN) guideline for the management of asthma has been widely disseminated. The General Practice Airways Group (GPIAG) survey aimed to test the knowledge of visitors to the web-based 2008 guideline summary.

Method: Web-site visitors were invited to complete an anonymous questionnaire, comprising eleven multiple choice questions. Responses were marked as correct or incorrect giving a score out of 11. In addition to descriptive statistics, responses between groups were compared using Chi-squared or independent sample t-tests.

Results: The 413 respondents (96 (23.2%) general practitioners (GPs), 237 (57.4%) primary care nurses (PCNs) 38 (9.2%) secondary care nurses (SCNs) and 42 (10.2%) other healthcare professionals) answered less than half the questions correctly. The mean score was 5.2 (SD 2.56): 24 respondents answered all questions correctly; three scored no correct answers. GP scores were significantly lower than primary care nurses (GP=4.6 vs PCN=5.5. mean difference -0.97 (95% CI -1.6 to -0.36) p=0.002) There was no difference between the scores of PCN and SCN, or between GPIAG and non-GPIAG members. There were differences between professional groups in accuracy of response to individual questions which to some extent reflected their roles within UK practices.

Conclusion: There is still an urgent need to promote the key messages from the BTS-SIGN asthma guidelines. Although compliance with guidelines is multifactorial, improving healthcare professionals' knowledge of asthma is an important pre-requisite.

Conflict of interest and funding: The GPIAG project was funded by educational grant from GlaxoSmithKline. HP is supported by a PCRCA from the Chief Scientist's Office of the Scottish Government.

13. The challenges of recruiting for a primary care trial

Malhotra S, Musgrave S, Price D, Pinnock H, Ryan D

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Aim: We aimed to recruit 312 participants to our pragmatic trial of using mobile technology to improve poorly controlled asthma. We here report the challenges of recruitment.

Method: We interrogated the computerised databases of participating practices using dedicated software, identifying patients 12 years and over with poorly controlled asthma (Asthma Control Questionnaire (ACQ) >1.5) After GP check for suitability, all identified patients were sent a postal invitation. Those expressing interest were pre-screened by phone to check their asthma control and that they had a suitable telecommunication package. Potentially eligible patients were booked for trial recruitment visit where inclusion/exclusion criteria were confirmed.

Results: 32 practices participated (combined list size 311,926 patients). Computer interrogation identified 13,101 patients, of whom 1,020 were excluded by the GPs as inappropriate, 12,081 invitations posted, 1,016 (8.4%), patients expressed an interest and were pre-screened by telephone. 470 were excluded because of good asthma control, 69 because of telecommunication package incompatibility and 84 for other reasons. Of 391 (3.2%) potentially eligible patients booked for trial recruitment visit 47 did not attend, 5 had COPD, 3 had moved, 37 were no longer poorly controlled leaving a total of 288 patients for randomisation, 2.4% of those invited.

Conclusion: Understanding the barriers to recruitment could facilitate a more efficient process. Better coding of routine data in primary care and more sophisticated software tools could improve the focus of computer searches. Patient friendly information packs and invitations should encourage response; Pre-screening effectively excluded ineligible participants but may act as an intervention. Incompatibility between telecommunication packages further challenged recruitment.

Conflict of interest and funding: Conflicts of interest: None; Funding: Asthma UK.

ABSTRACTS

2nd IPCRG International Scientific Meeting "Primary Care at the leading edge"

Thursday 26th May (Evening) - Friday 27th May 2011, Amsterdam

Abstracts selected for publication in the *Primary Care Respiratory Journal*

They are in order of presentation at the meeting

093: A randomised control trial of the effect on asthma-related behaviours of education in the GP's office

Cave AJ, Makarowski C, Ahmadi E

University of Alberta, Canada

Aim: The purpose of educational interventions is to change the recipient's behaviour. Not many trials test this. We introduce a new measure of behaviour change

Method: A randomised control trial, the REPC study, introduced respiratory educators into 29 family physicians' offices in Alberta, Canada. 125 patients with asthma received 3 patient-centred educational sessions at 0, 2 and 6 months with 125 controls. 95 patients completed the Edmonton Asthma Behaviour Scale (EABS) before each intervention. (49 subjects and 46 controls). This scale includes six domains of asthma-related behaviours; (1) compliance to regimen (2) trigger avoidance (3) prevention activities (4) interaction with health care (5) symptom intervention (6) problem behaviours; and has been piloted for consistency and reliability. Changes between the groups and within the groups were measured over time using the six domains of the EABS

Results: Changes over time between the intervention and control groups did not differ significantly. Within the intervention group, subjects showed significant changes over time for three of the six domains; #1 and #3 and #5; (compliance, prevention and symptom intervention) For domains #1 and #5 the changes were maximal at the two month evaluation and dropped off at the six month evaluation.

Conclusion: Education of primary care patients with asthma by trained educators in their family physician's office can lead to changes in some of their asthma related behaviours. Further studies are needed with larger numbers to determine the potential size of this effect and the effect on other asthma related behaviours for which this study failed to show a change.

Conflict of interest and funding: This study was performed with funding from Alberta Heritage Foundation for Medical Research and unrestricted funding from the ASTHMA fund (MERCK), AstraZeneca, PRIISME (GlaxoSmithKline) and Nycomed

073: An educational initiative to enhance knowledge on COPD among general practitioners serving rural areas in Greece

Tsiligianni I, Dimopoulou S, Merkouris B, Batikas A, Ioannidis D, Kosmas E, Mantzouranis G, Smagadi A, Zisi P, Moraitaki D, Dumitru S, Andritsou M, Tzanakis N

University of Crete, Heraklion, Greece

Aim: In Greece, general practitioners (GPs) often lack knowledge on COPD management and spirometry. In an attempt to cover this gap, the Greek Association of General Practitioners (ELEGIA) in collaboration with the Hellenic Thoracic Society decided to offer Schools on COPD and spirometry on an annual basis.

Method: Each school consisted of 4 days intensive programme that covered aspects such as COPD early diagnosis and differential diagnosis, hands-on workshop on performing and interpreting spirometry, COPD treatment, smoking cessation, comorbidities in COPD, exacerbations and practical demonstration of the use of inhaler devices. Participants completed an

evaluation form after their attendance.

Results: During 2010, 3 Schools on COPD were performed with about 70 participants, all of them serving as GPs mainly in rural and sometimes also remote areas. At the completion of the School all participants agreed to be a part of a research time leading by ELEGIA. All trainees were asked to complete an evaluation form at the end of the COPD School. The evaluation form had a Likert scale from 1-10 (1=not happy with the course, 10=completely happy). The School's courses covered the trainee expectations (median score= 9.2), total evaluation of the course (median score= 9.3), usefulness of the course for the trainee future approach of COPD patients (median score= 9.4).

Conclusion: A COPD course focused to GPs serving mainly rural areas in Greece offered them the opportunity to receive a well structured education and fill several gaps on their knowledge and skills on COPD education and management.

Conflict of interest and funding: No conflict of interest. Boehringer Ingelheim Hellas and Pfizer Hellas had sponsored the Schools.

090: The personal and social burden of COPD: individual lifestyle impact

Fletcher MJ, Albrow H, Jenkins C, Walker SM

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Aim: COPD affects around 210m people worldwide. An increasing number of people aged under 65 years are being diagnosed. The impact of COPD on the younger working age population may be different to that of an older population and merits further study. The aim of this study was to ascertain the effect of COPD on a younger working age population: including financial and psychosocial impacts. Here country level data are presented from a multi-region survey of younger individuals.

Method: 2426 respondents participated in a cross sectional survey in six countries. 49% male (n:1180), mean age 56.4 years (SD 7.1), 29% (n:710) were working. Respondents were recruited utilising a mixed methods design, either via telephone or face-to-face interview. Data was collected on the economic impacts of COPD on individuals and their families, including effect on household income, ability to maintain lifestyles, planning for the future and the impact of the illness on family and friends.

Results: The results suggest many respondents do not feel able to plan for the future or maintain their lifestyle (Table 1). Over a third of respondents' felt their household income had been decreasing as a result of their COPD (n:896), many felt they were a burden to their friends and family (17% n:421) (Table 2) and over a quarter felt they were not taking care of their children and family as usual (n:636). Over 50% went out less often to visit others, and similar numbers felt embarrassed by their cough in public. Over half said their condition had stopped them achieving life goals or dreams (n:1224). See http://www.thepcrj.org/abstracts_2011/fletcher_abstract_personal_and_social_burden1_HA_22-3-11.doc for tables.

Conclusion: Respondents felt they were restricted by their COPD in terms of achieving life goals, socialising with others and in providing usual family care. The results confirm the serious psychosocial and financial impact of COPD, issues of particular importance for working age patients.

Conflict of interest and funding: Funded by a grant awarded by Novartis

036: Nurses' and patients' communication in smoking cessation at nurse-led COPD clinics in primary health care

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Aim: To examine smoking cessation communication between patients and registered nurses, with a few days of Motivational Interviewing (MI) based education, in consultations over time at nurse-led Chronic Obstructive Pulmonary Disease (COPD) clinics in primary health care (PHC).

Method: The first and third of three consultations were videotaped, involving 13 smokers and six nurses. In these consultations smoking cessation communication was analyzed using the Motivational Interviewing Treatment Integrity (MITI) Scale and Client Language Assessment in Motivational Interviewing (CLAMI).

Results: The nurses did, but only to a small extent, evoke patients' reasons for change, foster collaboration and support patients' autonomy. In the registration of specific utterances; they provided a lot of information (42%), asked closed (21%) rather than open questions (3%) and made more simple (14%) than complex (2%) reflections. Most of the registration of the patients' utterances in the communication were either toward or away from smoking cessation coded in the category Follow/Neutral (59%), followed by utterances in the categories of Reason for change 40%, Taking steps 1% and Commitment 0%. No significant differences could be observed in the results of MITI and CLAMI between the first and third consultations.

Conclusion: Smoking cessation communication at nurse-led COPD clinics neither focused on the patients' reasons for or against smoking nor motivated patients to express commitment to, or take steps towards, smoking cessation.

Conflict of interest and funding: There are no conflict of interest

028: Evaluation of socio-demographic characteristics of patients receiving specific immunotherapy in Antalya

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Aim: In this study, the socio-demographic characteristics were evaluated in subcutaneous specific allergen immunotherapy-treated patients diagnosed with allergic rhino-conjunctivitis and asthma. Allergic rhinitis is a common disease in the community. Allergic rhinitis manifests in two forms, as seasonal and perennial allergic rhinitis. The allergic rhinitis prevalence and etiology varies from region to region and affects 10-20% of the population approximately.

Method: The study was conducted in Antalya between 10th of November 2009 and 20th of September 2010. The cases having subcutaneous specific immune-therapy due to allergic rhino-conjunctivitis or asthma were included. A questionnaire made by the investigators taking the latest literature data into consideration were used during the study. The total and specific IgE levels were made by fluoroenzyme immunoassay method via use of ImmunoCAP kit. For dermal prick tests Alyostal ST-IR standard allergen extracts were used.

Results: The total duration of the allergic rhinitis was 7.2 ± 0.2 years, and the mean duration of the disease at the start of the immune-therapy was 4.3 ± 3.6 years. The total Ig E level was 307.6 ± 14.5 Ku/l. The most common allergen was plant and cereal pollens.

Conclusion: High asthma prevalence in people living in shanties and in housewives may be due to exposure to house dust mites. In allergic diseases; allergens may have regional variations. That's why; the allergen profiles of the regions must be determined and the dermal Prick tests must be prepared accordingly. Key words: allergens, Prick test, allergic rhinitis, allergic conjunctivitis, asthma

Conflict of interest and funding: No

043: COPD Patient education: physician and patient communication gaps

Kaplan A, Chapman KR

University of Toronto, Canada

Aim: To explore physician and patient attitudes regarding perception of COPD pathophysiology, healthcare resources and smoking cessation.

Method: Patients aged 35-74 with moderate to severe COPD, and physicians with experience treating patients with COPD were recruited through various methods. Attitudes concerning COPD patient education were explored during two focus group sessions (Toronto and Montreal) in October 2010 using semi-structured interviews. Patients and physicians were interviewed separately (with physicians able to observe the patient discussion) and a physician-patient group discussion followed.

Results: Twelve patients and 12 physicians participated; 6 patients and 6 physicians (two respirologists and four GPs) per focus group. Patients were unclear about the definition, role and consequences of inflammation in COPD. Although patients understand smoking to be the cause of their COPD, many were reluctant to discuss their disease given their doctors judgmental /unsympathetic attitudes towards smoking. Patients filled in information gaps on their own and their awareness of community support resources was limited. Their motivation for education was driven primarily by for relief of immediate symptoms, rather than minimizing the long-term impact of their disease. In contrast, although physicians have a clear understanding that sustained inflammation underlies the chronic and progressive natural history of COPD, patient-physician information-sharing was limited by the following: difficulty in explaining inflammation, time restraints, desire not to "overwhelm", and focus on co-morbid conditions. Physicians regularly discussed the importance of smoking cessation, in what they felt was a sensitive and constructive way.

Conclusion: The findings highlight significant gaps in patients understanding of the role of inflammation in COPD and their knowledge of educational resources in the community. Patient-physician communication gaps regarding smoking cessation also exist. Further patient education and more effective communication strategies are required.

Conflict of interest and funding: Funded by Nycomed Canada Inc.

044: Attitudes to COPD exacerbations: do patients and physicians differ?

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Aim: To explore physician and patient attitudes towards the prevention, treatment and reporting of COPD exacerbations.

Method: Patients aged 35-74 with moderate to severe COPD, and physicians with experience treating patients with COPD were recruited through various methods. Attitudes concerning COPD exacerbations were explored during two focus group sessions (Toronto and Montreal) in October 2010 using semi-structured interviews. Patients and physicians were interviewed separately (with physicians able to observe the patient discussion) and a physician-patient group discussion followed.

Results: Twelve patients and 12 physicians participated; 6 patients and 6 physicians (two respirologists and four GPs) per focus group. Patients do not understand the term "exacerbation", what constitutes a COPD exacerbation, its impact, and effective preventative strategies. Many patients do not recognize the onset of an exacerbation, delay treatment and often try to manage exacerbations on their own, which results in delayed treatment and the under-reporting of exacerbations. The frequency of exacerbations reported by patients was highly variable. Patients also were often unclear about exacerbation prevention, understanding hand washing but underusing influenza shots (~1/2 received) and not recognizing the preventive role of their inhalers. In contrast, physicians have a relatively clear understanding of a COPD exacerbation and its impact, and often defining it in terms of health-care utilization. Despite this understanding, some uncertainties when defining the severity of an exacerbation remain. Physicians stated that on average, patients reported three to four exacerbations/year, which they felt was likely an underestimation.

Conclusion: The findings indicate that there are significant gaps in patients understanding and management of COPD exacerbations. Further patient awareness and education with regards to defining, preventing and reporting COPD exacerbations are required.

Conflict of interest and funding: Funded by Nycomed Canada Inc.

049: The effect of integrated care on asthma control

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Aim: To describe the effect of an integrated care system on asthma control
Method: We developed an integrated care system for communication between pulmonologists and General Practitioners (GP). In this system patients with respiratory problems complete questionnaires (history, control and health status) and visit the laboratory for spirometry. These data are collected and uploaded to a central server. Based on these data without seeing the patient and supported by a decision support system the pulmonologists (n=9) give advice about diagnosis and treatment to the GP (n=250), who treats the patient.

Results: From a total of 7877 patients referred to our integrated care system 3721 patients were diagnosed with asthma. In 889 of these patients ACQ data were available at baseline and follow up. The median ACQ scores at baseline (median: 1.0) proved to be significantly different from the median ACQ scores of the follow up visit (median: 0.7; $p < .001$). Improvement of asthma control \geq MCID (0.4) was measured in 32% of patients (n=284). Additionally the results showed deteriorated asthma control in 15% of patients (n=134) and unchanging asthma control in 51% of patients (n=454).

Conclusion: This integrated care model improved asthma control

Conflict of interest and funding: None

072: 'Knowing the patient': perspectives of patients and healthcare professionals on clinical support for tele-monitoring of COPD

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Aim: There is increasing interest in the use of tele-monitoring as a means of managing patients with severe COPD. The supporting clinical service is crucial, however, there is considerable diversity in how such care is organised. The TELESOT randomised control trial based in Lothian, Scotland, is investigating the impact of tele-monitoring services for COPD. The nested qualitative study explored the views of patients and professionals on models of telemetric service delivery.

Method: We undertook semi structured interviews with patient and professional participants at different time points in the TELESOT COPD trial. Transcribed, coded data were analysed thematically. Interpretation was supported by multidisciplinary discussion.

Results: 38 patients (47% male, mean age 67.5 years) and 32 professionals provided 70 interviews. Both patients and professionals stressed the importance of continuity of care. Professionals generally considered integration of telemetric provision with local practitioner services preferable to centralised 'call centre'-type provision, emphasising the value of the patient-practitioner relationship and clinical expertise ('knowing the patient' and 'knowing what's normal for the individual') in interpreting tele-monitoring data. Patients spoke of the importance of personalised care provided by tele-monitoring staff familiar with their circumstances and state of health. Patients and professionals were both concerned that centralised call handling may be perceived as cost-effective as services are rolled-out, but questioned the wisdom of this approach.

Conclusion: The patient-practitioner relationship, personalisation and continuity of care were prioritised as important elements in delivering clinical support for tele-monitoring services by patients and professionals, overriding apparent economies of centralised, but impersonal services.

Conflict of interest and funding: Conflict of interest: none. Funding: Chief Scientist Office, Scottish Government.

038: Does pulse oximetry reflect pulmonary function and quality of life in people aged over 40 with COPD in general practice?

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Aim: Pulse oximetry is a simple screening test for systemic hypoxia. This study aimed to evaluate pulse oximetry in general practice, in patients with stable COPD, and assess how pulse oximetry results (SpO₂) reflect lung function and symptoms.

Method: Among 18931 adults aged 40 years or more, listed at 7 general practice offices, 1784 were identified in the medical records with a diagnosis of asthma or COPD within the last five years. Of these a random sample of 1111 patients were asked by mail to take part in the project. 380 patients took part in the baseline examination. Oxygen saturation was measured by pulse oximeter Nonin Onyx II. Spirometry was carried out following ERS/ATS guidelines, using Spirare equipment. Respiratory symptoms and disease specific quality of life items experienced the previous week were registered on a validated COPD Questionnaire (CCQ). The questionnaire utilises a seven-point scale where 0 = asymptomatic/no limitations and 6 =extremely symptomatic/totally limited.

Results: 12 of 378 patients from baseline examinations had oxygen saturation 92%. 11 of these patients had COPD (FEV₁/FVC<0.7), eight with severe COPD (FEV₁ % predicted <50). 7.1% of the patients with COPD had SpO₂ \leq 92% compared to 0.5% in those with FEV₁/FVC ratio \geq 0.7 ($p < 0.001$). Median score of the COPD questionnaire (CCQ) was 3.0 in the patients with SpO₂ \leq 92% compared to 1.6 in the patients with SpO₂ $>$ 92% ($p = 0.001$).

Conclusion: Oximetry in primary care has the potential to help in the diagnosis and assessment of COPD, and, in some instances, identify unsuspected hypoxia. Being easy to use and acceptable to patients, pulse oximetry may be useful in the monitoring of patients with obstructive lung diseases.

Conflict of interest and funding: None

055: Functional status measurement in COPD: a review of available methods and their feasibility in primary care

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Aim: Guidelines advocate to designate the improvement of functional status a major goal in COPD treatment. Many tools are available to assess functional status and related constructs. This review aims to categorize available tools based on their construct, and to rate the tools for use in the primary care setting.

Method: PubMed was searched with the keywords: 'Functional status' or 'physical capacity' or 'functional capacity' and 'COPD'. All tools were categorized and rated on their measurement properties, feasibility and usage in primary care COPD patients. The tools were divided into four constructs: functional capacity, functional performance, functional reserve, and capacity utilization and four categories: laboratory tests, semi laboratory tests, field tests, and patient reported outcomes.

Results: The PubMed search resulted in 364 articles. Thirty-two tools were identified and rated.

Conclusion: for primary care, the six minute walking distance test is the most reliable semi-laboratory functional capacity test, but is not very practical. The pedometer is the best functional performance field test and the Medical Research Council dyspnoea questionnaire(MRC) and the Clinical COPD Questionnaire(CCQ) functional status domain are the best patient reported outcome tools to assess functional performance.

Conflict of interest and funding: none

037: The effect of active implementation of a chronic disease management program for patients with COPD on use of healthcare resources

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Aim: Evaluate the effect of an active, structured implementation of a chronic-disease-management guideline for patients with Chronic Obstructive Pulmonary Disease (COPD) on the use of health-care-resources.

Method: A cluster- and bloc-randomized controlled trial with two arms and an additional control group. In the intervention arm with patients from half of the general practices in Ringkoebing-Skjern municipality, the general practices received an active, structured implementation of a disease management program for COPD. The other half of the practices continued as usual and their patients formed the control arm. To control for bias a comparable municipality's practices and patients formed an external control group. At baseline, questionnaires were sent to patients identified by a COPD-algorithm based on administrative data. One year after the intervention start, follow-up questionnaires were sent to patients who had responded that they had COPD at baseline. Data from health-care registries for patients returning the second questionnaire were collected. Data were analyzed as differences in each group. **Results:** 2917 patients were sent a baseline-questionnaire, 1998 (68.4%) answered. 73% verified their diagnosis of COPD. Follow-up-questionnaires were sent to 1395 (59 had died or sought research protection) and 83% answered. There was an increase in the use of planned preventive consultations from 120 (36%) to 190 consultations (57%) ($p < 0.0003$) in the intervention-group. The control and external control-groups showed no change. There was an increase in spirometries done among the intervention patients from 34% (114) to 43% (142 spirometries), ($p < 0.008$). No change in the two control-groups. We also saw a quadrupling of the spirometries with a reversibility test in the intervention-practices from 3% (11) to 12% (38 spirometries with reversibility test) ($p < 0.001$) and no change in the two control-groups. In the follow-up questionnaire 36% (109) vs. 17% (59) and 19% (83) ($p < 0.001$) of the patients from intervention-practices reported they had been to a check-up for their COPD during the last 12 months. Further, 22% (67) in the intervention-group knew the date for their next check-up compared with 11% (39) and 12% (56) in the two control-groups, respectively ($p < 0.001$).

Conclusion: The results suggest that implementing a structured disease-management-program for COPD in general practice changed the use of related health-care resources indicating higher medical-process quality.

Conflict of interest and funding: The study is funded by The Central Denmark Region, Ringkoebing-Skjern Municipality and The Research Fund at Aarhus University. The authors declare that there is no conflict of interest.

068: Comparative effectiveness of extrafine versus standard particle HFA-BDP in real-world asthma

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Aim: Smaller particle inhaled corticosteroids (ICS) may offer greater inhalation tolerance and more even distribution within the lungs. We compared asthma control outcomes over 1 year for two hydrofluoroalkane (HFA) formulations of beclomethasone dipropionate (BDP) prescribed in the UK: extrafine (EF) HFA-BDP (Qvar®, particle size $\sim 1.1\mu$) and standard particle (SP) HFA-BDP (Clenil®, particle size $\sim 2.9\mu$).

Method: We utilised the UK's Optimum Patient Care Research Database to identify adult patients (12–80years) with asthma (diagnostic code and/or ≥ 2 ICS prescriptions in the outcome year) who changed from any CFC ICS to EF or SP HFA-BDP at an index date with no change in baseline equivalent BDP dose (i.e. SP HFA-BDP at equivalent BDP dose; EF-HFA-BDP at half equivalent BDP dose). Composite asthma control measures were evaluated over 1 year: ASTHMA CONTROL: no asthma-related hospital attendance, admissions, out-of-hours consultation, outpatient department attendance; no acute oral steroid prescriptions; no asthma-related primary care consultations for lower respiratory tract infection (LRTI); EXACERBATIONS: asthma hospital attendance, out patient department attendance or Accident&Emergency

admission, and/or acute oral steroid courses or antibiotics for LRTI. Matching was not required due to similarity of patients at baseline; results were adjusted for baseline differences using regression modeling.

Results: During baseline 78.8% and 76.6% of EF ($n=1762$) and SP ($n=1740$) HFA-BDP patients achieved asthma control, respectively ($p=0.114$). Following the change in therapy, EF HFA-BDP patients had significantly greater adjusted odds of achieving asthma control (OR[95%CI]: 1.19[1.00,1.43]) than SP HFA-BDP patients. There was a trend to lower adjusted exacerbation rate for EF compared with SP HFA-BDP (RR[95%CI]: 0.86[0.73,1.16]).

Conclusion: When switched from CFC-BDP, EF HFA-BDP patients achieved similar or better outcomes than those switched to SP HFA-BDP.

Conflict of interest and funding: Analysis funded by Teva Pharmaceuticals Limited.

061: CAT and CCQ validation in Crete: preliminary results

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Aim: The COPD Assessment Test and the Clinical COPD Questionnaire are both developed to measure COPD related health status. The aim of this study is to do a head to head comparison of the two questionnaires.

Method: 69 patients with COPD, in Crete, Greece have until now participated in the study. In visit 1, visit 2 (7-12 days after visit 1) and visit three after 42 days, the following were assessed: CCQ, CAT, St George Respiratory Questionnaire (SGRQ), and spirometry with bronchodilation.

Results: The 69 patients that have participated were in GOLD stage I (10.2%), stage II (56.5%), stage III (27.5%), IV (5.8%). Mean \pm sd was for CAT: 12.19 \pm 7.77, for CCQ tot: 1.47 \pm 1.00, for SGRQ: 35.67 \pm 18.22. Internal consistency: Cronbach's α was 0.955 for the CCQ total score, 0.961 for CAT, and 0.976 for SGRQ. Convergent validity: CCQ total score and CAT score correlated strongly, ($p=0.794; p < 0.01$). The total scores between CCQ and SGRQ scores were significantly correlated, ($p=0.780; p < 0.01$). The functional domain of the CCQ correlated significantly with the activity domain of SGRQ ($p=0.762; p < 0.01$). CAT score correlated significantly with the SGRQ total ($p=0.786; p < 0.01$ respectively). The ICC was 0.877 for the total CCQ score and 0.892 for the CAT score. Correlation of CAT, CCQ tot and SGRQ with MRC was 0.665, 0.710, and 0.773 respectively, $p < 0.001$. Divergent validity: The correlation between CAT, CCQ tot, and SGRQ tot and FEV1%pred was -0.493, -0.548, and -0.582 respectively, $p < 0.001$.

Conclusion: Both CCQ and CAT have very good psychometric properties with no statistical differences between the questionnaires.

Conflict of interest and funding: None

047: Empowerment and quality of life in asthma patients (the EQLAP study): a cross-sectional study from a family practice

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Aim: To assess the severity of asthma, medication use, asthma control, level of patient enablement and quality of life in a population of asthmatic patients in primary care.

Method: A cross-sectional study carried out in an urban population in northern Portugal. Data were collected both from clinical records and questionnaires administered to a stratified random sample of asthma patients. The modified patient enablement instrument (mPEI), the asthma quality of life questionnaire (AQLQ) and the asthma control test (ACT) were used. Pulmonary function was assessed by measuring peak expiratory flow (PEF) and forced expiratory volume at one second (FEV1).

Results: The study sample included 175 patients treated by 7 physicians with a response rate of 97.2%. The mean age was 45.9 years and 68% of the patients were female. Over half of the patients (57%) had forms of persistent asthma. The mean PEI scores was significantly higher for patients with intermittent asthma compared to those with persistent forms ($p < 0.01$). There was a strong and statistically significant correlation between asthma control

and quality of life ($r=0.8$). There was a weak but significant correlation between patient enablement and both asthma control and quality of life. There was no correlation between patient enablement and the results of the pulmonary function tests.

Conclusion: The findings in this study confirm the correlation between good asthma control and quality of life. The finding of a weak correlation between scores on the patient enablement instrument and asthma control and quality of life scores requires further study.

Conflict of interest and funding: No conflicts of interests are reported for this study. The study required no external funding as it was practice-based research conducted within the National Health Service. Dr. Correia de Sousa is an unpaid member of the scientific board of AstraZeneca Foundation Portugal. His department has received research funding from AstraZeneca in the past.

095: Asthma, physical and mental well-being in elite swimmers compared to age-matched controls

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Aim: Sporting activity has been reported both as a risk factor and as a factor promoting health. An increased risk of developing asthma has been reported among swimmers exposed to chloramine in pool arenas. The aim of the present study was to compare the prevalence of respiratory symptoms among elite swimmers compared to age-matched controls with different degrees of physical activity. We also aimed to relate these findings to life style factors, psychological and physical well-being.

Method: 101 elite swimmers and 1628 age-matched controls answered a questionnaire containing questions about respiratory symptoms, lifestyle factors, mental and physical well-being. The controls were divided into three different groups according to degree of physical activity.

Results: Swimmers reported significantly more asthma symptoms. 36.6% of the swimmers had physician diagnosed asthma, compared to 16.2% among the controls. Use of regular medication was more common (14.9% vs 8.0%). More swimmers reported an exacerbation during the previous 12 months (16.8% vs 5.8%). Despite increased prevalence of asthma symptoms, the swimmers reported the best mental and physical well-being. They had a healthier life style with absence of smoking and low alcohol consumption. The influence from their home environment seems to be important together with strong motivation achieved as part of the sporting activity per se.

Conclusion: Swimmers have high frequency of respiratory symptoms and the chloramines in the swimming pool arenas are probable contributing factors. Better control of pool environments is warranted in order to achieve a better balance between the positive benefits of sporting activity and being exposed to a higher risk of developing asthma.

Conflict of interest and funding: Independent grants from AstraZeneca, Schering-Plough and MSD

031: COPD patients' experience of a nurse-led multidisciplinary programme in primary health care, one year after participation

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Aim: To describe patients' with COPD experience of participating in a nurse-led multidisciplinary programme in primary health care setting, one year after completing the programme.

Method: The study has a descriptive qualitative design and is a part of a longitudinal study, a nurse-led multidisciplinary programme for patients with COPD in primary health care. Qualitative interviews with 20 participants were performed and data was analysed by qualitative content analysis.

Results: The result is presented in one theme; I have allowed me to live my life in my own pace, and three sub-themes; I was helped taking control over life; The education was nothing that bothered to me; and I have got insights of limitations in life.

Conclusion: Regardless if the patients already had found their own strategies to handle the disease or if the programme had changed their lives, there was

a constant fear present. In future educational programs it should be taken into consideration if the selection of patients should be based on function in everyday life instead of based on results of spirometry. Furthermore, COPD-nurses need to be trained in education in group-sessions in future pulmonary rehabilitation activities.

Conflict of interest and funding: No conflict of interest. The study is funded by Foundation of Maja Johanssons och Maria Brantefors scholarship fund in development work in health- and medical service. Also the Research Committé of Örebro County Council funded the study.

052: The effect of integrated care on health status in COPD

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Aim: To describe the effect of advice from an integrated care system on health status in COPD patients.

Method: We developed an integrated care system in which pulmonologists provide diagnostic support to the General Practitioner (GP). Patients with respiratory problems complete questionnaires (history, control and Clinical COPD Questionnaire (CCQ)) and visit the laboratory for spirometry. These data are collected and uploaded to a central server. Based on these data without seeing the patient and supported by a decision support system the pulmonologists ($n=9$) give advice about diagnosis and treatment to the GP ($n=250$) who treats the patient.

Results: From 7877 patients referred to the integrated care system 1331 patients were diagnosed with COPD. In 310 of these patients CCQ data were available both at baseline and follow up (3 months or 1 year). The median CCQ score of the baseline visit (median: 1.1) proved to be significantly different from the median CCQ scores on the second visit (median:1.0 ; $p = .013$). Improvement of health status \geq the minimal clinical important difference (MCID) of 0.4 was measured in 27% of patients ($n=82$). Deteriorated health status \geq the MCID was reported by 29% of patients ($n=91$). 44% of patients reported unchanging health status ($n=135$).

Conclusion: This integrated care model where the pulmonologist directly advises the GP provided a significant yet small improvement of COPD health status where one would expect a small decline in health status due to the natural course of the disease. Clinical implications however are unclear.

Conflict of interest and funding: None

035: Basic knowledge of COPD, spirometry and smoking cessation in Norway

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Aim: The specialty of primary care is obtained after fulfilling several criteria. Every fifth year it has to be recertified. CME accredited courses are mandatory in this process. The majority of which do not require the participants to pass any evaluation. We wanted to assess the learning effect of a respiratory course with focus on spirometry and COPD. Baseline data will be presented.

Method: Invitation to participate was sent to GPs on a regional basis. Participants who signed up for the course received written information about the study in advance. Written consent was obtained. A questionnaire was filled out before the start of the course and 3 months after. The questionnaire contained key questions regarding diagnosis, follow-up and treatment of COPD, key criteria for spirometry testing and a section on smoking cessation.

Results: One hundred and ninety four delegates filled in the questionnaire before the course. There was an equal distribution between the sexes and 60% of delegates were specialists. Almost all centres had spirometry (96%) and the majority of tests (83%) were performed by health secretaries. There was a striking uncertainty among the delegates in diagnosis and interpretation of spirometry with only 18% and 13% respectively feeling confident. Only 32% conformed to current guideline use for short acting bronchodilators as first choice in therapy. A majority of GPs (57%) ask all new patients of smoking status but only 18% have a structured cessation programme in their practice.

Conclusion: There is a great need for updating GPs in basic spirometry and

knowledge on diagnosis, treatment and follow-up of COPD. There is still a lack of smoking cessation support from GPs.

Conflict of interest and funding: Conflict of interest: None Funding: Supported by a grant from the Norwegian Directorate for Health.

040: Patient Symptoms Dictate How Physicians Behave in the Early Diagnosis of COPD.

Kaplan A, Marciniuk D, Bouchard J, Tessier L

University of Toronto

Aim: To assess physician behaviours regarding early diagnosis of COPD based on their assessment of patients' symptoms

Method: Family physician practice patterns regarding COPD were studied. Any smoker or ex-smoker, ≥ 40 years of age, and answering yes to any of the Canada Lung Health test questions were included in the practice assessment (exclusion: known COPD diagnosis, prior spirometry < 2 years).

Results: 74 Quebec family physicians assessed 1482 patients in their office between May and July 2009 ($n=890$), and between March and May 2010 ($n=592$). 31% of the patients had respiratory symptoms and 51% presented for general check-ups. Of those who coughed, 43% coughed at least weekly. 75% of the symptomatic patients were MRC < 2 . 59% of physicians vs. 39% of patients perceived that symptoms affected activity, across all MRC levels. COPD was not top-of-mind for physicians unless respiratory symptoms were present, but even then spirometry was requested in only half the patients. More spirometry was ordered if the patient had respiratory infection, dyspnea or cough, or if respiratory symptoms affected their activity. Reasons for not ordering spirometry included having limited access to spirometry (18.9%), concluding that results would not change practice (33.9%), predicting it would be normal (9.9%), or patient having seemingly more significant other medical priorities (30.5%).

Conclusion: Screening prior or currently smoking patients 40 years of age or older with the Canada Lung Health Test appropriately identifies patients with COPD. The degree that their disease seemed to affect their activities had much to do with how aggressively they were diagnosed and even treated. Physicians had many reasons to not order spirometry, which continues to be a barrier for proper diagnosis.

Conflict of interest and funding: Sponsored by Boehringer Ingelheim (Canada) Ltd./Ltée

042: A clinic-based structured physician program (Airwaves) to educate patients with asthma

Kaplan A

University of Toronto, Canada

Aim: To assess the effect of physician use of a structured asthma flow sheet in the education of patients with asthma.

Method: One hundred physicians were asked to assess 10 asthma patients, who were initiating HFA-beclomethasone treatment, at two visits four weeks apart. A structured flow sheet was used to document asthma control and assess patient education implementation. An anonymous patient survey assessing patient and physician knowledge of disease, symptoms, and quality of life were completed after the first visit (V1).

Results: Sixty-one physicians and 374 patients participated; 294 had V2 assessment, and 257 submitted the survey. Respiratory tract infections and dust were the asthma triggers reported for the most patients by physicians (57% and 34%) and by patients (53% and 41%), respectively. At V1, only 34% of patients had a previous diagnostic spirometry. At V1 and V2, respectively, 57% versus 73% had a personalized action plan completed or ordered, 30% versus 34% had formal asthma education completed or ordered, and 60% versus 70% had inhaler demonstration completed. Smoking cessation was or had been discussed with 21% and 24% of patients at V1 and V2, respectively. In the surveys, 95% of patients reported having been taught on their medications, including what was their medication (68%), why take them (68%), when to take them (75%) and how to take them (70%).

Conclusion: In an uncontrolled study, use of a structured asthma flow sheet similar to the one found at www.fpagc.com was accompanied by an increase in patients being educated on asthma

Conflict of interest and funding: Study funding by Graceway Canada

032: Pregnancy, Smoking and Vaccines

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Aims:

1. To know the smoking status of pregnant women and their partners.
2. To know the influenza vaccination status of pregnant women, and the recommendations made by health workers promoting vaccination.
3. To assess the relationship between pregnancy, vaccines, maternal smoking and respiratory disease in postpartum neonates.

Method: Subjects: 398 children born between 01/07/2008 and 30/06/2009. Telephone interviews were conducted with the mothers using a previously-validated questionnaire. The period in question matched the 2nd and 3rd trimesters of pregnancy and any influenza vaccination period. Surveys conducted by administrative (40%) and healthcare (60%) staff in the period 01/01/2010 and 28/02/2010. Cross sectional study. Semi-urban area.

Results:

- a) On telephone enquiry, 51% answered: 33% agreed to the study, 15% deferred, and 3% refused. Wrong number in 1% of cases, and 48% did not answer.

There was no change if the interviewer was administrative or medical staff.

- b) Age of mother (mean = 32.29 years). 16% of women had no current partner. Education: no education: 3%, primary: 13% Secondary: 19%; high school: 48%; college: 16%. Work: 74.19%.

- c) History of smoking:

Smokers: 22.58% - and all quit when they became pregnant. Postpartum relapse of non-smokers: 32% never smoked, 20% quit during pregnancy and did not relapse, 32% were ex-smokers prior and 16% have current addiction. 20% of smokers received advice and assistance by AP.

Partners of smokers:

- Group total: not smoker: 45.2%, ex-smoker: 22.6%, smoking: 32.2;
- Group with women smokers: never-smokers: 5% ex-smoker: 21%, smoking:

74% female - Group with women never-smokers: never-smokers: 54%, ex-smoker: 23%; smoking: 23%.

- d) Influenza vaccines: 6.45%; recommendations to 16% (family physicians 60%; nursery: 20%, midwives 20%; gynaecologists: 0%)

- e) Respiratory infections in women and 9% and 32% infants (repeated at 3%).

Conclusions:

1. The completion of calls was high (33%).
2. Administrative tasks were perfectly acceptable.
3. Prevalence of smoking matched the general population (22.58%); there was a high prevalence of smoking amongst the partners of pregnant women (32.25%).
4. Relationship between smoking / mother / postpartum relapse, and smoking partner ($p < 0.001$)
5. Very low-influenza vaccination coverage (6.45%), very low influenza vaccination recommendations by health and absent in gynaecology.
6. No significant relationship between respiratory infections / smoking / influenza vaccine

Conflict of interest and funding: No

092: COPD and its impact on ability to continue to work: an international survey

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Aim: COPD affects large numbers of people of working age. COPD Uncovered is an international study which measured the personal, social and economic burden of disease in this population. Here the age, disease severity, and co-morbidities are presented according to employment status to identify the characteristics of individuals across the groups.

Method: 2426 respondents from 6 countries (Brazil, China, Germany, Turkey, UK, US) were recruited utilising a mixed methods design. Employment status was recorded as working, not working and premature retirement due to COPD. Disease severity was assessed using MRC scores (Mild: 1-2, Mod 3-4, Severe 5). See http://www.theipcrj.org/abstracts_2011/fletcher_employment_abstract_MFHA.doc for tables.

Results: The results suggest early retirees reported; greater disease severity than workers (MRC m: 4.1v 3.1, $p < 0.005$), more co-morbidities (m:2.5 m:1.1) and were more likely to report anxiety and depression. 60% of retirees had mild or moderate disease v 91% in work 64% (n284) of early retirees did so over 4 years ago.

Conclusion: Disease severity at retirement was unknown and may have worsened post retirement. It is highly likely that disease severity will limit ability to work depending on occupation however the trigger to retire may be due to other factors including co-morbidities. Workers registered the lowest prevalence of psychological disorders, it is unclear whether this is due to milder disease, age or employment status. This would be worthy of further study. This data suggests that employers and occupational health professionals have an important role in keeping people with COPD in active work for longer.

Conflict of interest and funding: This study was funded by a grant from Novartis.

091: The impact of COPD and psychological co-morbidities in primary care

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Aim: Anxiety and depression frequently co-exist with COPD and breathlessness has been associated with anxiety attacks. Anxiety and depression is also frequently undiagnosed. This international survey study measured the personal, social, health and economic impact of COPD on the younger, working age population.

Method: A cross-sectional survey was conducted in Brazil, China, Germany, Turkey, UK and US (n= 2426). A mixture of telephone and face-to-face interviews were used. GP visits were recorded, along with disease severity and anxiety and depression. Severity was measured using the MRC dyspnoea scale (Mild 1-2, Moderate 3-4, Severe 5). Participants were also asked if they had experienced a recent anxiety attack and whether this anxiety attack was due to their breathing problems.

Results: 50% respondents had visited their GP in the last month as a result of their COPD. 21% also had anxiety, and 25% depression, compared to 17% and 21% respectively across the entire cohort. The majority of people with anxiety and depression had moderate or severe disease. 27% experienced anxiety attacks and 63% (of these) said this was due to breathing problems (see Table 2). Most of those having anxiety attacks due to breathing problems had moderate disease, but a number had mild disease. See tables at http://www.theipcrj.org/abstracts_2011/fletcher_abstract_primary_care_anxiety_and_depression_tables.doc

Conclusion: Patients frequently attend their GP for their COPD. Some may also have anxiety and/or depression. Primary care practitioners therefore have a key role in initiating interventions for both conditions. The extent of anxiety and depression may suggest a need to screen for mental health conditions in order to support patients holistically. As a large number of people having an anxiety attack experience this due to their breathing problems and many of these have mild COPD, they may possibly benefit from psychological interventions and breathing techniques.

Conflict of interest and funding: Funded by a grant awarded by Novartis

050: Lung function and anxiety in association with dyspnoea - the HUNT study

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Aim: Anxiety is common among people with obstructive lung diseases. However, reduced lung function in combination with anxiety in relation to the reporting of dyspnoea is not well studied. We aimed to study the association between reduced lung function and dyspnoea, and how anxiety affects this association.

Method: We analysed data on 5627 women and 5066 men who participated in the Lung substudy of the Nord-Trøndelag Health Study in 1995-97. In a cross-sectional design we used logistic regression to calculate multivariably adjusted odds ratios (ORs) for dyspnoea associated with levels of FEV1% predicted and anxiety (measured by the Hospital Anxiety and Depression scale).

Results: Among women with FEV1 $\geq 100\%$ predicted, those who had anxiety had an OR (95% confidence interval) for reporting dyspnoea when walking of 1.99 (0.68-5.84) compared to those without anxiety. Using the same reference group (FEV1 $\geq 100\%$ predicted and no anxiety), women with FEV1 80-99% predicted had an OR of 2.46 (1.25-4.83) without anxiety and 7.71 (3.65-16.28) with anxiety, whereas those with FEV1 $< 80\%$ predicted had an OR of 6.23 (3.45-11.28) without anxiety and 15.14 (7.13-32.12) with anxiety. The corresponding ORs among men without and with anxiety were 1.00 (reference) and 4.46 (0.86-23.19); 1.10 (0.44-2.73) and 5.17 (1.88-14.24); and 5.75 (2.23-14.81) and 15.19 (4.74-48.64), respectively. The ORs for reporting dyspnoea at rest and waking up by dyspnoea showed similar patterns in both women and men.

Conclusion: Reduced lung function in combination with anxiety had a stronger association with dyspnoea than reduced lung function alone.

Conflict of interest and funding: There is no conflict of interest.

This project has been financially supported by the Norwegian ExtraFoundation for Health and Rehabilitation through EXTRA funds, the Liaison Committee between the Central Norway Regional Health Authority (RHA) and the Norwegian University of Science and Technology (NTNU), and the Leif Richard Erichsen and wife Maren Hertzberg Erichsens fund for Norwegian medical research.

060: Autoimmune disease in parents is a risk factor for the development of allergic disease in their offspring

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Aim: Autoimmune disease and allergy, are thought to be mutually exclusive. These diseases, however, are not only characterized distinctions but share common denominators as well (genetic and environmental influencing factors, co-occurrence in patients, geographic distribution, rise in prevalence since 1950). This may imply that both types of diseases share etiologic influences and show intra-familial co-occurrence.

Method: In population based general practice pilot research (n=6328 households, RNH data) it was tested if any autoimmune disease in parents (rheumatoid arthritis or ankylosing spondylitis and/or psoriasis and/or diabetes mellitus type 1 and/or multiple sclerosis and/or colitis ulcerosa or Crohn's disease) increases the occurrence of any allergy in their offspring. A secondary research question was focused on the influence of the specific autoimmune diseases. A multiple logistic regression analysis was carried out.

Results: Any autoimmune disease in fathers, irrespective of co-occurrence of a diagnosis of allergic disease, showed to increase the occurrence of any allergy in their children ($p=0.046$, OR 1.312, CI 1.005 1.712). Autoimmune rheumatoid diseases in the mothers (rheumatoid arthritis or ankylosing spondylitis, OR 1.736, CI 1.033 2.915) and psoriasis in the fathers (OR 1.443, CI 1.030 2.021), showed to be of main interest.

Conclusion: Further research in larger samples, taking relevant environmental factors into account, will give more definite information on the effect of autoimmune disease in parents on the development of allergic disease in their

offspring. This information may be useful in the diagnostic process for allergic diseases, expanding the knowledge on the pathogenesis of allergies and thereby on the development of new therapies.

Conflict of interest and funding: None

096: Including variability as a criterion increases diagnostic accuracy in elite asthmatic swimmers after mannitol and exercise challenge

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Aim: An increased frequency of asthma have been reported among swimmers possibly due to a mix of endurance training and exposure to chloramines in indoor environments. The aim of the present study was to investigate the prevalence of exercise induced asthma (EIA) among elite swimmers and to compare sport specific exercise provocation with mannitol as an alternative indirect test.

Method: 101 elite or elite aspiring swimmers, aged 14-24 years were investigated with mannitol provocation and a sport specific exercise challenge test. Mannitol positivity was defined as either direct FEV1 PD15 with a cumulative dose of <635 mg, or as β_2 -reversibility >15% after challenge. A direct positive exercise test was defined as a drop in FEV1 of 10% compared to baseline or a difference in FEV1 of >15% either spontaneous (variability) or with β_2 -agonist (reversibility).

Results: We found a high prevalence of mannitol and/or exercise positivity. Twenty six were mannitol direct positive while 43 were positive with the extended criteria (including reversibility). Fourteen were direct exercise positive, while 24 were positive when using extended criteria (including variability and reversibility). When including reversibility and variability to define a positive test the sensitivity for current asthma, asthma with exercise induced symptoms increased while the specificity roughly remained unchanged. Direct positivity for mannitol or exercise poorly overlapped but was much better when extended criteria were used.

Conclusion: We found a high prevalence of EIA among elite swimmers. The use of variability and reversibility as additional criteria to define a positive test provided.

Conflict of interest and funding: Independent grants from AstraZeneca, Schering-Plough and MSD. Nigaard /Pharmaxis sponsored the study with Aridol® tests (Mannitol provocation test).

039: Identification of People with COPD from Administrative Data

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Aim: Defining a set of criteria from administrative data which can be used to identify patients with Chronic Obstructive Pulmonary Disease (COPD) in a Danish practice population.

Method: Seven GPs from Aarhus County were asked to identify all their patients with COPD. For the 266 patients identified, administrative data on hospital contacts for lung-related-diagnoses, redeemed prescriptions for medicine for lung-related-diseases and on lung-function-tests were combined to develop an algorithm identifying the highest proportion of patients with COPD with the least criteria involved. We tested nine different algorithms with two to four criteria. The best algorithm was used to identify patients with possible COPD in five GP practices in Central Denmark Region and two municipalities. GPs and patients were asked to verify the diagnoses.

Results: The tested algorithms identified from 70.7% to 72.6% of patients with COPD in seven GP practices. We chose an algorithm with a positive predictive value of 72.2% and three criteria: 1) hospitalcontact at least once during the last 5 years or 2) redeemed prescription at least twice during the last year or 3) spirometry done at least twice at different dates during the last year. 45.9% of 532 patients were verified to have COPD by the five GPs. The GPs indicated "not sure" for 19.1%. 2,905 patients were identified by the algorithm in two municipalities and 1,985 responded. 72.8% verified that they had COPD.

Conclusion: An algorithm based on administrative data has been developed with sufficient positive predictive value to be used as screening tool to identify patients with COPD in a population. This may be useful in identifying COPD patients for integrated care and to provide proactive care for the whole population with COPD.

Conflict of interest and funding: The study is funded by the Central Denmark Region, Ringkoebing-Skjern Municipality and The Research Fund at Aarhus University. The authors declare that there is no conflict of interest.

071: An initiative with community-oriented free spirometry in Heraklion, Crete, Greece: early diagnosis and education on COPD

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Aim: The aim of this study was to present the results of the spirometry days that were offered free to Heraklion residents, Crete, Greece in years 2005-2010.

Method: People that accepted the invitation, completed a questionnaire that included demographic informations as well as details about smoking habit, pack years and respiratory symptoms. Afterwards all patients performed a spirometry.

Results: 820 citizens of median age 52.8 (min-max) (31- 84) responded to the invitation and performed a spirometry. Out of the 820 participants, 630 were males (76.8%), 61.2% were smokers, 20.8% were former smokers. An acceptable spirometry was obtained in 782 participants (95%). COPD diagnosis (FEV1/FVC < 0.70) has been set in 104 patients (12.7%), median age 59 (min:47 max:90). 56.9% of the participants didn't know anything at all about COPD (43% of the participants that received a COPD diagnosis). COPD stages were: Stage : 10 (9.6%), stage : 65 (62.5%), stage : 22 (21%) & stage IV: 7 (7.9%).

54 (52%) from the participants that obtained a COPD diagnosis didn't know that they were suffering from COPD. Patients with COPD had more pack years than those that didn't ($x \pm SD$) (46.7 \pm 29 versus 33.7 \pm 17).

Conclusion: The offer of a free-community oriented spirometry added significantly in the early COPD diagnosis. The suspicion that public was not aware of COPD was confirmed. About half of the people that were COPD patients ignored their disease.

Conflict of interest and funding: None

064: Association of co-morbidity and mortality in COPD

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Aim: The aim of this study was to investigate the association of comorbidity and underweight with all cause-mortality in COPD patients.

Method: A total of 1548 patients with a diagnosis of COPD were randomly selected from 56 primary care and 14 secondary care centres in Sweden. The response rate was 75%. Information was collected using questionnaires in 2005 and record review for the period of 2000-2003. The Swedish Board of Health and Welfare provided mortality data. Lung function and history of comorbidities were obtained from the patients' records. This analysis included patients with available spirometry data. Cox's proportional hazards model was used to estimate the hazard ratio.

Results: A total of 552 patients (aged 34-75) were included in the study, 43% men (mean age 65) and 57% women (mean age 62). Of all, 27% were current smokers and mean FEV1 (percent of predicted) was 58. Over five years, in total 120 patients (22%) died, 13% in primary care and 33% in secondary care. Mortality was significantly higher in patients with ischemic heart disease/cardiac failure, hazard ratio 1.91 (95%CI 1.30-2.80), with hypertension, hazard ratio 1.83 (95%CI 1.22-2.75) and with underweight (BMI<20), hazard ratio 1.74 (95%CI 1.12-2.70) after adjustments for age, sex, smoking, education, level of care and lung function. There was no significant difference in mortality for patients with diabetes or depression.

Conclusion: Heart disease, hypertension and underweight were in this study associated with higher mortality in COPD patients.

Conflict of interest and funding: No conflicts of interest.

066: Feasibility of a prevalence and burden of COPD survey in a rural area of Uganda: Fresh air pilot-survey Uganda
van Gemert FA, Nabadda N, Nakanwagi A, Luzige S, van der Molen T, Jones R, Tsiligianni I, Williams S, Chavannes NH

Department of General Practice, University Medical Center Groningen, the Netherlands

Aim: Assessing beliefs and attitudes concerning respiratory health, smoking, traditional ways of cooking, and the use of spirometry in a rural area of Uganda.

Method: A qualitative survey has been conducted in 9 rural villages in the district of Masindi, using focus group discussions among men, women and community leaders, as well as key informant interviews among healthcare workers. Spirometry with solar energy has been tested.

Results: Out of the 37 at-risk participants, aged between 30 and 75, we found 7 patients with COPD, 2 with asthma and COPD, and 2 with asthma. Contributory factors for COPD such as biomass fuel use, smoking and untreated asthma are unknown. The influence of local traditions and beliefs is high. Women spent about 4 to 8 hours a day using wood for cooking indoor, and children between the age of 5 and 12 have to help their mother to learn the art of cooking. Chronic cough is common and sometimes even stigmatized. The knowledge of obstructive respiratory diseases is poor, although respiratory symptoms are common among women and men, and even children. TB-negative is an often mentioned diagnosis. Medication for asthma and COPD is hardly available, and treatment is focused on acute exacerbations.

Conclusion: The knowledge of asthma and COPD and their risk factors is poor and has to be increased. The development of local expertise in the provision of healthcare and in healthcare research should be an integral component of future research.

Conflict of interest and funding: This pilot survey has been funded by the IPCRG. There is no conflict of interest.

067: Implementation of Asthma Guidelines in Primary Care

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Asthma Society of Ireland, Dublin, Ireland

Brief outline of context: A study of barriers and facilitators to implementation of evidence based guidelines in primary care in Ireland.

Brief outline of what change you planned to make: Asthma Society of Ireland (ASI) wished to implement asthma guidelines in primary care to improve patient care, reduce variation in care, help decision making, improve referral processes.

Assessment of existing situation and analysis of its causes: The HARP study found 60% of patients had uncontrolled asthma. ASI collaborated with Dept. of Health, Health Service Executive (HSE) and healthcare professional (HPC) bodies to develop the Asthma Management Programme. Prior to this initiative there was no consistent guideline approach to asthma care in Ireland.

Strategy for change: 25 primary care teams completed guideline based asthma education and practical training on spirometry, inhaler technique, peak flow monitoring and written asthma plans. Patients were followed in the programme for 6 months.

Measurement of improvement: Final analysis of HPC attitudes found, guidelines easy to follow (92.7%), helped with decision making (87.9%), improved teamwork (73.1%), improved referral process (70.8%), improved patient care (92.7%), facilitated cost effective care (70.7%), reduced variation in management (77.5 %)

Effects of changes: HSE identified the ASI programme as a core deliverable in a systematic approach to tackling asthma in Ireland. The practical programme including patient and HPC education has been incorporated into the HSE National Asthma Programme.

Lessons learnt: Strategic collaboration between patient organisations, HPCs

and government can influence policy and facilitate change to improve patient care.

Message for others: Guideline based asthma management programmes can be implemented successfully in primary care if practices are provided with resources for diagnosis, management and patient education.

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

053: Implementing HARP (iHARP): improving asthma control through assessment and inhaler education

Price D, Haughney J, Ryan D, Gruffydd-Jones K, Roche N, Lavorini F, Papi A, Infantino A, Bosnic-Anticevich S, Virchow JC, Roman M, Lisspers K, Stallberg B, Henrichsen S, Chrystyn H
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Brief outline of context: The International Primary Care Respiratory Group's (IPCRG) Helping Asthma in Real Patients (HARP) initiative called for better provision of information for patients to improve understanding and asthma control.¹ (1. Haughney J, et al. *Allergy* 2010;**65**:413-414)

Brief outline of what change you planned to make: Enhanced asthma reviews, including a structured inhaler technique assessment and improve patient engagement.

Assessment of existing situation and analysis of its causes: In response to HARP and recent literature on frequent inhaler handling² and inhalation problems,^{3,4} an international steering committee will implement an enhanced asthma review service. (2. Roche N, et al. *ERJ* 2002;**19**:246-51; 3. Hardwell A, et al. *PCRJ* 2011;doi:10.4104/pcrj.2010.00088; 4. Lavorini F, et al. *PCRJ* 2010;**19**:335-341)

Strategy for change: iHARP asthma reviews will be integrated into routine practice, with additional nurse support provided as necessary. A combined review of clinical records and questionnaire responses will be carried out as will guided reviews of inhaler technique. 5100 patients form across the UK, Germany, France, Italy, Spain, Sweden, Norway, Australia will undergo the iHARP review between June 2011-February 2012.

Measurement of improvement: Therapy recommendations, in-line with IPCRG asthma control assessment recommendations,⁵ will be returned to the clinician for consideration. Patients will receive appropriate inhaler training and lifestyle advice. (5. Haughney J, et al. *Respir Med* 2008;**102**:1681-1693)

Effects of changes: Hypothesised results include: more tailored asthma management; improved patient engagement and empowerment, improved identification of common handling and inhalation errors and opportunity to provide appropriate inhaler training.

Lessons learnt: Will be disseminated following completion of the service.

Message for others: Will be disseminated following completion of the service.

Conflict of interest and funding: Co-funded by Mundipharma International Limited and Optimum Patient Care.

097: CASPIR, a nation wide programme on spirometry in primary care: results and plans

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COPD & Astma GP Advisory Group (CAHAG) Netherlands

Brief outline of context: There are concerns about the quality of spirometry performance in primary care. This was confirmed by research done in Dutch general practice.

Brief outline of what change you planned to make: The CASPIR (COPD AsthmaSPIrometry) project was initiated by the professional groups (Dutch association of Lungfunction Technician NVLA, Pulmonary Physicians NVALT, GP's CAHAG, practice nurses V&VN in cooperation with the Radboud University Nijmegen) with the goal of enhancing development of an interactive course for spirometry for primary care to improve spirometry performance.

Assessment of existing situation and analysis of its causes: Due to changes in the reimbursement and practice accreditation, a formal training is necessary, in cooperation with GP's with special interest in Asthma and COPD, lung-function technicians and pulmonary physicians.

Strategy for change: A blended learning course which consists of five elements was designed consisting of two group sessions on knowledge and skills of spirometry, a visit to the lungfunctionlaboraty, portfolio with performed flow-volume loops, biological check or 3L syringe control and a practical and theoretical exam. A special spirometry performance form for use in daily practice was developed. The follow up is a refresher course once a year.

Measurement of improvement: Number of participants, regional spread, number of parcipants flowing the complete course and number passing the exam.

Effects of changes: In two years, about 150 courses have been given in the Netherlands with more than 2500 participants. More than 80% passed all modules and exams. Some participants did extra work for their portfolio. A certification system has been set up and criteria for re-certification after 3 years formulated. Work is done on an e-learningmodule, distant quality control and feedback.

Lessons learnt: More attention for organizational aspects. Training of teachers necessary.

Message for others: It is possible to set up a nationwide programma. Cooperation with allied health professionals obligatory. A refresher course is important to maintain skills. Additional criteria and tools are developed to maintain quality in daily practice.

Conflict of interest and funding: The start-up of the CASPIR project was funded by an unrestricted grant of AstraZeneca, Boehringer-Ingelheim and GlaxoSmithKline.

059: COPD disease severity stratification obtained by electronic review of routinely collected primary care data

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Woodbrook Medical Centre

Brief outline of context: In COPD little is known with regards to quantification of different strata of severity and identification of high risk patients.

Brief outline of what change you planned to make: To characterise the burden of COPD by severity in our local health economy.

Assessment of existing situation and analysis of its causes: Beyond raw data concerning recorded prevalence of disease and hospital admissions, no characterisation of our population existed

Strategy for change: Practice databases were interrogated for routinely held data for COPD using OPC software. Reports were provided at individual, practice and locality level. Following analysis a practice visit was undertaken by a member of OPC (FDR) to provide feedback.

Measurement of improvement: Practices were offered an electronic review of routinely collected data from patients with COPD. 41 accepted the electronic review.

Effects of changes: These practices had a total population of 310, 240 of whom 4214 had COPD as a coded diagnosis (prevalence 1.4%) Known Severity of COPD in LCR: COPD based on % predicted FEV1 (classified according to updated NICE CG101)

Severity	% of COPD Patients	Number of COPD Patients
Mild	14.2%	438
Moderate	49.8%	1534
Severe	28.8%	887
Very Severe	7.2%	221

Further stratification employing the DOSE index revealed 177 high risk patients, suitable for active case management. <http://ajrccm.atsjournals.org/cgi/content/abstract/180/12/1189> .

Lessons learnt: Stratification should facilitate individualise patient management by permitting therapy mapping. Furthermore, it permits the identification of those patients who are most at risk of exacerbation/hospitalisation.

Message for others: Electronic review of routinely held data using appropriate software offers the potential to improve individual patient care, practice level care and planning for community infrastructure by characterising disease severity

Conflict of interest and funding: No conflicts:

069: Integrative collaboration in the Innovative Medicines Initiative – harvesting synergies

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Brief outline of context: U-BIOPRED is a consortium within the Innovative Medicines Initiative with an ambitious objective of redefining the sub-phenotypes of severe asthma by leveraging a systems biology approach applied to clinical data, data from high throughput techniques to generate “handprints” which would serve as multi-dimensional biomarkers. There are 40 partners.

Brief outline of what change you planned to make: Every effort was made to work in a highly integrated way: agreement and delivery of objectives, risk identification and problem solving. The plan was to hold frequent decision-oriented teleconferences and meetings minuted in a structured manner that enables recall of discussions.

Assessment of existing situation and analysis of its causes: The IMI is an effort where pharmaceutical companies function more as active partners no funders and requiring a new manner of collaboration.

Strategy for change: An iterative strategy of utilizing online collaboration tools as well attention to group formation.

Measurement of improvement: Success can be judged by collaborative achievements

Effects of changes: Combining data from two different partners a track in the development of an animal model could be abandoned – estimated 6 months time savings. A Knowledge management system was established using a system developed by one company, deployed in an academic center and validated using data from another company.

Lessons learnt: Working in a large integrative consortium has a myriad of challenges, that can be mitigated and counterbalanced by the synergistic gain from structured collaborative problem identification and collaborative problem solving.

Message for others: The rise of P4 medicine accentuates the importance of collaboration and the added value of working in a structured collaboration can outweigh the coordination challenges inherent to large multidisciplinary working groups.

Conflict of interest and funding: Author is the managing director of BioSci Consulting. U-BIOPRED project is funded the IMI- a joint technology initiative funded by the European Commission with funding from the European Commission

098: Two years Integrated Care for asthma/COPD in primary care: improvements in registration and care

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(www.deondernemendehuisarts.nl)

Brief outline of context: The DOH Caregroup implements integrated care for COPD and asthma in primary care and has contracts with health insurance companies.

Brief outline of what change you planned to make: Improving Quality of Care by implementing structured multidisciplinary care in primary care.

Assessment of existing situation and analysis of its causes: Baseline measurements showed deficiencies in care.

Strategy for change: Within the care group DOH (+ 100.000 patients registered) 50 GP's and 23 practice-nurses are working in group of practices that are all Dutch College certified. Implementation of the integrated care programme was done by educational sessions (8), protocol-books on care and registration, additional support through website/newsletter, annual feedback meetings and two times a year benchmarkdata feedback.

Measurement of improvement: Measurements (4) were done in 2008-2010 using the Dutch National set of quality indicators. Patients included where those treated in primary care only. Th practice registration system was the primary source of data.

Effects of changes: The prevalence of COPD in the care program was on average 1%, asthma 1.9%. Specialist treatment in COPD was 0.9% and in asthma 0.7%. The baseline measurement showed much room for improvement both on registration and care provided. On average 25% of patients used no medication. Improvements from baseline were seen (37% in asthma and 34% in COPD). The registered number of exacerbations was low. Referrals to physical therapy and smoking cessation interventions were hardly registered.

Lessons learnt: The diagnostic process is complex. It is possible to collect indicators of care extracted from the practice registration system, however with great effort. More attention has to be paid to smoking cessation and primary care rehabilitation interventions.

Message for others: Implementing integrated care for asthma and COPD is possible and shows demonstrable improvements in both registration and care provided.

Conflict of interest and funding: None

045: A pilot study of the use of near-patient C-Reactive Protein testing in the treatment of adult respiratory tract infections (RTIs) in one Irish general practice.

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Aim: New approaches are being sought to safely reduce community antibiotic prescribing. A recent study demonstrated that CRP testing resulted in decreased antibiotic prescribing for lower RTIs in primary care but there is little other relevant published primary care data available. This study aims to describe the performance of near-patient CRP testing, in patients over the age of 18 years, with acute cough and/or sore throat, in routine clinical practice.

Method: A pilot with a cross-sectional design. The first 60 recruited patients were treated with routine clinical management, and GPs had no access to a CRP test. For the subsequent 60 patients, CRP testing was available. 3 GPs in 1 Irish primary care practice recruited 120 eligible patients over 5 months in 2010. Primary outcome was antibiotic prescription at index consultation. Secondary outcomes were numbers of delayed prescriptions, patient satisfaction immediately after consultation, and re-consultations and antibiotic prescriptions during 28 days follow-up.

Results: Thirty-five (58%) patients in the no-test group received antibiotic prescriptions compared to 27 (45%) in the test group. Both groups demonstrated similarly high level of patient satisfaction (85%). Fifteen (25%) patients in the CRP test group re-attended within 28 days compared to 9 (15%) in the no-CRP test group.

Conclusion: This pilot study confirms the feasibility of a full trial in Irish general practice. It suggests use of near-patient CRP testing may be associated with reduced antibiotic prescribing for RTIs, high levels of patient satisfaction and increased re-consultations. We intend to pursue a larger trial in a newly established regional primary care research network.

Conflict of interest and funding: The Discipline of General Practice, NUI Galway has received unrestricted educational funding from MSD, Menarini and Pfizer pharmaceutical companies. This funding has been solely used to support educational meetings for general practitioners who take medical students from NUI Galway. The Claddagh Medical Centre is a member of WestREN (Western Research and Education Network- an academic general practice research network in the West of Ireland) and received an unrestricted WestREN Research Bursary funded by MSD to support conduction of this study.

054: Development of a questionnaire to measure patients' self-reported illness and recovery in acute respiratory infections

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Research Unit for General Practice, University of Copenhagen

Aim: To develop a questionnaire with high content validity and adequate psychometric properties measuring patients' degree of restrictions from acute respiratory infections to be used in clinical therapeutic trials in general practice.

Method: Items belonging to selected domains were derived from previous disease specific questionnaires and group interviews. The item bank was tested for content validity (relevance and coverage) in focus groups including patients from general practice with acute respiratory infection. This resulted in a draft version of the questionnaire. Patients visiting their general practitioners with and without an acute respiratory infection were asked to complete the draft version. These data were used to test the domains for unidimensionality and ensure invariance of the items by item response theory (the partial credit Rasch model) before completing of the final questionnaire.

Results: 269 patients completed the draft version of the questionnaire; 10 were excluded due to missing data or exclusion criteria. Of the 259 remaining patients 64% were females, the median age was 41 years (range 18-77 years) and 121 (47%) had an acute respiratory infection. Ten GPs recruited between 5-40 patients each. Rasch analyses are still pending and will be presented at the conference.

Conclusion: Acute Respiratory Infection Questionnaire (ARIQ) is currently under evaluation for validity and reliability to serve as an outcome measure for clinical trials evaluating therapy and/or monitoring of acute respiratory infections in general practice. Complete results and updated conclusions included final version of ARIQ will be presented at the conference.

Conflict of interest and funding: Authors declare no conflicts of interest. The study was funded by PLU (Trust for Development of General Practitioners) and MPU (Trust for Cooperation in Primary Care).

048: Cross-cultural adaptation of Control of Rhinitis and Asthma Test (CARAT)

Fonseca JA, Correia de Sousa J, Sá-e-Sousa A, Burnay E, Tsiligianni I, Nogueira-Silva L, Jacinto T, Pereira A, Demoly P, Yaman H, Garcia Larsen V, Silva B, Del Giacco S, Yawn B, Román Rodrigues M, Mascarós E, van der Molen T, Morais-Almeida M, Bousquet J
CINTESIS, Universidade do Porto

Aim: To develop versions of the Control of Rhinitis and Asthma Test (CARAT) in 9 countries in order to be used as a tool to implement ARIA guidelines.

Method: CARAT is a 10-item questionnaire, primarily developed and validated in Portuguese, assessing the disease control of adults with allergic rhinitis and asthma. Cross-cultural adaptation of CARAT within different countries was organized in 3 phases, following GA2LEN network recommendations: Forward translation(FT); Backward translation(BT) and Patient testing(PT). In the FT, 2 independent forward translations of the original CARAT were produced. Translators and investigators convened to reach a single reconciled version. This reconciled version was translated back to Portuguese (BT). CARAT's authors then compared the original questionnaire and any problems detected were reported. This report guided forward translators to produce the Test Version. This was tested in 10 adult patients along with an interview that covered issues as questionnaire understanding and interpretation (PT). To support this study a web tool was developed at www.caratnetwork.org.

Results: The cross-cultural adaptation process was conducted in 9 countries. Two countries completed the 3 phases (France and Turkey). English (UK) and Portuguese(BR) versions are ready to be tested on patients. Italian English (US), Greek and Spanish are in the BT and Dutch version is in the FT phase.

Conclusion: CARAT is being successfully adapted in different languages. Clinical validation for these languages should follow.

Conflict of interest and funding: No conflict of interest for this study; CARAT team received a research grant from MSD Portugal. Dr. Correia de Sousa is an unpaid member of the scientific board of AstraZeneca Foundation Portugal. His department has received research funding from AstraZeneca in the past.

065: The economic impact of asthma in patients from primary health care

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Aim: To assess the economic impact of asthma in patients from Ponte and Ronfe Family Health Units, relating the direct costs of asthma to its control and severity.

Method: A cross sectional study was conducted in a sample of 212 patients, selected randomly from the practice's registry of asthma patients. Using an interview, demographic variables, classification of asthma severity, levels of asthma control, health services cost (consultations, emergencies, hospital admissions and diagnostic tests) and the cost of treatment were collected.

Results: The total monthly cost was 5494€, with a monthly average of 53.87€ per patient. The average cost of health services per patient ($p = 0.007$), the costs of medication ($p < 0.001$) and the total costs ($p < 0.001$) are inversely proportional to the degree of asthma control. Statistically significant differences were also found between asthma control groups in the costs with consultations ($p=0.020$), relieve medication ($p<0.001$) and control medication ($p=0.002$). The average age rose gradually with the increase in asthma severity. Medication was the variable with the greatest impact on costs, reaching 52.17% of total costs, followed by hospital admission (17.86%).

Conclusion: The cost of health care relates directly to the severity and control of asthma. The implementation of new measures with more patient empowerment, a regular follow-up, with better use of preventive medication and a more thorough use of guidelines could contribute to a better asthma control, thus reducing the overall costs of the disease.

Conflict of interest and funding: No conflict of interest declared. Funding: study conducted within the National Health Service.

056: Differences between primary and secondary care COPD management: global results from the hidden depths survey

Kaplan A, Barnes N, Calverley P, Rabe KF

University of Toronto, Canada

Aim: To identify whether there are differences in the management of COPD patients by primary and secondary care clinicians in a real-world, global setting.

Method: A cross-sectional online survey of clinicians from 14 countries conducted from July to September 2010. Clinicians were recruited from a research panel with >500,000 physicians. Interviews were conducted with both respiratory specialists (Sps) and primary care doctors (GPs) seeing ≥ 20 or ≥ 10 COPD patients per month respectively.

Results: 1,400 clinicians were interviewed (GPs=893 and Sps=507). GPs saw an average of 47 patients with COPD per month and Sps 105. The proportion of GPs (73%) and Sps (75%) using spirometry for diagnosis was similar. To manage their patients' COPD GPs reported using less anticholinergics (66%(593) than Sps (87%(440)), less pulmonary rehabilitation (48%(433)) than Sps (76%(386)) and less oxygen therapy (46%(410)) than Sps (72%(363)). Use of inhaled corticosteroids alone was higher for GPs (27%(239) than Sps (13%(66)). Both GPs (516(58%) and Sps (308(61%) prioritized quality of life, but GPs were less likely to prioritize exacerbation prevention 331(37%) and more likely to prioritize improvement in lung function 231(26%) than Sps (232(46%) and 69(14%) respectively). GPs were more likely than Sps to think that treatments were effective in preventing exacerbations (661(74%) vs. 342(67%)) but less likely to think that hospitalisation for a COPD exacerbation had a major long-term impact (369(41%) vs. 285(56%)).

Conclusion: Several differences were identified. GPs recommend inhaled corticosteroids alone more often than Sps and comparatively under use pulmonary rehabilitation. GPs also place less priority on exacerbations but believe that treatments are relatively effective in their prevention. In addition, GPs underestimate the long-term impact of these events.

Conflict of interest and funding: Study funded by Nycomed

057: Understanding COPD patients' fears: global results from the hidden depths survey

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Aim: To gain insight into the emotional impact and fear associated with COPD in a real-world, global patient population

Method: A cross-sectional online survey of COPD patients from 14 countries conducted between July and September 2010. Patients were recruited from general population opt-in research panels with >18,000,000 members. 255,710 people were invited to participate and 75,233 respondents were screened. Patients had clinician diagnosed COPD and were also suffering from at least two symptoms of breathlessness, sputum production, cough, exertional chest pain, regular chest infections especially in the winter, or exertional leg pain. Patients self-classified their COPD severity using the MRC dyspnoea scale.

Results: 2,000 patients were interviewed (1231=MRC1&2 and 769=MRC3,4&5) with a mean age of 53 years. 907(74%) MRC1&2 and 629(82%) MRC3,4&5 patients were currently worried about their long-term health and 469(38%) MRC1&2 453(59%) MRC3,4&5 patients feared premature death due to COPD. Of those who had experienced an exacerbation (1534) 409(47%) MRC1&2 and 416(63%) MRC3,4&5 were scared of premature death during an event. 590(48%) MRC1&2 and 613(80%) MRC3,4&5 considered their COPD to be serious. The 1203 patients who considered their COPD to be serious were more likely to be scared that their COPD may cause them to die prematurely 761(63%) and also more likely to think that their doctor took their condition seriously 991 (82%) than those who did not (114(19%) and 395(53%) respectively).

Conclusion: COPD patients, regardless of severity, are scared by their COPD and this fear is heightened during an exacerbation. While many patients acknowledge that their doctors do take their condition seriously they remain scared. Clinicians should take these patients fears into account when managing COPD patients and their consultations.

Conflict of interest and funding: Funded by Nycomed

051: Possible cut-off values for stable or instable COPD as measured by the Clinical COPD Questionnaire (CCQ)

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Aim: Based on GINA the cut-off values for the Asthma Control Questionnaire (ACQ) have been established for 'well-controlled' and 'not well-controlled' asthma. Cut-off values for health status questionnaires like the Clinical COPD Questionnaire (CCQ) for use in COPD, however, are lacking. We wish to give insight into possible cut-off values of the CCQ by comparing it with the ACQ.

Method: In 7599 patients with respiratory disease, referred by the general practitioner to a diagnostic center, data on both the ACQ and CCQ were collected. Scores on both questionnaires were compared and possible cut-off values for the CCQ were determined by using the ACQ as gold standard.

Results: A diagnosis of COPD, asthma or a combination of asthma/COPD was established in 16,8%, 46,3% and 7,4% of patients. Mean ACQ and CCQ scores according to level of control (based on the ACQ) are presented in table 1.

Groups	Diagnosis	Mean ACQ	Mean CCQ
<0.75	COPD	0.31	0.69
	Asthma	0.32	0.63
	Asthma/COPD	0.35	0.66
0.75-1.50	COPD	1.07	1.39
	Asthma	1.08	1.31
	Asthma/COPD	1.07	1.28
>1.50	COPD	2.17	2.34
	Asthma	2.23	2.25
	Asthma/COPD	2.26	2.30

Conclusion: The average CCQ per ACQ-score has been calculated and using the ACQ as gold standard this study estimated the cut-off points for the CCQ to be <1 for COPD with stable disease and >1.7 for COPD with instable or uncontrolled disease.

Conflict of interest and funding: None

094: Tools to measure patient wellbeing in COPD

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Aim: To provide a guide for the family physician to help choose a tool to assess patients with COPD in his/her practice.

Method: A thorough search of relevant databases was conducted by a trained librarian (LA) for articles containing the words "COPD" and "tools". Abstracts were reviewed by two researchers (AC, LA) for relevance to primary care and complete articles obtained of those selected. These were loaded to a "drop-box" available to the members of the IPCRG research committee. Members were asked to rank their top ten preferred tools from those available and their reading of the literature related to them. Criteria to judge the tools by were developed.

Results: 1825 articles were identified relating to 84 tools for measuring COPD. 42 tools assessed patient wellbeing and these were ranked by the members. After ranking, nine tools were clearly in the leading group. These were entered on a table of the chosen criteria and the score for each criterion represented by a 'smiley face'. This table was produced as a laminated guide with user instructions.

Conclusion: From a multitude of tools for assessment of COPD in primary care we identified the most relevant nine and produced a guide for physician choice of tool by circumstance.

Conflict of interest and funding: The study was funded by the IPCRG. None of the authors have a conflict of interest with the study material.

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ABSTRACTS

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* = corresponding author

IPCRG13-1052

GENDER DIFFERENCES IN COPD: FINDINGS OF AN EARLY DETECTION PROGRAMME IN SINGAPORE

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Aim: This study aimed to examine gender differences in the prevalence of COPD as detected during a public awareness programme with spirometry measurement in screening for COPD in a self-selected population.

Method: A series of public education events were held in selected locations in Singapore from 2010 to 2011 on the causes, symptoms and risk of developing COPD. After completing the risk assessment questionnaire, participants were invited to undergo spirometry.

Results: 928 unique subjects participated in the public education events. The mean age was 52 years, 63% were men. 81 (8.7%) had clinically significant airflow obstruction (FEV₁/FVC<0.7). Of these, 33 subjects (41%) had mild COPD, (FEV₁ > 80% pred), 36 (44%) had moderate COPD (FEV₁<80% but >50%pred) and the remaining had severe COPD. There were no significant differences between the proportion of male and female subjects with COPD (8.9% and 8.4% respectively). The proportion of smokers/ex-smokers among men was significantly higher than among women (81% vs 30% respectively [p<0.001]). The smoking and age-group adjusted prevalence of COPD among males and females was 6.9% and 8.2% respectively.

Conclusion: In spite of significantly lower self-declared smoking rates among women, COPD was more prevalent in women as compared to men who were screened during the COPD public awareness programme in our study population. We postulate that this may be due to a general under-reporting of the smoking rates among women, or that women are more susceptible to smoking-related lung damage.

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IPCRG13-1059

HOW PAIN AFFECTS PHYSICAL PERFORMANCE IN PEOPLE WITH COPD

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Aim: The purpose of this study was to determine the relationship between pain and the six-minute walk distance test (6MWT), physical activity (assessed by 3D accelerometry), and concentric knee extensor torque in people with COPD.

Methods: Twenty-six people with moderate to severe COPD completed the McGill Pain Questionnaire (MPQ), the Brief Pain Inventory (BPI), the Short Form-36 (SF-36), and a form to list medications and co-morbidities. After spirometry, participants performed the 6MWT. Physical activity was monitored for two days using a DynaPort MiniMod Monitor 3D accelerometer. At least 3 days after the 6MWT, maximal and fatiguing concentric contractions of the knee extensors were assessed on a Biodex dynamometer. Correlations were performed between pain severity and 6MWT, physical activity, and knee extensor torque. These physical performance measures were compared in COPD patients with the most severe pain versus those with moderate to no pain.

Results: Pain severity was negatively correlated with 6MWT (p<0.05), and quality of life (p<0.05), and was positively correlated with body mass index (BMI) (p<0.001), and number of co-morbidities (p<0.001). Subjects with severe pain showed lower standing and activity times (p<0.01), lower 6MWT (p<0.05), higher BMI (p<0.001), had a higher number of co-morbidities (p<0.001) and lower quality of life (p<0.01) as compared to subjects with minimal or no pain.

Conclusion: Pain in patients with COPD is associated with lower walking distances, reduced daily physical activity, and higher BMI. Pain is also associated with the number of comorbid conditions. Early evaluation and treatment of pain and comorbid conditions with pain-inducing symptoms should be considered in the assessment and treatment plan of people with COPD.

Disclosure of Interest: None declared

IPCRG13-1061

INHALED CORTICOSTEROIDS (ICS) USE FOR COPD IN A HEALTH AREA

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Aim: To describe the prescription of inhaled corticosteroids (ICS) in COPD patients in our health area and to identify factors possibly associated with it.

Methods: Cross sectional study. Includes all patients in a health area diagnosed with chronic obstructive bronchitis or emphysema, who came to a primary care practice during the last two years. Measurements: demographics, smoking, prescription of inhaled corticosteroids, spirometric parameters, exacerbations and associated diseases. The information was obtained from registers of primary care medical records (AP).

Results: A total of 15,440 patients. 70% men, mean age 68.6 years (SD = 12.25). Of the 13,719 patients with smoking records, 27.7% (3,802) were never smokers. 46.46% had no spirometric data available. 14% had associated diagnosis of asthma. A total of 6,887 (44.6%) took ICS, 38.1% of them using high doses. The mean age of patients taking ICS was significantly higher than those who do not take (71.03 vs 66.7 P <0.001). Active smokers were taking less ICS (34.6%) compared to former smokers (51%) and nonsmokers (51.7%) P <0.001. 48.9% of patients with spirometry recorded vs 40.8% were using ICS (P <0.001). Among those who have had exacerbations 58.3% were using ICS vs 36.2% P <0.001. The concomitant diagnosis of asthma was significantly associated with ICS treatment (71.5% vs 40.2%) P <0.001. Also rhinitis (51.4% vs 44.1) and allergic dermatitis (50.3% vs 44.4%) were significantly associated P <0.001. We did not find differences in consumption of ICS by sex.

Conclusion: The percentage of prescription of ICS in COPD patients in our health area is lower than expected based on data from similar studies. There are different factors that significantly influence the prescribing of these drugs in our area.

Disclosure of Interest: None declared

IPCRG13-1069

PREVALENCE OF COPD AND ITS RISK FACTORS IN A RURAL AREA OF UGANDA

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Aim: In sub-Saharan Africa, little is known about the damage to respiratory health caused by indoor biomass fuel use and tobacco smoke. Our aim was to survey the prevalence and burden of COPD and its risk factors in a predominantly rural district of Uganda.

Methods: Population-based cross-sectional epidemiological survey of 588 randomly selected adults above the age of 30. Trained local healthcare workers used validated screening and air pollution questionnaires, and performed pre- and postbronchodilator spirometry in the villages.

Results: The mean age was 45.3 ± 13.7 and 50.5% of the participants were female. Over 90% were exposed to indoor biomass smoke (particularly wood): 5.2 hours/day in females and 3.1 hours/day in males. 34.4% of the males and 7.4% of the females were current-smokers; 85% of the females never smoked. Using the forced expiratory ratio (FER) < 0.7, the prevalence of COPD was 12.4% (43.8% female); from these, 17.1% of males and 12.5% of females were in the age group 30-39 years. Using the lower limits of normal (LLN), the prevalence of COPD was 16.2% (52.3% female); from these 37% of males and 40% of females were in the age group 30-39 years.

Conclusion: The prevalence of COPD in Uganda is high, particularly among young female subjects. Using LLN more younger subjects are diagnosed compared to FER < 0.7. COPD represents a major threat to health for people of all ages in rural Uganda. Further analyses will examine the interaction of tobacco smoke, biomass fuel use and other factors in the development of COPD, with the aim to reduce the future risks.

Disclosure of Interest: None declared

IPCRG13-1075

SUPPORTED SELF-MANAGEMENT FOR PATIENTS WITH MODERATE TO SEVERE CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) AT, OR SHORTLY AFTER, DISCHARGE FROM HOSPITAL: A SYSTEMATIC REVIEW OF THE EVIDENCE FOR EFFECTIVENESS AND COST-EFFECTIVENESS

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Aim: A systematic review of supported self-management for COPD patients recently discharged from hospital following an exacerbation.

Methods: Key databases were searched to May 2012 for studies of any design where patients admitted with an acute exacerbation of COPD were included in a supported self-management intervention/component within 6 weeks of discharge. There were no language restrictions. Data were extracted and risk of bias assessed independently by 2 reviewers.

Results: Of 16876 initial search hits, 13 papers were included which reported 7 randomised controlled trials (RCTs), 1 controlled clinical trial and 5 pre-post studies/arms. Study quality was variable and interventions heterogeneous. Of the RCTs, 4 described multi-component self-management packages, 1 was a home-based exercise trial, 2 were integrated care/case management packages with significant self-management components. RCT follow-up was 3-12 months, total of 1043 (range 33-464) patients enrolled. Provisional results from n=3 better quality RCTs indicate no significant effect on overall quality of life (SGRQ) scores (pooled mean difference -1.55 (95%CI -4.47, 1.37)) or mortality (OR 1.27 (0.83, 1.95)). The effect on health service utilisation was heterogeneous.

Conclusion: There is a paucity of good quality large RCTs of supported self-management delivered at discharge. Few studies report significant benefits in important outcomes. There were no cost-effectiveness studies.

Disclosure of Interest: None declared

IPCRG13-1077

OBSTRUCTIVE AIRWAYS DISEASES ARE STRONGLY ASSOCIATED WITH PRESENCE OF CATARACT: RESULTS FROM A 1-DAY, POINT-PREVALENCE STUDY IN 204,912 PATIENTS FROM 880 CITIES AND TOWNS IN INDIA

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Aim: We aimed to explore the association between OADs and cataract in a large, nationwide, cross sectional, observational study amongst primary care physicians of India.

Methods: 12,000 randomly selected primary care physicians from 880 cities and towns were invited to participate in a 1-day point prevalence study. Each doctor kept a record of all symptoms and diagnosis of patients who visited them on 1st Feb '11, on a modified ICD-10 classification questionnaire. Quality checked data entered into Epi-info software was analyzed using simple descriptive statistics. Chi square test was used to study associations between OADs and cataract.

Results: 7400 doctors provided data on 204,912 patients (M: 54.1%; F: 45.9%). 16075 (7.8%) patients had OADs and 1086 (0.5%) had cataract. Doctor-diagnosed OADs were strongly associated with cataract [OR: 3.87 (3.37, 4.45); p< 0.0001], more so in the age group 18-40 yrs [3.68 (2.4, 5.66); p< 0.0001]. Odds ratio for asthma was 2.56 (2.13, 3.00); p<0.0001 and COPD was 6.40 (5.43, 7.54); p<0.001. Patients with cataract had a 3.8 fold (CI: 3.37 – 4.45; p<0.0001) increased odds of having OADs.

Conclusion: This large, cross-sectional study in India showed a very strong association between OADs and cataract, likely due to widespread use of oral steroids in the management of OADs. This needs further evaluation. Patients with OADs should be screened for cataract and patients with cataract should be screened for OADs.

Disclosure of Interest: None declared

IPCRG13-1078

PATIENTS PERCEIVE THEIR ASTHMA TO BE CONTROLLED DESPITE THE PRESENCE OF SYMPTOMS: A EUROPEAN SURVEY OF 8000 PATIENTS

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Aim: Previous studies showed that many patients with asthma ignore symptoms and overestimate the extent to which their disease is controlled, accepting a lower quality of life. We report data from the largest and most recent European survey of patient attitudes to asthma and its management, to assess whether the discrepancy between perceived and guideline-defined control has improved.

Methods: Online surveys were conducted with 8000 patients with asthma (aged 18–50 years, ≥2 prescriptions in the last 2 years) from 11 European countries, recruited via validated consumer panels.

Results: Overall, 91% of respondents considered their asthma to be 'well controlled', and 92% were confident in their ability to manage it; the majority were not concerned about their asthma (75%) and did not regard their symptoms as serious (72%). However, of those who perceived their asthma to be controlled, 42% had uncontrolled asthma and 37% had partially controlled asthma as defined by the GINA guidelines. Notably, in the 7 days before completing the survey, 42% of respondents with perceived control used their reliever inhaler ≥3 times, 53% had awoken due to asthma on ≥1

day and 56% had symptoms that interfered with their normal activities on ≥ 1 day. Moreover, many respondents with perceived control had required oral steroids for asthma (43%) or been admitted to AandE (22%) due to their asthma in the previous year.

Conclusion: There remains a marked discrepancy between patient-perceived and GINA-defined asthma control; many patients do not associate symptoms with poor control. This suggests a need for initiatives to help patients recognize and respond actively to symptoms to improve their asthma management.

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IPCRG13-1080

ASTHMA AND ITS MANAGEMENT: IDENTIFYING DISTINCT PATIENT ATTITUDINAL CLUSTERS

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Aim: Patient attitudes towards asthma vary and this may impact on disease management. This analysis was designed to group respondents to a large European survey into clusters based on their attitudes towards asthma and its management.

Methods: Online surveys were completed by 8000 patients with asthma (aged 18–50 years, ≥ 2 prescriptions in the last 2 years) from 11 countries. Cluster analysis was used to identify different clusters of patients based on attitudes towards asthma.

Results: Four clusters were identified. Clusters 1 and 2 were defined by a high level of confidence in managing their asthma, and low levels of concern about the disease. Cluster 1 was more adherent to therapy and less likely to ignore HCP instructions than Cluster 2. Clusters 3 and 4 were more concerned about their asthma and considered it serious, and wanted to improve their disease management; these clusters had the lowest levels of GINA-defined control. Cluster 4 was less adherent to therapy and more likely to ignore HCP instructions than Cluster 3. Cluster 4 was most likely to seek additional information about asthma.

Image:

	Cluster 1 (n=2264)	Cluster 2 (n=1966)	Cluster 3 (n=1633)	Cluster 4 (n=2137)
Very confident in managing asthma	41	50	10	16
Concerned about asthma %	11	4	61	32
Considered asthma serious %	8	2	41	20
Want to manage asthma better %	34	25	66	62
Take maintenance inhaler daily %	52	40	60	36
Ignore HCP instruction on taking maintenance inhaler %	9	26	17	45
Seek information about asthma ≥ 1 /week %	5	1	14	38
GINA-defined control %	28	37	5	7

Conclusion: This survey identifies four distinct clusters of patients with asthma that differ in attitude, adherence and educational need. Understanding these differences may facilitate the development of appropriate asthma management strategies.

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IPCRG13-1082

LONG-TERM SAFETY AND EFFICACY OF FLUTICASONE PROPIONATE/FORMOTEROL FUMARATE COMBINATION THERAPY IN PATIENTS WITH ASTHMA

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Aim: The ICS fluticasone (FLUT) has been combined with the LABA formoterol (FORM) in a single inhaler (FLUT/FORM; flutiform®) for the maintenance treatment of asthma. The aim of this study was to assess the long-term safety and efficacy of FLUT/FORM.

Methods: In this open-label continuation study, 280 patients (aged ≥ 12 years) with asthma (baseline forced expiratory volume in 1 second [FEV₁] % predicted 40–80%) who had completed 12 weeks' treatment with FLUT/FORM 250/10 µg or FLUT 250 µg b.i.d. received FLUT/FORM 250/10 µg b.i.d. for ≤ 60 weeks. Lung function was assessed pre-dose and at 5, 15, 30 minutes, 2 and 4 hours post-dose on day 1 and at weeks 2, 12, 24, 36, 48 and 60.

Results: The most common adverse events (AE) were nasopharyngitis (19.6%), pharyngitis (10.7%), rhinitis (8.2%), bronchitis and headache (both 7.1%). No drug-related serious AEs were reported. The incidence of severe exacerbations (asthma deterioration requiring additional therapy [e.g. systemic steroids], or AandE visit or hospitalization) was low (2.1%, n=6); mean time to onset of severe exacerbation was 237 days (range, 37–413). Increases from baseline in FEV₁, FEV₁ % predicted and forced vital capacity (FVC) were observed at every assessment time point from day 1; these improvements were sustained over 60 weeks (Table).

Image:

Visit	FEV ₁ , L		FEV ₁ % predicted		FVC ₁ , L	
	Pre-dose	2 hours post-dose	Pre-dose	2 hours post-dose	Pre-dose	2 hours post-dose
Baseline	2.093		67.1		3.047	
Change from baseline						
Day 1		0.235		7.8		0.188
Week 12	0.085	0.276	2.8	8.9	0.047	0.217
Week 36	0.153	0.340	4.9	10.8	0.116	0.284
Week 60	0.150	0.335	4.7	10.7	0.099	0.256
Baseline, n=276						

Conclusion: FLUT/FORM is generally well tolerated and provides clinically relevant, sustained improvements in lung function during long-term therapy.

Disclosure of Interest: K. Kaiser Employee of: Skyepharma, T. Pertseva Consultant for: Skyepharma, GlaxoSmithKline, AstraZeneca, Novartis

IPCRG13-1083

FLUTICASONE/FORMOTEROL THERAPY: TREATMENT EFFECTS IN PATIENTS BY BASELINE ASTHMA SEVERITYT. McIver¹,* B. Grothe¹, S. Dissanayake¹¹Mundipharma Research Limited, Cambridge, United Kingdom

Aim: The ICS fluticasone propionate (FLUT) and the LABA formoterol fumarate (FORM) have been combined in a single inhaler (FLUT/FORM; flutiform®). A double-blind, parallel group study was carried out to assess the efficacy and safety of FLUT/FORM vs FLUT and FORM administered concurrently (FLUT+FORM). This is a post hoc analysis comparing the efficacy of FLUT/FORM 500/20µg with 100/10µg by baseline asthma severity.

Methods: 620 patients were randomised 1:1:1 to receive FLUT/FORM 500/20µg, 100/10µg, FLUT+FORM 500µg+24µg or FLUT 500µg (all bid), stratified by % predicted FEV₁ at baseline [≥ 40 – ≤ 60 %: severe asthma, 52% patients, vs >60 %– ≤ 80 %: moderate asthma, 48% patients], to allow a post hoc analysis of spirometric and symptom-based endpoints.

Results: No dose-response was found between FLUT/FORM 500/20µg and 100/10µg for spirometric variables overall or in either group. Almost all symptom-based endpoints showed treatment effect differences between the doses (in favour of the high dose; more so in the severe asthma group), e.g. changes in mean symptom and mean sleep disturbance scores, % symptom-free and % rescue medication-free days, awakening free nights, % asthma control days, AQLQ score and asthma exacerbations. For severe asthmatics the differences between FLUT/FORM doses were statistically significant for sleep disturbance scores [treatment difference -0.138; 95% CI -0.265, -0.012; p=0.032], % awakening-free nights [treatment difference 11.754; 95% CI 2.234, 21.274; p=0.016] and mean AQLQ score [treatment difference 0.302; 95% CI 0.013, 0.591; p=0.041].

Conclusion: High-dose FLUT/FORM was consistently associated with greater symptomatic treatment benefit than low-dose for severe asthmatic patients: these data provide a rationale for dose escalation with FLUT/FORM.

Disclosure of Interest: T. McIver Employee of: Mundipharma Research Limited, B. Grothe Employee of: Mundipharma Research Limited, S. Dissanayake Employee of: Mundipharma Research Limited.

IPCRG13-1085

TIOTROPIUM AS ADD-ON THERAPY TO ICS PLUS LABA IN PATIENTS WITH SYMPTOMATIC SEVERE ASTHMAA. D'Urzo¹,* J. Hébert², P. Moroni-Zentgraf³, M. Engel³, H. Schmidt³, P. Lange⁴¹Primary Care Lung Clinic, Toronto, ²Centre de recherche appliqué en allergie de Québec, Québec, Canada, ³Boehringer Ingelheim Pharma and Co KG, Ingelheim am Rhein, Germany, ⁴Hvidovre Hospital, Hvidovre, Denmark

Aim: Assess efficacy/safety of the long-acting anticholinergic bronchodilator tiotropium (tio) in patients (pts) with severe symptomatic asthma despite ICS+LABA treatment.

Methods: 2 identical double-blind, placebo (pbo)-controlled, parallel-group trials (NCT00772538, NCT00776984) assessed tio (via Respimat® Soft Mist™ Inhaler) as add-on to ICS+LABA for 48 wk in pts with severe symptomatic asthma. Entry criteria: age 18-75 yr; asthma diagnosed before age 40; asthma for ≥ 5 -yr; ACQ-7 score ≥ 1.5 ; persistent airflow limitation; post-bronchodilator FEV₁ ≤ 80 %; non-smoker/ex-smoker (<10 pack-yr); ≥ 1 exacerbation in previous yr; ICS+LABA for ≥ 4 wk pre-screening. Exclusion criteria: COPD/other lung diseases. Severe exacerbation defined as needing systemic corticosteroids for ≥ 3 days. Allergic asthma identified by total serum IgE >430 µg/L, blood eosinophils $0.6 \times 10^9/L$ or clinical judgement 'yes'.

Results: 912 pts randomised to 5 µg tio QD (n=456) or pbo QD (n=456) for 48 wk. Time to first severe exacerbation 56 days longer with tio vs pbo (risk reduction 21%; HR 0.79; p=0.034). At 24 wk mean change from baseline FEV₁ peak (0-3h) and trough FEV₁ were greater with tio vs pbo: trial 1 difference from pbo 86 mL (SE±34; p=0.011) and 88 mL (SE±31; p=0.005); trial 2 difference from pbo 154 mL (SE±32; p<0.001) and 111 mL (SE±30; p<0.001). Lung function and time to first severe asthma exacerbation

improved with tio vs pbo, irrespective of allergic status or blood eosinophilia. AEs were balanced across treatment groups.

Conclusion: Once-daily tiotropium as add-on to ICS+LABA in pts with severe asthma prolongs time to first severe exacerbation, improves lung function irrespective of allergic status, and is well tolerated.

Disclosure of Interest: A. D'Urzo Grant / Research Support from: Investigator, J. Hébert: None declared; P. Moroni-Zentgraf Full employee at Boehringer Ingelheim; M. Engel Full employee at Boehringer Ingelheim; H. Schmidt Full employee at Boehringer Ingelheim; P. Lange Grant / Research Support from: Unrestricted grant for a project describing quality of COPD care in Denmark, Consultant for: Member of ad board/Consulting in preparation of meetings/ Speaker at symposia.

IPCRG13-1086

PRISMS: A RAPID SYSTEMATIC META-REVIEW OF THE EVIDENCE ON SUPPORTING ASTHMA SELF-MANAGEMENTH. Parke¹,* E. Epiphaniou¹, G. Pearce¹, S. J. C. Taylor¹, H. Pinnock²¹Barts and the London SMD, London, ²University of Edinburgh, Edinburgh, United Kingdom

Aim: The effectiveness of asthma self-management (SM) is well recognised and is a core guideline recommendation. To inform practical implementation of such interventions, we planned to synthesise the findings of systematic reviews to provide a high-level overview.

Methods: We searched systematically and screened results from 7 electronic databases, and performed snowball and manual searches. Outcomes of interest included measures of asthma control and asthma-related quality of life. We investigated the composition, delivery, and setting of interventions in order to identify the optimal configuration of asthma SM support.

Results: 18 systematic reviews were identified for inclusion, published between 1995 and 2012 and collectively representing 157 randomised controlled trials. 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 computerized programmes. 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 related admission reduced risk of future emergency presentation.

Conclusion: When implementing asthma SM support it is essential to consider not only the content of the intervention, but also the most appropriate delivery mode and setting for the target population, and the wider healthcare context.

Disclosure of Interest: G. Pearce Grant / Research Support from: HSandDR Funding acknowledgment: This project was funded by the National Institute for Health Services and Delivery Research programme (project number 11/1014/04). Department of Health Disclaimer: The views and opinions expressed therein are those of the authors and do not necessarily reflect those of the HSandDR programme, NIHR, NHS or the Department of Health., E. Epiphaniou Grant / Research Support from: same, H. Parke Grant / Research Support from: same, H. Pinnock Grant / Research Support from: same, S. Taylor Grant / Research Support from: same.

IPCRG13-1087

EVALUATION OF QUALITY STANDARDS IN THE MANAGEMENT AND DIAGNOSIS OF COPD IN PRIMARY CARED. Ocaña¹,* V. Barchilon¹, V. Corral¹, D. Del Castillo¹¹Servicio Andaluz de Salud, Cádiz, Spain

Aim: To know how the diagnosis and treatment of COPD is being performed across primary health care clinics. To analyze the inputs of family care physicians in regards to the different aspects to be addressed in the strategy and implement and training programs in order to improve this.

Methods: Cross-sectional study through an anonymous questionnaire to family care physicians in 38 primary health clinics; 172 of these surveys were

acceptable for the study

Results: 92.4% said they have a spirometer in their clinic. 59.3% admitted to perform spirometries only on patients that showed any respiratory symptom regardless of their age and total tobacco consumption. In 73.3% of the cases, a bronchodilator test is performed. 69.2% know about appropriate medication and the inhalation procedure, but only 5.2% of them actually know the dosage as indicated in the guidelines. 65.7% establish or confirm a COPD diagnosis in all patients > 40 years, pack/year and FEV₁/FVC < 70% post-bronchodilator. 47.7% point out that routine spirometries are not performed on every smoker patient > 40 years. 24.4% consider that not enough relevance is given to COPD. 93.6% agree that a patient who has been diagnosed with COPD and has daily symptoms should be treated with a long acting bronchodilator. In cases where dyspnea persists, 68% would add an ICS and 26.7% a second bronchodilator. 84.9% say they have in their health centres an established system for smoking cessation. 60.5% suggested that training in diagnosis and treatment of COPD should be promoted.

Conclusion: COPD is being under-evaluated and there is a widespread difficulty applying clinic guidelines in regards to the diagnosis and management of COPD. Training of primary care physicians should be optimized with case studies where they can participate based on the gaps and deficiencies found in our study.

Disclosure of Interest: None declared

IPCRG13-1089

NEW GOLD RECOMMENDATIONS OVER SEVEN YEARS' FOLLOW-UP - CHANGES IN SYMPTOMS AND RISK CATEGORIES

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Aim: The aim was to analyse the change in GOLD categories according to the new GOLD recommendations over seven years of follow-up.

Methods: 1548 patients aged 34-75 years with a diagnosis of COPD were randomly selected in 2005 from primary and secondary care in Sweden. The response rate was 75%. Information was collected using questionnaires in 2005 including history of exacerbations and CCQ. Spirometry data were obtained from record reviews for the period 2000-2003. A follow-up of the same patients in 2012 included the same questions as 2005. Symptoms and future risk were graded into the GOLD categories A, B, C and D. CCQ was used to assess symptoms in both surveys. A mean of CCQ ≤ 1.0 was judged as less symptoms.

Results: A total of 573 from 802 available patients participated in both surveys. Mean age 2012 was 69.8, 59% women. 26% were daily smokers in 2005 compared with 16% 2012 (p<0.001). There was an uneven distribution in the different GOLD categories. In 2005 23% were in A, 39% in B, 4% in C and 34% in D. In 2012 19% were in A, 38% in B, 4% in C and 40% in D. From 2005 to 2012 39% had changed category (see table). Of those with Low Risk in 2005, 25% had changed to High Risk in 2012. Daily smokers in 2005 had an increased odds ratio for changing to High Risk, OR 2.25 (95%CI 1.29-3.94) adjusted for sex and age.

	A-2012 (n=98)	B-2012 (n=199)	C-2012 (n=20)	D-2012 (n=210)
A-2005 (n=119)	53%	29%	5%	13%
B-2005 (n=207)	12%	60%	1%	28%
C-2005 (n=20)	25%	15%	25%	35%
D-2005 (n=181)	3%	20%	4%	72%

Conclusion: Many COPD patients change GOLD categories and daily smoking was associated with increased future risk in this follow up.

Disclosure of Interest: None declared

IPCRG13-1092

PAIN AS A CAUSE OF ACTIVITY LIMITATION IN PERSONS WITH COPD

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Aim: To compare the self-reported causes and extent of activity limitations imposed by pain in Canadians with or without self-reported COPD.

Methods: Using data from a national post-census population survey of Canadians reporting participation or activity limitations, we compared the self-reported causes of activity limitations in people with and without COPD using the eight attributes of the Health Utility Index. COPD was considered present if there was a self-report of COPD, emphysema, or bronchitis as the cause of disability. Analyses were weighted to the population.

Results: The sample represented 4,219,480 adults, of whom 47,560 (1.1%) reported a diagnosis of COPD. Mobility, agility and pain were the most frequently reported causes of activity limitations for those with or without COPD. Higher proportions of people with COPD than without COPD reported disability caused by problems with: mobility (93.5% vs. 52.6%); agility (82.2% vs. 50.9%) and pain (73.4% vs. 54.8%). Activity limitations attributed to pain occurred for 48.0% of respondents with COPD, compared to 36.8% without COPD. Pain prevented most activities for 21.2% of those with COPD compared to 10.1% of those without COPD.

Conclusion: Pain leading to activity limitations may occur more often than expected in persons with COPD. Assessment and appropriate management of pain in this population could improve outcomes related to rehabilitation, functional status and psychosocial well-being.

Disclosure of Interest: None declared

IPCRG13-1093

NURSES' KNOWLEDGE ABOUT, AND THEIR INTENTION TO STUDY, COPD

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Aim: The aim of this study was to clarify the nurses' knowledge about COPD and intention to study the disease.

Methods: 1) Ethical Issues: The research methods were approved by the Ethical Review Committee of the University of Fukui, Department of Medical Sciences (Approval #23-109).

2) Subjects: The self-oriented questionnaire was distributed to 1505 nurses in 14 hospitals in Japan.

3) Date collection: The questionnaire contained 1) demographic data, and smoking status, 2) knowledge about COPD, 3) frequency of studying COPD and 4) intention to study COPD.

Results: 1285 (85.4%) out of 1505 subjects responded to the questionnaire and 1018 (67.6%) were valid data. The data from 744 (49.4%) nurses was analyzed as valid data in this study. The average age was 35.0±9.7 years, and 696 (93.5%) were female. The average year of nursing experience was 12.4±9.4 years. About 544 (73.1%) subjects were non-smokers, 101 (13.6%) were smokers and 99 (13.3%) were ex-smokers. Most of the subjects stated that they knew COPD very well or moderately, and that their body of the knowledge came from basic nursing education. Many subjects responded that efficient medical diagnosis tests for COPD were #1 "spirometry test" (n=497, 96.5%), #2 "chest X-ray" (n=383, 74.4%) and #3 "arterial blood gas analysis" (n=381, 74.0%). However, only 65 (12.6%) subjects pointed out "pulmonary exercise test" as a diagnostic test. It is important to enhance the nurses' knowledge about diagnostic tests, such as pulmonary exercise tests.

Conclusion: It became clear that the nurses didn't have sufficient knowledge

about COPD diagnostic tests although they thought they had high knowledge about COPD. In order to facilitate early diagnosis of COPD, it is important to promote nurses' as well as ordinary population's knowledge about COPD.

Disclosure of Interest: None declared

IPCRG13-1095

ONCE-DAILY QVA149 REDUCES EXACERBATIONS, IMPROVES LUNG FUNCTION AND HEALTH STATUS VERSUS GLYCOPYRRONIUM AND TIOTROPIUM IN SEVERE-TO-VERY SEVERE COPD PATIENTS: THE SPARK STUDY

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Aim: Combinations of long-acting bronchodilators help to maximize bronchodilation and reduce risk of exacerbations. Once-daily QVA149 is a dual bronchodilator consisting of a fixed-dose combination of two long-acting bronchodilators, indacaterol and glycopyrronium (GLY).

Methods: The 64-wk SPARK study randomized patients to QVA149 110/50µg or GLY 50µg, both via the Breezhaler® device; or open-label tiotropium (TIO, 18µg via the Handihaler® device). Objectives were rate of COPD exacerbations, lung function, health status and safety.

Results: 2224 patients were randomized, 63.3% completed. Rate of all COPD exacerbations was significantly reduced with QVA149 versus glycopyrronium (rate ratio [RR] 0.85, 95% CI: 0.77, 0.94; p=0.001) and tiotropium (RR 0.86, 95% CI: 0.78, 0.94; p=0.002). QVA149 showed clinically meaningful and statistically significant improvement in pre- and post-dose FEV₁ vs. GLY and TIO (all p<0.001); there were significant improvements in SGRQ score at Wk64 vs. GLY (p<0.01) and TIO (p<0.001). The frequencies of adverse and cardio/cerebrovascular events were similar across treatment groups.

Conclusion: Superior improvements in lung function with QVA149 leads to fewer exacerbations and improved health status vs. GLY and TIO in patients with severe-to-very severe COPD. QVA149 was safe and well tolerated.

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IPCRG13-1096

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 with acute exacerbations of COPD and asthma in general practice,

and to identify predictors for antibiotic and corticosteroid prescribing.

Methods: 380 patients 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 included patients, 99 patients visited their GP due to one or more exacerbations. Antibiotics were prescribed at the first consultation in 24.2% and systemic corticosteroids in 38.4%. 42.5% of patients with FEV₁/FVC < 0.7 at baseline were treated with antibiotics compared to 12.3% among patients with FEV₁/FVC ≥ 0.7 (p=0.001). A similar tendency was shown in prescribing systemic corticosteroids (p=0.007). The antibiotic prescription rate increased with increasing symptoms from 14.1% in patients with Anthonisen type 3 to 30.8% in type 1 (p=0.4). Wheezes/rhonchi predicted the prescribing of both with p-value of 0.004 and 0.003 respectively. Among the patients with CRP ≥ 8mg/L, 48.4% were treated with antibiotics compared to 14.5% among those with CRP < 8 (p=0.001), whereas the CRP value did not significantly predict the prescribing of systemic corticosteroids. Both the prescribing of antibiotic and systemic corticosteroids were significantly associated with oxygen saturation below 93% (p-value 0.01 and 0.02 respectively).

Conclusion: Patients with COPD were treated with antibiotics and systemic corticosteroids more often within our cohort. Chest findings and biomarkers were stronger predictors of prescribing of antibiotics and systemic corticosteroids than were the Anthonisen criteria.

Disclosure of Interest: None declared

IPCRG13-1097

TREATMENT OF COPD BASED ON HEALTH STATUS - A RANDOMIZED CONTROLLED PILOT STUDY

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Aim: COPD treatment strategies were traditionally based on lung function impairment alone. In the GOLD 2013 guidelines health status is incorporated as measurement of severity and with that as a disease management modulator. There is no evidence that management based on health status is superior. The aim of the current study is pilot testing this hypothesis.

Methods: We enrolled 53 COPD patients in a single blind randomized controlled pilot trial. GPs of patients in both groups received specific predefined treatment advice, based on either health status (measured by the Clinical COPD Questionnaire, health status group: HG) or regular GOLD 2009 based care (control group: CG). This included: diagnosed COPD, ≥10 pack years. Excluded: asthma, severe co-morbidities, and regular oxygen use. Three visits in 6 months were completed. Each visit encompassed spirometry and questionnaires (disease specific health status (St. George's Respiratory Questionnaire (SGRQ)). The primary outcome was change in SGRQ after 6 months. Univariate analyses were performed using the Mann-Whitney U test.

Results: Twenty-eight patients were randomized to CG, and 25 to HG. 58% were male; mean 64yrs and 40 packyrs; GOLD I 38%, GOLD II 57%, GOLD III 6%. SGRQ changed 0,74 in HG and 3,4 in CG (ns). Treatment advice was implemented by the GP in 78,8 % of cases.

Conclusion: This pilot study showed no beneficial effect of 6 months treatment based on health status, possibly due to low numbers, but proved that health status based advice for treatment of COPD was acceptable to the GP. A much larger further-developed follow-up study will show if these advice are also beneficial for patients.

Disclosure of Interest: None declared

IPCRG13-1098

REAL-WORLD MANAGEMENT OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE: IS THERE A ROLE FOR INHALED CORTICOSTEROID TREATMENT?D. Price^{1,2}, G. Colice³, R. J. Martin⁴, N. Barnes⁵, N. Roche⁶, A. J. Lee⁷, E. Israel⁸, A. Burden²,* J. von Ziegenweid², L. Hillyer², D. Postma⁹¹University of Aberdeen, Aberdeen, ²Research in Real Life, Cambridge, United Kingdom, ³Washington Hospital Center, Washington, ⁴National Jewish Health, Denver, United States, ⁵arts and London NHS Trust, London Chest Hospital, London, United Kingdom, ⁶Hôpital de l'Hôtel-Dieu, Paris, France, ⁷Section of Population Health, University of Aberdeen, Aberdeen, United Kingdom, ⁸Harvard Medical School, Boston, United States, ⁹University of Groningen, Groningen, Netherlands**Aim:** To compare two inhaled corticosteroid (ICS) treatments: fluticasone propionate (FP) and extrafine hydrofluoroalkane beclometasone dipropionate (EF HFA-BDP, Qvar®) in real-life management of chronic obstructive pulmonary disease (COPD).**Methods:** Pooled data from the UK's General Practice and Optimum Patient Care Research Databases. Patients initiated or increased their ICS dose, were ≥40 years with ≥3 years continuous practice data (1 baseline year, 2 outcome years); a COPD diagnosis; ≥2 COPD baseline prescriptions and no co-morbid respiratory disease. Primary outcome was exacerbation rate (hospital admission, emergency room attendance for COPD or lower respiratory [LR] reasons, oral corticosteroids and/or LR antibiotics). Secondary outcomes: treatment success (no exacerbations, ICS dose increase or initiation of additional COPD therapy), change in therapy, median ICS dose and adherence. Patients were matched 1:1 on baseline demographics and disease severity.**Results:**

	ICS INITIATION		ICS INCREASE	
	FP n=334	EF HFA-BDP n=334	FP n=189	EF HFA-BDP n=189
Exacerbations, RR (95%CI)	1.00	1.07 (0.87-1.33)	1.00	0.98 (0.79-1.23)
Treatment success RR (95%CI)	1.00	2.50 (1.32-4.73)	1.00	2.28 (1.02-5.09)
>70% ICS adherence* n(%)	179 (53.5)	227 (68.0)	121 (64.0)	148 (78.3)
Therapy change*n(%)	222 (66.5)	193 (57.8)	129 (68.3)	108 (57.1)
Average yearly ICS dose median (IQR)*, mcg	315.1 (150.7-458.9)	435.6 (205.5-739.7)	876.7 (548.0-1238.4)	1068.5 (657.5-1684.9)

*Statistically significant results. RR = rate ratio

Conclusion: This large, up-to-date observational study suggests EF HFA-BDP patients achieve at least as good outcomes as FP patients in treating COPD, despite a statistically significantly lower median ICS daily dose. Enhanced adherence and lower therapy change may also indicate greater treatment satisfaction compared with FP patients.**Disclosure of Interest:** D. Price Shareholder of: AKL Ltd , Grant / Research Support from: UK National Health Service, Aerocrine, AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Merck, Mundipharma, Meda, Novartis, Nycomed, Pfizer, and Teva , Consultant for: Almirall, Astra Zeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Merck, Mundipharma, Meda Novartis, Napp, Nycomed, Pfizer, Sandoz and Teva. , Speaker Bureau of: Almirall, AstraZeneca, Activaero, Boehringer Ingelheim, Chiesi, Cipla, GlaxoSmithKline, Kyorin, Merck, Meda, Mundipharma, Novartis, Pfizer and Teva; G. Colice: None declared; R. Martin: None declared; N. Barnes: None declared; N. Roche: None declared; A. Lee: None declared; E. Israel: None declared; A. Burden: None declared; J. von Ziegenweid: None declared; L. Hillyer: None declared; D. Postma: None declared.

IPCRG13-1100

PRISMS: A RAPID SYSTEMATIC META-REVIEW OF THE EVIDENCE FOR SUPPORTED SELF-MANAGEMENT FOR COPDG. Pearce^{1,*}, E. Epiphaniou¹, H. Parke¹, H. Pinnock², S. Taylor¹¹Barts and The London School of Medicine and Dentistry, Queen Mary University of London, London, ²University of Edinburgh, Edinburgh, United Kingdom**Aim:** To undertake a rapid, systematic meta-review of the evidence for self-management (SM) support interventions for COPD to inform commissioners and healthcare providers about what works, for whom, in what contexts and why.**Methods:** We searched the Cochrane Database of Systematic Reviews, MEDLINE, CINAHL, and DARE from 1993 onwards. A PICOS search strategy was used to identify systematic reviews of RCTs reporting interventions promoting aspects of SM for COPD in any healthcare setting. Citations were screened against inclusion criteria, quality assessed and data extracted.**Results:** 6,435 citations were found and 5 reviews were included (reviews published 2005-2012; RCTs published 1987-2011). One review focused specifically on SM interventions, two on education, one on action plans and one on outreach nursing. The SM interventions included a wide range of components (education, self-help, therapy, action plans, group sessions, exercise, relaxation, imagery, smoking cessation, inhaler use) and were delivered within diverse healthcare contexts (integrated care, disease-management, telehealthcare, home care, oxygen therapy services). Review conclusions varied: one found that action plans improved reaction to exacerbations with no significant effect on admissions; one reported that SM education reduced hospital admissions. Lack of detail meant that it was often not clear which component of the heterogeneous interventions were, or were not, effective.**Conclusion:** The lack of clear definitions, the heterogeneity of COPD SM RCTs and the paucity of RCTs examining specific components of SM in COPD, mean that we cannot yet answer our review question. Further high quality research is needed to define the nature of effective SM for COPD and the context in which it should be delivered.**Disclosure of Interest:** G. Pearce Grant / Research Support from: HSandDR Funding acknowledgment: This project was funded by the National Institute for Health Services and Delivery Research programme (project number 11/1014/04). Department of Health Disclaimer: The views and opinions expressed therein are those of the authors and do not necessarily reflect those of the HSandDR programme, NIHR, NHS or the Department of Health., E. Epiphaniou Grant / Research Support from: same, H. Parke Grant / Research Support from: same, H. Pinnock Grant / Research Support from: same, S. Taylor Grant / Research Support from: same.

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ONCE-DAILY GLYCOPYRRONIUM IMPROVES LUNG FUNCTION AND REDUCES EXACERBATIONS IN PATIENTS WITH COPD: A POOLED ANALYSIS OF THE GLOW1 AND GLOW2 STUDIESA. D'Urzo^{1,*}, E. Kerwin², D. McBryan³, P. D'Andrea⁴¹Department of Family and Community Medicine, University of Toronto, Toronto, Canada, ²Clinical Research Institute of Southern Oregon, Oregon, United States, ³Novartis Pharma AG, Basel, Switzerland, ⁴Novartis Pharmaceuticals Corporation, East Hanover, NJ, United States**Aim:** Glycopyrronium (NVA237) is a recently approved once-daily (OD) long-acting muscarinic antagonist for the treatment of COPD.**Methods:** This is a pooled analysis of the GLOW1 and 2 studies which assessed the efficacy of Glycopyrronium 50 µg OD (GLY) vs placebo (PBO) and open-label tiotropium 18 µg OD (TIO) over 26 to 52 weeks in COPD patients.**Results:** 1888 subjects were randomized, 98.2% analyzed (GLY=1059, TIO=267, PBO=528); male: 71.5%, mean age: 63.9yr, mean post-bronchodilator FEV₁: 55.5% predicted. Trough FEV₁ values for GLY and TIO were significantly greater than PBO (p<0.001) and GLY was numerically higher than TIO at all-time points. FEV₁ improvement with GLY was seen immediately

after the first dose on Day 1 (90mL at 5min and 144mL at 15min versus PBO, $p < 0.001$) and sustained throughout the 52-week period. GLY statistically significantly prolonged the time to first moderate/severe exacerbation vs. PBO (Week 26: hazard ratio [HR] 0.64; Week 52: HR 0.67, both $p < 0.001$), which was comparable to TIO (Week 26: HR 0.70, $p = 0.026$; Week 52: HR 0.61, $p < 0.001$). GLY had a statistically significantly lower rate of moderate/severe exacerbations vs. PBO (Week 26: rate ratio [RR] 0.66; Week 52: RR 0.66; both $p < 0.005$). The overall incidence of AEs was similar across treatment groups.

Conclusion: Glycopyrronium once daily was safe and significantly improved lung function and reduced COPD exacerbations versus PBO over 52 weeks. Overall, the effects of glycopyrronium were similar to tiotropium.

Disclosure of Interest: A. D'Urzo Grant / Research Support from: GlaxoSmithKline, Sepracor, Schering Plough, Altana, Methapharma, AstraZeneca, ONO pharma, Merck Canada, Forest Laboratories, Novartis Canada/USA, Boehringer Ingelheim (Canada) Ltd, Pfizer Canada, SkyePharma, and KOS Pharmaceuticals, Consultant for: GlaxoSmithKline, Sepracor, Schering Plough, Altana, Methapharma, AstraZeneca, ONO pharma, Merck Canada, Forest Laboratories, Novartis Canada/USA, Boehringer Ingelheim (Canada) Ltd, Pfizer Canada, SkyePharma, and KOS Pharmaceuticals, Speaker Bureau of: GlaxoSmithKline, Sepracor, Schering Plough, Altana, Methapharma, AstraZeneca, ONO pharma, Merck Canada, Forest Laboratories, Novartis Canada/USA, Boehringer Ingelheim (Canada) Ltd, Pfizer Canada, SkyePharma, and KOS Pharmaceuticals, E. Kerwin Grant / Research Support from: Novartis and Boehringer Ingelheim, Consultant for: AstraZeneca (MAP Pharma), Dey Laboratories, GlaxoSmithKline, Ironwood Pharmaceuticals, Merck (Schering Plough), Pfizer, Speaker Bureau of: AstraZeneca (MAP Pharma), Dey Laboratories, GlaxoSmithKline, Ironwood Pharmaceuticals, Merck (Schering Plough), Pfizer, Sanofi Aventis, Sunovion, Targacept, Teva Labs and UCB Pharma, D. McBryan Employee of: Novartis, P. D'Andrea Employee of: Novartis.

IPCRG13-1102

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

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Aim: Despite falling prevalence of smoking in developed countries, tobacco use remains one of the major preventable causes of death and illness. General practice interventions to support smoking cessation can be effective but are often underutilised. New models, such as practice nurse (PN) involvement, are needed of enhanced cessation support in primary care.

Methods: A three-arm cluster RCT compared support provided by the PN with Quitline referral and with usual GP care. PNs in the Quit with PN arm undertook 6 hours of education and were then supported by mentoring phone calls. Participants were recruited in the practice by trained research assistants. All study participants were offered free nicotine patches. Outcome assessment was by computer assisted telephone interview conducted by research staff blind to group allocation. Primary outcome measures were self-reported sustained and point prevalence abstinence at three month and 12-month follow up points.

Results: A total of 101 practices and 2390 patients took part in the study. The loss to follow-up at 12 months was 17.6%. Assuming all those lost to follow-up have relapsed the sustained abstinence rate at three months for all participants was 7.7% and at 12 months was 4.4%. The point prevalence abstinence at three months was 15.2% and at 12 months was 17.5%.

Conclusion: The results show substantial point prevalence cessation rates across all three arms of the study. Multilevel regression analysis is being conducted to examine differences between intervention groups.

Disclosure of Interest: None declared

IPCRG13-1103

COMPARATIVE EFFECTIVENESS OF EXTRAFINE HYDROFLUOROALKANE BECLOMETASONE (EF HFA-BDP) AND FLUTICASONE PROPIONATE (FP) IN SMOKING ASTHMATIC PATIENTS — A RETROSPECTIVE, REAL-LIFE OBSERVATIONAL STUDY IN A UK PRIMARY CARE ASTHMA POPULATION

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Aim: Smoking is a common reason for poor asthma control, and associated with corticosteroid resistance, yet smokers are usually excluded from asthma trials. This study investigates the effect of stepping up inhaled corticosteroid (ICS) dose for smokers, non-smokers and ex-smokers.

Methods: Retrospective study using the UK Clinical Practice and Optimum Patient Care Research Databases. Adult patients (≥ 30 years) stepped-up their existing ICS ($\geq 50\%$ increase in dose) as either EF HFA-BDP or FP. Patients were required to have ≥ 2 prescriptions for ICS during both the year prior to and following step-up, and/or a diagnostic code for asthma. Smoking status was defined by database codes, with ex-smokers first recorded as ex-smokers over age 30. EF HFA-BDP patients (step-up year post 2005) were matched 1:1 to FP patients on demographic, disease and smoking characteristics in the baseline year. Exacerbation rates (asthma-related inpatient admissions; emergency room attendances; or use of acute oral steroids) were calculated for outcome year and adjusted for baseline confounders. Modeling explored interactions between treatment effects and smoking status.

Results: Median (IQR) doses (mcg) at step-up were 400 (200, 400) for EF HFA-BDP and 500 (500, 1000) for FP. Exacerbation rates were comparable for non-smokers with rate ratio (95% CI) 0.84 (0.68, 1.03) for EF HFA-BDP compared with FP; $n = 575$ per treatment arm, but significantly lower for EF HFA-BDP for current and ex-smokers 0.64 (0.48, 0.85); $n = 314$.

Conclusion: Results suggest a differential treatment effect between ex-smokers/smokers and non-smokers. It is likely that the smaller particle formulation of EF HFA-BDP plays some role in this effect.

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IPCRG13-1105

PATIENTS' AND DOCTORS' OPINION ABOUT THE DISEASE PROGNOSIS IN STABLE COPD PATIENTS IN GREECE

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Aim: Patients and doctors opinion on the COPD status and management are rarely assessed. This study aimed to find out levels of agreement and satisfaction on COPD prognosis between doctors and patients.

Methods: A total of 544 stable COPD patients from Greece were assessed through a cross-sectional study. Patients' demographic data, previous

treatment, lung function testing and co-morbidity were recorded. Every patient and doctor completed an additional questionnaire respectively regarding satisfaction issues. Descriptive were estimated as well as chi-square test, which was applied on variables regarding the patients' and doctors satisfaction about the disease.

Results: An agreement between patients and doctors was found in most of the answers. Agreement was found in 31.5% of the answers on issues as: enough worries about the disease's status. 53.1% of the doctors believed that their patients' disease status could be improved while the 39.4% of the patients shared the same opinion. Only, 13.7% of the doctors and 6.8% of the patients thought that the disease's status couldn't be improved in the future.

Conclusion: Patients' and doctors' opinions about the prognosis of the disease were significantly similar, with the doctors being more positive regarding possible disease improvement. Finally, most patients gave answers of medium or high levels of satisfaction referring to the way of coping with their disease.

Disclosure of Interest: None declared

IPCRG13-1106

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.

Results: 14 studies were included in the review. The healthcare contexts included primary, secondary, community and private care settings and targeted children/adults. Strategies encompassed one-to-one, telephone or group interventions and/or professional training. Physician only targeted interventions increased the number of action plans and medication prescription but did not appear to influence patient outcomes. Improved patient outcomes, including reduced health services and costs and enhanced QoL, were observed with one-to-one SM interventions delivered either by telephone or face-to-face. During these interventions clinicians provided asthma education, and discussed the management of exacerbations, action plans, and medication and reviewed inhaler technique.

Conclusion: Simply training physicians around SM support is insufficient to influence patient outcomes. Healthcare contexts and culture need to be adapted to allocate specific time, resources and processes to enable specific to asthma SM support.

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IPCRG13-1108

THE INFLUENCE OF ORGANISATION OF CARE IN PRIMARY CARE ON ASTHMA CONTROL

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Aim: In Sweden nurse based asthma/COPD clinics in primary care are common. However, the organisation looks different even in the same region. There are national, regional and international guidelines for treatment of asthma. In the national guidelines for an asthma/COPD clinic allocated time for the nurse is highlighted. There is still insufficient evidence of the impact of

asthma/COPD clinics on asthma control. The aim of this study was to evaluate the effect of nurse based asthma/COPD clinics in primary care on asthma control.

Methods: In 2011 every primary health care center (n=25) in the region of Sormland answered a questionnaire about the organisation of care to asthma patients. Two groups with 160 patients each were randomly selected to answer a questionnaire in 2012. One group with patients from five primary health care centres (PHCC) which had asthma/COPD clinics with 0.9 to 2.0 hours/week and 1000 patients (Group A). The other group with patients from PHCC without an asthma/COPD clinic or with < 0.6 hours/week (Group B). Asthma Control Test (ACT) was included in the questionnaire.

Results: Of all 25 centres 76 % had an asthma/COPD clinic. Mean allocated time for the nurse was 0.9 hours/week and 1000 patients. The questionnaire was completed by 179 patients (56%), mean age 52.3 years (range 19-75), 56% women. Of patients from centres from an asthma/COPD clinic (group A) 58% had asthma control (ACT >19) compared with 36% of the patients from centres without an asthma/COPD clinic (group B) (p=0.005). Mean ACT in group A was 19.6 and in group B 16.9 (<0.001).

Conclusion: In this study asthma control was influenced by organisation of care.

Disclosure of Interest: None declared

IPCRG13-1111

LUNG FUNCTION AMONG RUBBER FACTORY WORKERS IN WEST BENGAL

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Aim: The aim of this study was to investigate whether there is any relationship between working in the rubber industry and having respiratory symptoms.

Methods: The study was carried out on the 256 workers exposed to dust at the rubber factory. Spirometry (FVC, FEV₁) was performed on 16 workers with moderate exposure and 240 Workers with high exposure. Information on occupational history, duration of exposure, smoking habits, alcohol consumption, respiratory symptoms (breathlessness, cough and rhinitis) and self reported symptoms with disease were collected. By employing multiple linear regression modeling the potentially confounding effects of age, sex and body mass index were also incorporated into the analysis. Odds ratio were calculated for FVC<80% predicted in different exposure subgroups.

Results: Statistically significant reduction in FVC, FEV₁ and PEF_r were found when compared to age, small airway obstruction, and also in shortness of breath. Small airway obstructions were found in dust fume (27.2%), smoking (30.3%), alcohol (29.3%). Lung function indices were found to be reduced with increasing duration of exposure to the working environment. The FVC of the workers exposed to factory had a mean of 3.6 ± 0.6. The FEV₁ for workers exposed had a mean of 2.4 ± 0.6. The mean value of the ratio of FEV₁/FVC in exposed workers was 76.8 ± 8.2: there was no statistical difference between these two means.

Conclusion: Due to high ambient dust concentration and the observed adverse effects on lung functions worker exposed to dust have more respiratory symptoms and a greater risk of airflow obstruction. A reduction of dust exposure and secondary preventive measure is advised.

Disclosure of Interest: None declared

IPCRG13-1113

NAVIGATING THE REALITIES OF LIVING WITH COPD: STORIES OF PATIENTS AND FAMILY CAREGIVERS

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Aim: Acute exacerbations of COPD (AECOPD) are the most common reason for hospitalization, readmission, physicians visits, emergency room utilization and mortality in Canadians with COPD. The purpose of this study, a component of a larger initiative to examine the way in transitions from

hospital to home affect patient outcomes, is to describe COPD patients' stories of the care transition experience following acute care hospitalizations for AECOPD.

Methods: The study's ethnographic design and structural narrative analysis process allowed for focused examination of 26 patients' and 12 family carers' experiences of care transitions. Over 600 stories were identified. All participants shared compelling stories about the transition process from hospital to home within the context of the initial diagnoses of chronic lung disease, hospital experiences for acute exacerbation events, and the ongoing necessity of self-medication management.

Results: The patient and family carer stories of navigating a reality of illness characterized by frequent transitions between acute care and home revealed a complex interplay of uncertainty, struggle, and/or resignation. Understanding the experiences of individuals living with COPD during the transition between hospital and home offered opportunities to develop strategies to facilitate the patients' passage through significant care transitions within the continuum of care.

Conclusion: Care transitions to home are frequently chaotic and do not account for the individual's ability to manage at home, where supports may be minimal and feel precarious to the patient and caregiver.

Disclosure of Interest: None declared

IPCRG13-1115

PAIN AND CO-MORBIDITIES IN COPD

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Aim: To determine if pain and pain interference are associated with co-morbidities in people with COPD and secondly, to determine if specific types of co-morbidities are associated with more pain and a particular location of pain.

Methods: Patients with moderate to severe COPD were recruited to perform a mail survey that included: the McGill Pain Questionnaire (MPQ), the Brief Pain Inventory (BPI), and a form to list co-morbidities and medications. The MPQ and BPI provide measures of pain intensity and the BPI provides a measure of pain interference and indicates pain locations using a body diagram.

Results: A 72% response rate was achieved in return of survey questionnaires. Of 54 COPD patients (FEV₁ 48.3±18.2% predicted; 72 years), 44 reported pain. On the BPI, 81% of COPD patients self-reported pain, of whom 66% had moderate to very severe pain and 73% had moderate to very high pain interference with daily activities. In those who experienced pain, 73% reported >2 co-morbidities and 46% reported >3 co-morbidities. Cardiovascular (29%) and musculoskeletal disorders (20%) were the most common co-morbidities followed by endocrine disorders. Those with musculoskeletal or endocrine disorders reported higher levels of pain compared to COPD patients without these types of conditions. COPD patients with musculoskeletal disorders tended to have more pain in the lower extremities and trunk. Pain treatments were used by 64% of patients; acetaminophen and ibuprofen were most common followed by prescription non-steroidal anti-inflammatory and narcotic medications.

Conclusion: Significant pain and multiple comorbid conditions are common in people with COPD. Pain associated with comorbid conditions likely compromises full participation in rehabilitation and physical activity in some people with COPD.

Disclosure of Interest: None declared

IPCRG13-1116

THE CONTROL OF ALLERGIC RHINITIS AND ASTHMA TEST: VALIDATION OF THE DUTCH VERSION

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Aim: The Control of Allergic Rhinitis and Asthma Test (CARAT) was developed to monitor the control of both asthma and allergic rhinitis in primary and secondary care. The objective of this study was to evaluate the psychometric properties of the Dutch version of the CARAT.

Methods: The study consists of three measurements with one month intervals. Patients (n=176) diagnosed with asthma and/or rhinitis from three primary and three secondary care centers were approached. Cronbach's α was used to evaluate internal consistency. CARAT scores were compared to the Asthma Control Questionnaire (ACQ) and VAS scores on airway symptoms. Spearman's correlation coefficients were used to determine construct and longitudinal validity. Delta scores of the CARAT, ACQ and VAS were analyzed. Test-retest reliability and Minimal Important Difference (MID) were evaluated using Global Rating of Change (GRC) scores to define categories according to change in symptoms.

Results: A total of 93 patients were included. Cronbach's α was 0.82. Correlation coefficients between CARAT and the ACQ and VAS questions ranged from 0.64(p<0.01) to 0.76(p<0.01). Longitudinally, correlation coefficients between delta CARAT scores and delta ACQ and VAS ranged from 0.41 to 0.67(p<0.01) for both one month intervals. Calculations for test-retest reliability showed ICC's of 0.74(p<0.01) and 0.78(p<0.01) between CARAT scores of stable patients. The MID for the CARAT was 3.50.

Conclusion: The Dutch CARAT is a valid and reliable tool for use in clinical research and practice to monitor asthma and allergic rhinitis symptoms simultaneously.

Disclosure of Interest: None declared

IPCRG13-1117

PATIENTS' DESCRIPTIONS OF LIVING WITH COPD IN VARIOUS STAGES OF THE ILLNESS

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Aim: To explore which problems patients with COPD in all four stages express and describe during visits at nurse-led COPD clinics in primary health care.

Methods: A prospective qualitative observational study comprising two videotaped consultations, first and third re-visit, with each of 20 patients (13 women), all smokers (n=11) or former smokers diagnosed with COPD. The consultations were conducted by six COPD-nurses in primary health care and analysed by qualitative content analysis.

Results: Smokers wished to quit smoking but expressed motivational difficulties in fighting cravings. Concerns about the visits were mainly about the spirometry examination, which they found exhausting and difficult to perform. Also, they expressed that they were worried about the results. Other concerns included the prospect of increasing symptoms and fears about future health. Symptoms described in all stages were cough, phlegm and shortness of breath connected even with light physical exertion. In stage III and IV, dyspnea was the most severe symptom affecting daily activities. Patients expressed concern about symptoms that could be dangerous or fatal. Previously independent activities necessitated planning and help from others. They wished to learn about self-management and used various strategies to handle their disease even when offered support and assistance. Patients told that information about COPD, how to handle symptoms and treatment in daily life increased their security and control.

Conclusion: Patients were concerned about their smoking habits and subsequent symptoms being dangerous or fatal. Shortness of breath was troublesome and limited everyday life already in early stages of COPD, thus not always correlated to the severity of the disease.

Disclosure of Interest: None declared

IPCRG13-1118

FOLLOW-UP PROGRAMME FOR PATIENTS USING SYMBICORT® TURBUHALER® MAINTENANCE AND RELIEVER THERAPY IN REAL-WORLD CLINICAL PRACTICEB. Ställberg¹,* I. Naya², J. Ekelund³, G. Eckerwall³¹Family Medicine and Preventive Medicine, Uppsala University, Uppsala, Sweden, ²AstraZeneca, Macclesfield, United Kingdom, ³AstraZeneca RandD, Mölndal, Sweden**Aim:** To investigate extent of budesonide/formoterol (B/F; Symbicort® Turbuhaler®, AstraZeneca, Sweden) use among asthma patients (pts) prescribed B/F maintenance and reliever therapy (MRT; Symbicort SMART™) in real-world European clinical practice.**Methods:** 12-month, observational study on pattern of maintenance and as-needed inhaler use with 3 B/F MRT regimens (NCT00505388): 80/4.5µg 1 inhalation (inh.) bid; 160/4.5µg 1 inh. bid; 160/4.5µg 2 inh. bid (all plus as-needed inh.). Pts were treated according to normal clinical practice. Total daily number of B/F maintenance and as-needed inh. was recorded using an interactive voice system. Descriptive statistics are presented.**Results:** Full analysis set included 4581 pts (64% female; mean age 48.4 [range 17–89] yrs; MRT regimen: 80/4.5µg, n=119; 160/4.5µg, n=3106; 2x160/4.5µg, n=1355) with diary data (median exposure 344 days). Respective median (mean) B/F inh. use in patients prescribed MRT 80/4.5µg, 160/4.5µg, 2x160/4.5µg was: total maintenance + as-needed use 2.11(2.48), 2.14(2.53) and 4.05(4.27) inh./24h; total daily B doses 169(198), 342(405) and 648(683)µg. As-needed use was higher with higher-maintenance dose 0.17(0.68), 0.26(0.73) and 0.45(1.08) inh./24h, respectively. As-needed-free (maintenance-only) days/yr were higher with lower maintenance dose 242(66.3%), 231(63.2%) and 224(61.4%), respectively. Days/yr with high as-needed use (>4 inh./day) were lower with lower maintenance dose: 1.5(0.4%), 4.3(1.2%) and 9.0(2.5%), respectively.**Conclusion:** As-needed use is low irrespective of Symbicort SMART™ regimen. High levels of asthma control were suggested by high percentages of reliever-free and low incidence of high-reliever-use days in all Symbicort SMART™ regimens.**Disclosure of Interest:** B. Ställberg Consultant for: AstraZeneca, I. Naya Employee of: AstraZeneca, J. Ekelund Employee of: AstraZeneca, G. Eckerwall Employee of: AstraZeneca

IPCRG13-1119

REAL-LIFE COPD PATIENTS COMPARED TO LARGE COPD STUDY POPULATIONS: AN UNLOCK EXTERNAL VALIDITY STUDYA. Kruijs¹,* B. Ställberg², R. Jones³, I. Tsiligianni⁴, K. Lisspers², J. W. Kocks⁵, T. van der Molen⁵, N. Chavannes¹¹Department of Public Health and Primary Care, LUMC, Leiden, Netherlands, ²Department of Public Health and Caring Sciences, Family Medicine and Preventive Medicine, Uppsala University, Uppsala, Sweden, ³Peninsula Medical School, University of Plymouth, Plymouth, United Kingdom, ⁴Department of Thoracic Medicine, University of Crete, Heraklion, Greece, ⁵Department of General Practice, University Medical Centre Groningen, Groningen, Netherlands**Aim:** To investigate the external validity of six large COPD studies (ISOLDE, TRISTAN, TORCH, UPLIFT, ECLIPSE, POET-COPD) compared to the COPD population seen in the community and to examine the proportion of community patients that would be selected for these studies based on inclusion criteria.**Methods:** We combined 7 primary care databases from the Netherlands, Sweden, the United Kingdom and Greece including 3508 COPD patients in the UNLOCK study and compared baseline characteristics of 6 large COPD studies (LCS) to UNLOCK patients.**Results:** LCS included more male subjects (73%) with more pack years (39-49), whereas in the community 46% were females with 39 pack years. Community based data showed a majority of GOLD 1 (24%) and GOLD 2 (54%) patients, in LCS GOLD 1 was absent with 35-48% GOLD 2, 42-49%

GOLD 3 and 8-15% GOLD 4. Mean exacerbation rates were higher in LCS (0.9-1.19 vs. 0.8), with an overrepresentation of patients with ≥2 exacerbations (29-32% vs. 19% community). Exacerbation rates increased per GOLD stage however mean rates in the community were lower in all GOLD stages compared to the LCS, except in UPLIFT. The proportion of COPD patients from the community eligible for inclusion in LCS ranged from 17% (TRISTAN) to 48% (ECLIPSE, UPLIFT).

Conclusion: Large COPD studies included highly selected COPD populations. These are predominantly men with worse lung function; more pack years and more exacerbations per year. It still remains highly uncertain if results of these studies can be applied to all COPD patients.**Disclosure of Interest:** None declared

IPCRG13-1125

CLINICALLY RELEVANT EFFECT OF A NEW INTRANASAL THERAPY (MP29-02[†]) IN ALLERGIC RHINITIS (AR)J. Bousquet¹, O. Karlsson²,* C. Bachert³, G. Scadding⁴, U. Munzel⁵, D. Price⁶¹Hopital Arnaud de Villeneuve, Montpellier, France, ²Meda AB, Solna, Sweden, ³University Hospital Ghent, Ghent, Belgium, ⁴The Royal National Throat Nose and Ear Hospital, London, United Kingdom, ⁵Meda Pharma, Bad Homburg, Germany, ⁶University of Aberdeen, Aberdeen, United Kingdom**Aim:** To compare the efficacy of MP29-02[†] (a novel intranasal formulation of azelastine hydrochloride (AZE) and fluticasone propionate (FP)) with marketed FP, AZE and placebo (PLA) in SAR patients using novel clinically-relevant analyses.**Methods:** 610 moderate-to-severe SAR patients (≥12 years old) were randomized to 14 days treatment with MP29-02[†], FP, AZE or PLA. Efficacy was assessed by change from baseline (CFB) in reflective total nasal symptom score (rTNSS) over 14-days, time to achieve ≤1 point remaining in all rTNSS symptoms (complete/near to complete relief) and by severity (baseline rTNSS 18.9 or >18.9).**Results:** 17.8% of MP29-02[†] patients (1 out of 6) achieved complete/near to complete relief vs 8.3%, 9.2% and 7.8% of those treated with AZE, FP and PLA, respectively, and ≤7 days faster than AZE (p=0.0152), and ≤8 days faster than FP (p=0.0262) or PLA (p=0.0094). Neither AZE nor FP differed from PLA. For less severe patients (≤18.9) rTNSS CFB was -4.68 for MP29-02[†] vs -3.21 for FP (Diff:-1.46;p=0.0188), -2.41 for AZE (Diff:-2.26;p=0.0002) and -1.16 for PLA (Diff:-3.51;p<0.0001);relative difference (RD):42% to FP; 64% to AZE. For more severe patients (>18.9) rTNSS CFB was -6.24 for MP29-02[†] vs -4.73 for FP (Diff:-1.52;p=0.0436), -4.11 for AZE (Diff:-2.13;p=0.0035) and -3.18 for PLA (Diff:-3.06;p<0.0001);RD: 49% to FP; 70% to AZE.**Conclusion:** MP29-02[†] provided more complete symptom-control up to 8 days faster than firstline therapy, an important consideration as a typical SAR episode lasts 12.5 days on average. It was consistently superior irrespective of severity or response criterion and is the drug of choice for moderate-to-severe AR.[†]Dymista**Disclosure of Interest:** None declared

IPCRG13-1126

PNEUMONIA EVENTS AND CHOICE OF FIXED ICS/LABA COMBINATION IN COPD. INFLUENCE OF ICS DOSE AND BURDEN OF DISEASE AT TREATMENT STARTG. Johansson¹,* K. Larsson², K. Lisspers¹, B. Ställberg¹, L. Jørgensen³, G. Stratelis³, C. Janson¹¹Uppsala University, Uppsala, ²Karolinska Institutet, Stockholm, ³AstraZeneca Nordic, Södertälje, Sweden**Aim:** Fluticasone (F) alone or combined with salmeterol (S), but not budesonide (BUD) alone or combined with formoterol (FM), increases the pneumonia prevalence in COPD patients (pts). Comparisons between the drugs, however, have not been investigated in the same study population. This study investigated pneumonia outcomes in COPD pts treated with fixed

ICS/LABA combinations: F/S or BUD/FM.

Methods: In this observational, retrospective, matched-cohort study (NCT01146392), Swedish medical records data (1999–2009) from COPD pts were linked to hospital, drug and cause-of-death registry data. Pair-wise (1:1) propensity score matching was performed at index date (first prescription post-COPD diagnosis). This factorial analysis examined the influence of treatment, disease burden and ICS dose on pneumonia outcomes.

Results: A 73% higher rate of pneumonia was observed with F/S (n=2734) vs. BUD/FM (n=2734) treatment (11.0 vs. 6.4 events/100 pt-years; rate ratio 1.73 [95% confidence interval (CI): 1.57–1.90], p<0.001). Fatal pneumonia events were more frequent with F/S (97 deaths [3.54%]) than BUD/FM (52 deaths [1.90%]; hazard ratio 1.76; 95% CI 1.22–2.53; p=0.0025) and intra-class treatment differences increased disproportionately in pts with a higher disease burden, while the effect of ICS dose was less pronounced. The annual rate of pneumonia with F/S depended on both dose and overall disease burden, but this relationship was weaker for BUD/FM.

Conclusion: COPD pts treated with BUD/FM experienced significantly fewer pneumonia events, including fatal pneumonia, than pts treated with F/S. Fatal pneumonia event rates were influenced more by ICS/LABA type and baseline burden of disease than ICS dose.

Disclosure of Interest: G. Johansson Consultant for: AstraZeneca, K. Larsson Consultant for: AstraZeneca, K. Lisspers Consultant for: AstraZeneca, B. Stållberg Consultant for: AstraZeneca, L. Jørgensen Employee of: AstraZeneca, G. Stratellis Employee of: AstraZeneca, C. Janson: None declared.

IPCRG13-1127

SHORT- AND LONG-TERM SAFETY OF MP29-02[†]: A NEW THERAPY FOR THE TREATMENT OF ALLERGIC RHINITIS

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Aim: To evaluate short- and long-term safety of MP29-02[†] (a novel intranasal formulation of azelastine hydrochloride [AZE] and fluticasone propionate [FP]).

Methods: 4022 SAR patients (≥12 years old) were randomized to 14 days treatment with MP29-02[†], AZE, FP or PLA nasal sprays (1 spray/nostril bid). 612 chronic rhinitis patients (≥12 years old) were randomized to 1yr, open-label treatment with MP29-02[†] (1 spray/nostril bid) or FP (2 sprays/nostril qd). Safety was assessed by incidence, type, and severity of adverse events, vital signs and nasal examination.

Results: Treatment-related adverse events (TRAEs) were those usually reported with AZE (dysgeusia) and FP (headache and epistaxis), often did not exceed PLA (Table) and were 'mild' in most cases. Long-term, there was no evidence of accumulation of TRAEs over time, any occurrence of late AEs and none were considered severe. <3% of subjects discontinued from the study due to an AE. A SAE was reported by 3 MP29-02 subjects and 1 FP subject, but none was considered treatment-related.

MP4002 SAR study (14 days) as a representative SAR study				
	MP2902 [†] (n=207)	FP (n=207)	AZE (n=208)	PLA (n=210)
TRAE n (%)	17(8.2%)	14 (6.8%)	16 (7.7%)	8 (3.8%)
Dysgeusia	5 (2.4%)	2 (1.0%)	7 (3.4%)	1 (0.5%)
Epistaxis	2 (1.0%)	5 (2.4%)	4 (1.9%)	2 (1.0%)
Headache	1 (0.5%)	5 (2.4%)	1 (0.5%)	3 (1.4%)
Chronic rhinitis study (52 weeks)				
	MP2902 [†] (n=404)	FP (n=207)		
TRAE n (%)	38 (9.4%)	23 (11.1%)		
Dysgeusia	10 (2.5%)	1 (0.5%)		
Epistaxis	5 (1.2%)	1 (0.5%)		
Headache	4 (1.0%)	9 (4.3%)		

Conclusion: MP29-02[†] was well tolerated following 14 day's use in SAR patients with a similar safety profile as standard therapies and placebo.

MP29-02[†] is also safe for long-term use.

[†]Dymista

Disclosure of Interest: None declared

IPCRG13-1132

LONGITUDINAL EFFECTS OF A MULTIDISCIPLINARY PROGRAMME OF PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) IN PRIMARY HEALTH CARE

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Aim: To investigate the long-term effects of a multidisciplinary program of pulmonary rehabilitation (PR) on functional capacity, quality of life (QoL) and exacerbation frequency among patients with COPD in primary health care (PHC).

Methods: The study had a quasi-experimental design. Patients with COPD in GOLD stage 2 and 3 were included, 49 in the intervention group and 54 in the control group. The intervention consisted of PR containing a program over six weeks. At baseline, after one and three year the functional capacity was assessed with 6-minutes-walking-test (6MWT) and QoL was assessed with Clinical COPD Questionnaire (CCQ). Exacerbation frequency was calculated one year before the programme until three years after.

Results: No significant differences between the groups were shown in 6MWT and CCQ after one year or three years. Participants within both groups increased their 6MWT with statistical significance (p=0.004) and (p=0.002) from baseline to the one-year follow-up but no significances between baseline and after three years. The patients within the intervention group increased their QoL after one year (p=0.022) but no change was found within the control group (p=0.086). No significances between baseline and three years follow up within both groups. The exacerbation frequency decreased in the intervention group and increased in the control group (p=0.009) after one year but did not persist over a three-year period.

Conclusion: The positive outcomes of PR after one year do not remain after three years.

Disclosure of Interest: None declared

IPCRG13-1135

S.L.I.T. RUSH IMMUNOTHERAPY – FASTER REACH TO MAINTENANCE PLATEAU

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Aim: Sub-lingual immunotherapy (S.L.I.T.) Rush immunotherapy was tried on some patients to evolve some faster and affordable immunotherapy modality to make the patient achieve the maintenance plateau within a very short time. Conventional method of immunotherapy is administered with long durations; rush immunotherapy is a super-fast methodology in attaining the maintenance/boosting module, which requires hospitalization and other precautionary methods, and multiple allergen vaccines to be administered within short span of time. But in this method, it has been found that within 15-20 days the relief of the immunotherapy can be reached.

Methods: 186 patients out of which 48 with urticaria allergy and 138 with allergic rhinitis and bronchial asthma were selected. The therapy consists of administration of four vials of allergen extracts, 1st vial: 1:25,00, 2nd vial 1:2,50, 3rd vial 1:25, and 4th vial 1:10 dil. The 1st and the 2nd concentrations were administered in daily 6-hourly schedules in a graphically rising manner. The patients had been given pre-medication. Blood examination and IgG and IgE level estimation were done before and after 8 weeks.

Results: Some of the patients showed local skin reactions, which subsided without drugs, and no systemic reaction was noted.

Conclusion: There was substantial decrease in IgE, increased IgG level,

significant marked satisfactory relief was observed in the patients symptomatology, thus the procedure was graded as a very fast, affordable, safe immunotherapy.

Disclosure of Interest: None declared

IPCRG13-1140

COPD EXACERBATION RISK VARIES ACCORDING TO PATIENTS' CHARACTERISTICS

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Aim: Assessing annual exacerbations is important for COPD management; however, data connecting exacerbations with patients' characteristics, education level and other social and habit factors are scarce.

Methods: Data were selected from 544 stable COPD patients from Greece through a prospective cross-sectional study, with 50 private doctors as participants. Every patient and doctor completed an additional questionnaire respectively. Basic descriptive statistics were exported in SPSS 19.0 for all variables. Chi-square test and binary logistic regression were applied on several demographic and other patient characteristics to estimate risk for exacerbation.

Results: Most of the patients were of white/Caucasian race, married, living in urban regions, of lower or medium level of education and of stable current disease status. No significant variation between genders was found. Their disease was first diagnosed mainly in private clinics (65.2%) or public hospitals (21.9%). Higher risk for exacerbation was detected in patients of age >50 (R=1.4, 95% CI=1.032-2.482, p <0.001), pensioners (R=1.2, 95% CI=1.039-1.847, p <0.001), those of primary school education (R=1.3, 95% CI=1.038-1.593, p <0.001), those who lived in urban regions (R=2.1, 95% CI=1.428-3.124, p <0.001) and smokers (R=2.3, 95% CI=1.837-3.174, p <0.001).

Conclusion: COPD exacerbations vary according to different demographic characteristics, living conditions and tobacco habit among stable patients in Greece. The risk for exacerbation of the disease depends significantly on these characteristics.

Disclosure of Interest: None declared

IPCRG13-1147

CO-MORBID CONDITIONS ASSOCIATED WITH ASTHMA (OTHER THAN CATARACT): RESULTS FROM A 1-DAY, POINT-PREVALENCE STUDY IN 204,912 PATIENTS FROM 880 CITIES AND TOWNS IN INDIA.

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Aim: To explore the co-morbid conditions associated with asthma in a large, nationwide, one-day point prevalence, cross-sectional study in India.

Methods: 12,000 primary care physicians from 880 cities and towns were randomly selected and invited to participate in this one-day point prevalence study. On 1st Feb '11 all participating doctors captured presenting symptoms and diagnosis of all patients who visited them. Clean data transferred into the EPI INFO software was analyzed for associations between Asthma and other co-morbid conditions, using chi-square test.

Results: 7,400 doctors consented and provided clean data of 204,912 patients (M: 54.1%; F: 45.9%). 10595 (5.2%) patients were reported to have Asthma. Data on strong association found between Cataract and Asthma is being presented as a separate abstract at this meeting. The table shows association between Asthma and other co morbid conditions:

Co-morbid	OR	CI	p value
Social problems	1.51	1.26, 1.81	<0.0001
Congestive Heart Disease (CHD)	1.33	1.07, 1.65	<0.010
Ischemic Heart Disease (IHD)	1.27	1.1, 1.48	<0.001
Hypertension (HT)	1.26	1.18, 1.35	<0.0001
Anemia	1.21	1.12, 1.31	<0.001
Obesity	1.18	1.03, 1.36	<0.016
Redness/Rash on skin	0.85	0.73, 0.98	<0.029
Diabetes	0.89	0.81, 0.98	<0.020
Abdominal Pain	0.47	0.43, 0.52	<0.0001

Conclusion: Asthma is strongly associated with the presence of social problems, CHD, IHD, HTN, anemia and obesity in an Indian population. Primary care physicians in India must screen their patients with asthma for these co-morbid conditions.

Disclosure of Interest: None declared

IPCRG13-1150

HEATH-SEEKING BEHAVIOUR OF COPD PATIENTS AT PRIMARY CARE LEVEL IN BANGLADESH

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Aim: The study is designed to determine the pattern and percentage of presentation of different grades of COPD patients in a primary care respiratory centre.

Methods: This is a prospective study done in a well-established and busy primary care respiratory centre in Khulna; one of the largest cities of Bangladesh. Data was collected within the time duration of 25th February 2012 to 10th of March 2013. The source of data was an electronically-updated database. A total of 802 patients were included in the study all of whom visited the centre during this period. Among them 664 (82.8%) were male and 138 (17.2%) were female. All the patients were attended initially according to their priority and followed up there after. Most of the patients were treated on domiciliary basis while few requiring hospital admission. The age range of the patients was 31-100 years. The patients were included on the basis of clinical history; examination and diagnosis were confirmed by spirometry (as per GOLD criteria).

Results: Among the total patient (802) population, 53 patients were COPD-1 (6.6%); 153 COPD-2 (19.07%), 322 COPD-3 (40.14%) and 274 patients with COPD-4 (34.16%). 82.8% were male and 17.2% were female. Most of the female patients seek help in their grade 4 stage. Female patients are mostly non-smokers; their risk factor is biomass fume exposure in the kitchen.

Conclusion: COPD is a preventable and treatable disease. As such early detection and appropriate intervention will decrease the suffering of the patient and burden of COPD. A more structured nationwide study is necessary for further evaluation of the situation.

Disclosure of Interest: None declared

IPCRG13-1152

DEVELOPING A TOOL FOR RECORDING OF ASTHMA CARE IN THE ELECTRONIC MEDICAL RECORD IN PORTUGAL: A DELPHI STUDY

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Aim: To develop an effective tool for recording of asthma care in the electronic medical record.

Methods: A literature review was initially done to define a list of potentially

interesting items for the assessment of control of asthma. The formal consensus process was carried out in two rounds of experts' contribution with feedback after each round. A web form tool was used in this process. In both rounds 155 primary care and 64 secondary care physicians were invited to participate. In the second round the options to answer the questions were defined. The items were further divided into 3 sections to simplify the software development – patient background, consultation registry and consultation support.

Results: The initial study identified 29 potentially interesting items, divided into 3 sections – 13 items related to patient background, 8 items related to the consultation registry and 8 items related to the consultation support. The first round of experts' contribution had the participation of 92 primary care and 36 secondary care physicians; the second round had in total 79 participants. After the two rounds the questions and answer options were formulated. Some items were also excluded – 3 from the patient background and 2 from the consultation support. All the steps of the consensus process were completed in 4 months.

Conclusion: A tool to measure the control of asthma was developed with the support of a methodology that ensured its quality and validity. A study has now started that aims to evaluate the clinical control of a population of asthma patients using this tool.

Disclosure of Interest: None declared

IPCRG13-1154

PATIENTS' CONTACTS WITH PRIMARY HEALTH CARE REGARDING SPECIFIC LUNG CANCER SYMPTOMS IN THE YEAR PRIOR TO DIAGNOSIS

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Aim: To describe the contact patients had with primary health care retrospectively a year before lung cancer was diagnosed: number of contacts, specific symptoms of lung cancer and time from the first contact until referral to chest x-ray, specialized lung clinic and diagnosis.

Methods: The design was a retrospective medical record review with a quantitative approach. Ten records were selected from patients diagnosed with lung cancer in a mid-Swedish municipality from January to June 2011.

Results: Patients had on average eight primary health contacts (telephone advice and/or surgery visits) with a registered nurse or doctor the year before a lung cancer diagnosis was established. On average, four of these contacts could be linked with specific symptoms of lung cancer such as cough, dyspnea, fatigue, back/chest pain and hemoptysis. The average time span from the first contact about specific symptoms until diagnosis was 21 weeks. The average time from making a lung cancer clinic referral until establishing a diagnosis was three weeks.

Conclusion: The study showed a large discrepancy between practice and clinical guidelines on chest x-ray for smokers over 40 experiencing new respiratory symptoms. On average the patient had contact with primary health care showing specific lung cancer symptoms for eleven weeks until a chest x-ray referral was made and for 21 weeks until a diagnosis was established.

Disclosure of Interest: None declared

IPCRG13-1158

GOLD VERSUS GESEPOC: ARE THEY DIFFERENT?

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Aim: 1) Assess the possibility of applying guidelines in primary health care (PHC). 2) Assess whether there are differences implementing the baseline treatment between the two COPD guidelines.

Methods: The study took place in Barcelona city, in primary health care consultations. All patients diagnosed with COPD (from 6 practices) with a

spirometry registered in the last 24 months were recruited. Patients signed informed consent so we could review their clinical history.

Results: We included in the study 64 COPD patients. The mean age was 73 (SD 9.2). 87.5% were men; 22% were smokers. The average post-bronchodilator FEV₁ was 60.5 % (SD 19.1%). About 41% had 2 or more exacerbations in the last year (mean 1.5). The average time it takes to apply the GOLD guidelines is 5 minutes and the GesEPOC guidelines 8 minutes (SD 1.8). GOLD classification: 31.3% stage A, 29.7% B, 4.7% C and 34.4% D. About 6.3% were very severe whereas 26.6% were severe, 46.9% were moderate and 20.3% were mild. GesEPOC classification: 51.6% stage A, 15.6% B, 9.4% C and 20.3% D. About 4.7% were very severe while 14.1% were severe, 26.6% were moderate and 54.7% were mild. BODE index: Mild 56%, moderate 23,4%. The patients' baseline treatment matched with GOLD guidelines in 50% and in the case of GesEPOC about 36%. About 33% of treatments recommended were the same between GOLD guidelines and GesEPOC guidelines.

Conclusion: 1. It is feasible to implement these guidelines in PHC consultation PHC

2. 80% have a BODE score ≤ 4 so they can be followed in PHC.

3. The stage A and B according to GOLD represents more than half of the patients and in the case GesEPOC guidelines predominately A stage (less than 2 exacerbations/year).

4. Half match with GOLD base treatment, and only 36% in case of GesEPOC.

5. Treatments and severity are different when applying the two guidelines.

Disclosure of Interest: None declared

IPCRG13-1162

THYROID GLAND PATHOLOGY WORSENING BRONCHIAL ASTHMA: DRAFT OF PATHWAYS

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Aim: To assess asthma control and immunity in patients with bronchial asthma with/without thyropathology.

Methods: Patients with bronchial asthma (BA, 17 prs.), with BA and hypothyroidism (BA+hypoT, 14), with BA and hyperthyroidism (BA+hyperT, 14), were tested for serum IgE levels, IL4/IL1 and IL4/INF α ratio and performed spirometry. We counted BA remission duration and number of BA attacks/year. Data are shown as mean \pm SEM.

Results: Thyropathology increases BA attack's frequency (4.5 \pm 0.5 in BA vs 6.25 \pm 0.65 in BA+hypoT group, p=0.04; and 5.08 \pm 0.4 in BA+hyperT, p=0.06) and decreases the remission duration (12.08 \pm 0.88 weeks/year in BA group vs 8.63 \pm 0.88 in BA+hypoT, p=0.02, and 9.33 \pm 0.76 in BA+hyperT, p=0.03). Patients with BA+hyperT had serum IgE levels greater than patients with BA and with BA+hypoT (266.7 \pm 17.3 IU/L vs 159.4 \pm 3.8 IU/L, p=0.01, and 122.5 \pm 9,8 IU/L, p=0.001, respectively). Serum IL4/IL1 ratio in BA+hyperT group was increased (36.16 \pm 1.21 BA+hyperT vs 27.02 \pm 0.79 BA, p=0.001), while in BA+hypoT lessened (12.76 \pm 0.93 BA+hypoT, p<0.0001 vs BA). Ratio IL4/INF α was decreased in BA+hypoT group (1.1 \pm 0.1 BA+hypoT vs 2.21 \pm 0.37 BA, p=0.01). FEV₁ showed no difference between groups. Patients with BA+hypoT had FEF50 and FEF75 reduction versus BA (48.91 \pm 3.02% vs 58.45 \pm 2.53%, p=0.04, and 35.24 \pm 1.78% vs 47.23 \pm 1.78% p=0.03, respectively).

Conclusion: In the BA+hypoT group BA attacks were more often and BA remission was shorter than in BA group; FEF50, FEF75 values and Th2-activity were reduced: possible BA worsening pathway may concerns with myxedema (especially bronchi oedema). BA remission was also shorter in BA+hyperT group; values of serum IgE and IL4/IL1 ratio were increased: Th2-response excessive stimulation may be possible BA worsening pathway.

Disclosure of Interest: None declared

IPCRG13-1165

SPIROSMART: DEVELOPMENT OF A MOBILE PHONE-BASED SPIROMETER WITH FEEDBACK CAPABILITY.J. Stout^{1,*}, S. Patel¹, E. C. Larson¹, M. Goel¹, D. Burges², M. Rosenfeld³¹Computer Science and Engineering, ²Pediatrics, University of Washington, ³Pediatrics, Seattle Children's Hospital, Seattle, United States

Aim: Diagnostic spirometry is recommended for managing obstructive lung conditions. However, the cost of the device and lack of proper training and feedback on the maneuver impede diffusion of this technique-dependent test beyond specialists' offices. A cell phone-based spirometer using the phone's built-in microphone sensor has been validated against a standard device among healthy subjects at a US university. It is now being tested among youths and adults with obstructive lung disease, and interfaced with an existing feedback reporting system for purposes of remote coaching. The phone is being submitted for regulatory approval in the US.

Methods: The phone spirometer was concurrently compared against the pneumotach-based nSpire KoKo Legend as the "gold standard" among 52 healthy adults. Subjects held the phone at about arm's length, and after a full inspiration, forcibly exhaled at the phone screen until their volume was expelled. Audio data was recorded and sent to a server, which calculated flow by estimating models of the user's vocal tract, and sound reverberation around the head. Estimated exhaled volume was calculated by integrating estimated flow over time.

Results: The cell phone compared within 5.0% of the KoKo for FVC, FEV₁, PEF, and FEV₁/FVC. "Personalization" tended to enhance these models.

Conclusion: A phone-based spirometer with remote feedback capability may provide an alternative for collecting lung function from the home, and other remote or resource-poor settings.

Disclosure of Interest: None declared

IPCRG13-1166

PREDICTORS OF ICS/LABA PRESCRIBING IN COPD PATIENTSH. Melbye^{1,*}, E. Drivenes¹, A. Østrem²¹Dept of Community Medicine, General Practice Research Unit, University of Tromsø, Tromsø, ²University of Oslo, Oslo, Norway

Aim: To study to which degree patients' characteristics predict GPs' prescribing of ICS/LABA

Methods: 380 patients aged 40 years or more with a diagnosis of asthma or COPD registered in the electronic medical record the last 5 years, were recruited in 2009 at seven Norwegian GP practices. Prescription of pulmonary medication, the patients' co-morbidities, spirometry results, and exacerbations the previous year were registered, and the patient answered questions on smoking and the Clinical COPD Questionnaire (CCQ). The predictive value of patient characteristics for the prescribing of ICS/LABA were evaluated by univariate and multivariate logistic regression among patients with post-bronchodilator FEV₁/FVC <0.7.

Results: Post-bronchodilator FEV₁/FVC <0.7 was found in 149 patients, and 55.6 % of these were on treatment with ICS/LABA. In the univariate analysis the strongest predictors of increased ICS/LABA prescribing were a diagnosis of asthma made by the GP, OR 3.1 (95% CI 1.6-6.2), and one or more exacerbations registered the previous year, OR 2.0 (1.0-4.1). Cardiovascular disease was associated with a decreased ICS/LABA prescribing, OR 0.4 (0.2-0.8), as was current smoking OR 0.3 (0.1-1.1). The significant (p<0.05) predictors of ICS/LABA prescribing in the multivariable logistic regression were asthma diagnosis (OR 3.3), FEV₁ % predicted <50 (OR 2.3) and current smoking (OR 0.2).

Conclusion: It was surprising that cardiovascular disease and current smoking was associated with decreased prescribing of ICS/LABA. Reasons for this may be an intention to avoid multi-pharmacy in patients with co-morbidities, and a wish to communicate to COPD patients that smoking cessation is first choice of treatment.

Disclosure of Interest: None declared

IPCRG13-1167

ASTHMA AND PNEUMONIA IN UNDER-FIVES ADMITTED WITH ACUTE RESPIRATORY INFECTIONS (ARI) IN UGANDAR. Nantanda¹, M. Ostergaard^{2,*}, J. K. Tumwine¹¹Makerere University College of Health Sciences, Makerere, Uganda, ²University of Copenhagen, Copenhagen, Denmark

Aim: Asthma in under-fives may be under-diagnosed and mis-diagnosed and managed as bacterial pneumonia in children. To identify the magnitude of asthma and pneumonia among under-fives admitted with acute respiratory infections (ARI) in Mulago Hospital, Kampala, Uganda.

Methods: We used case definitions based on the history, clinical examination findings, laboratory results and response to treatment. A questionnaire on the extended history and physical examination, blood and radiological investigations were done. A panel of three paediatricians reviewed the case reports and guided by the study case definitions for pneumonia and asthma, categorized each participant as asthma, bacterial pneumonia, viral pneumonia or otherwise.

Results: 614 children aged 2-59 months presenting with cough and difficulty in breathing at the paediatric emergency unit of Mulago National Referral and Training Hospital. 253 (41.2%) of the children were classified as asthma syndrome, of which 50 (19.8%) had bacterial pneumonia as well. Pneumonia alone contributed 329 (53.6%) of the total diagnoses; 167 (27.1%) had bacterial pneumonia, and 163 (26.5%) had viral pneumonia. Only 9.5% of the children with asthma had been diagnosed previously. All children with viral pneumonia and 193 (95.1%) of those with asthma syndrome alone received antibiotics. 184 (90.6%) and 83 (40.9%) of the children with asthma syndrome alone received short-acting bronchodilators and steroids respectively

Conclusion: The magnitude of asthma and viral pneumonia among under-fives attending Mulago hospital seem surprisingly high. However, most are managed as bacterial pneumonia. There is need for diagnostic algorithms for asthma and pneumonia in resource limited settings.

Disclosure of Interest: None declared

IPCRG13-1168

PREVALENCE OF COPD AND ITS SOCIOECONOMIC AND LIFESTYLE DETERMINANTS IN BANGLADESH: PRELIMINARY RESULTS FROM A POPULATION BASED STUDYD.S. Alam¹, M. A. H. Chowdhury¹, A. T. Siddiquee¹, S. Pervin¹, S. Ahmed¹, L. W. Niessen^{1,2}¹Centre for Control of Chronic Diseases, icddr,b, 68 Shaheed Tajuddin Ahmed Sarani, Mohakhali, Dhaka 1212, Bangladesh, ²Department of International Health, Johns Hopkins School of Public Health, Baltimore, USA

Aim: Chronic obstructive pulmonary disease (COPD) is a leading cause of adult mortality and morbidity globally but under diagnosed condition in low income settings. There is paucity of population-based data on COPD prevalence and its socioeconomic and lifestyle determinants in Bangladesh.

Methods: In a cross sectional population-based study, we measured lung function of 3758 randomly selected adults, 1715 males and 2043 females ≥40 years from rural Matlab (n=1849), Chandpur and urban Kamalapur (n=1909), Dhaka, Bangladesh, using handheld spirometer (EasyOne™, ndd Medical Technologies). COPD was defined as post-bronchodilator ratio of Forced Expiratory Volume in 1st second (FEV₁) to Forced Vital Capacity (FVC) ≤0.7. Socio-economic and lifestyle variables included educational status, household income, occupation, exposure to biomass fuel burning, and smoking history. Determinants of COPD were identified using multiple logistic regression model.

Results: Overall, 13.4% of the participants had COPD with higher prevalence among rural than urban residents (16.8% vs 10.1, p<0.001) and in males than females (21.9% vs 6.2, p<0.001). Univariate analysis showed significant association of COPD with illiteracy, manual work, ever smoker, biomass fuel use, underweight and history of asthma. In the adjusted model, older age (50-59 y: OR 2.2 95% CI 1.6 – 2.9; 60-69 y OR 4.4 95% CI 3.3 – 5.8), illiteracy

(OR 1.5 95% CI 1.2 – 1.8), underweight (OR 1.5 95% CI 1.1 – 2.1) as well as overweight (OR 2.8 95% CI 2.0 – 4.1), smoking (OR 3.2 95% CI 2.2 – 4.6), biomass fuel use (OR 1.4 95% CI 1.1 – 1.8) and history of asthma (OR 6.5 95% CI 4.7 – 9.0) were significantly associated with higher risk of COPD.

Conclusion: COPD is a significant public health problem in Bangladesh. Illiteracy, smoking and exposure to biomass fuel burning are independent modifiable risk factors. Further analyses are needed for better understanding the influence of socioeconomic and lifestyle factors on COPD in Bangladesh.

Disclosure of Interest: None declared

IPCRG13-1046

AN APPROACH TO IMPROVING ASTHMA PATIENT EDUCATION USING SMART PHONES

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Brief outline of context: Clinical studies show inadequate inhaler technique is one of the major causes of Asthma treatment failure. The traditional method of patient education on inhalers does not give proper time and opportunity for patients to learn and practice the correct technique. High rates of incorrect technique show the need of more effective educational tools.

Brief outline of what change you planned to make: Introducing a new platform for Asthma patients to use their daily utility tool like smart phones to learn correct inhaler technique in their regional language and practice using device camera to get visual feedback on their technique and share the results with their physicians.

Assessment of existing situation and analysis of its cause: Commonly used tools for education on inhaler technique include verbal/written instructions or a demonstration by healthcare workers. Online tools and videos have proliferated, but are mostly passive and lack important attributes such as ease of use, accessibility, and comprehensiveness. There is a need for more efficient tool to reduce time demands of busy practitioners.

Strategy for change: who, how, following what timetable: Our team brainstormed the education process to create interactive tools like "How to inhale", this tool addresses errors that result from failure to take deep breaths or identify the points of full inhalation, and the correct time to press inhaler. "Interactive Inhaler Quiz" points out common errors while inhaling and tips to avoid them.

Measurement of improvement: A new approach to inhaler training and asthma education is likely to be a more effective alternative to the conventional methods.

Effects of changes: Less misuse of inhalers, effective drug intake into the lungs, improved patient satisfaction and better treatment plan.

Lessons learnt: Patients need time and constant practice to perfect their technique. Using Smartphone apps for persistent training can give better treatment results.

Message for others: Use of smart phones has the potential to get patient education system to the next level where people can independently train themselves with better retention.

Disclosure of Interest: None declared

IPCRG13-1155

PHENOTYPE-BASED APPROACH TO CHILDREN'S ASTHMA THERAPY ADJUSTMENT IN COMMUNITY PRACTICE

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Brief outline of context: Asthma is a variable disease and has periods of exacerbation and remission. As to level of asthma control, each patient may need more or less anti-inflammatory (basic) drugs amount.

Brief outline of what change you planned to make: To provide individual, phenotype-based approach to asthma therapy adjustment in real clinical practice.

Assessment of existing situation and analysis of its cause: Currently

controller therapy should be increased after exacerbation (lost of control) and/or before periods of expected exacerbations (pollen or viral epidemic seasons etc). Step-up is possible by ICS dose increase or by adding another controller medication. Treatment choice is not well predefined.

Strategy for change: who, how, following what timetable: During September 2012 in this 3-month interventional open real practice study 90 patients aged 4-7 yrs with moderate asthma (registered ≥ 12 month), controlled on ICS monotherapy, were assessed for the exacerbation rate in Oct-Dec 2011 and their major trigger (virus/allergens). All the patients had allergic rhinitis. ICS dose was not changed. Children were assigned to one of treatment groups: (A) predominant virus-induced exacerbations: +antileucotrien; (B) predominant allergen-induced exacerbations: +intranasal steroid; control A (CA): predominant virus -induced exacerbations: +intranasal steroid; control B (CB): predominant allergen-induced exacerbations: + antileucotrien.

Measurement of improvement: Number of exacerbations and 3-month average ACT score were examined.

Effects of changes:

	n, persons	Number of exacerbations (\pm SD)	Mean ACT score (\pm SD)
Group A	24	0,8 \pm 0,3	21,6 \pm 1,0
Group B	26	0,9 \pm 0,1	22,3 \pm 1,3
Group CA	20	1,6 \pm 0,2	19,7 \pm 0,8
Group CB	20	1,4 \pm 0,1	22,0 \pm 1,1
p(A-CA)		0,025	0,06
p(B-CB)		0,03	0,42

Lessons learnt: AR directed drugs can improve asthma control. Virus-induced phenotype benefits more from antileukotriene supplementation.

Message for others: Early autumn asthma therapy individual adjustment can be useful in pre-schoolers.

Disclosure of Interest: None declared

IPCRG13-1137

HOW TO IMPROVE THE CARE OF COPD AND ASTHMA PATIENTS IN SWEDEN

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Brief outline of context: A tool for quality monitoring is the use of indicators. So far there have been no quality tools that provide opportunities to develop the quality of care in terms of respiratory diseases in Sweden.

Brief outline of what change you planned to make: Aims To build a National Quality Registry for COPD and Asthma in order to improve the quality of asthma and COPD care and to ensure equal treatment in all parts of Sweden.

Strategy for change: who, how, following what timetable: Methods A steering committee was appointed to select important indicators of quality. The committee was composed of specialists in general medical practice, allergologists, pulmonologists, paediatricians, asthma nurses and representatives of patient organizations. **Results** The registry was designed to fit the Health Care Centres in primary care, although the COPD part of the registry also has a hospital version. It contains personal information about diagnosis, treatment, and outcomes. When entering the registry you can choose between Asthma and COPD. You will only see and answer questions relevant for the certain disease. Many questions relates to both diagnosis such as spirometry data and smoking habits. Examples of registrations are: Time of diagnosis, smoking habits, lung function, basic allergy screening, health care consumption such as emergency visits and hospital treatments, patient reported outcomes and treatment.

Conclusions: The Swedish Association of Local Authorities and Regions (SALAR) now supports the results of the steering committee's work - "The Airway Registry". The feedback from the registry to the health care units will be of utter importance and enable development of the quality of care of patients with asthma and/or COPD in Sweden. It will also provide unique

opportunities for research. An official report of registry summaries will be presented every year.

Disclosure of Interest: None declared

IPCRG13-1129

ENABLING ONLINE SPIROMETRY TRAINING AND FEEDBACK FROM THE USA TO AUSTRALIA: E-QUALITY PROGRAMME RESULTS

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Brief outline of context: Clinical guidelines recommend routine use of spirometry for patients with obstructive lung diseases.

Brief outline of what change you planned to make: An online spirometry training and feedback program for general practices was developed at a university setting. It includes interactive online training materials, and remote customized feedback for tests performed. Colleagues in Australia and the USA received support through the IPCRG E-Quality programme to pilot use of these materials at general practices in Adelaide.

Assessment of existing situation and analysis of its cause: Spirometry is typically available in specialists' offices, though often not in general practices, where training in its proper use is often unavailable.

Strategy for change: who, how, following what timetable: Online training materials were distributed to four Adelaide practices. Over-reader training in technique interpretation and grading using the Feedback Reporting System (FRS) relied on monthly and "as needed" Skype sessions. Using ndd spirometers, tests performed from August to December 2012 at two general practices were graded by the Australia team using the FRS.

Measurement of improvement: These two practices produced a total of 513 tests, an average of 63 and 40 tests per month at Practice A and B, respectively. The combined proportion of acceptable tests was 77% in August, and 82% in December. A re-graded sample showed excellent concordance. Training materials were used extensively at only one of these practices.

Effects of changes: Above.

Lessons learnt: Accessing the recorded online resources was complicated, likely contributing to low uptake. A "dashboard" is now enables easy access. Training materials are now distributed on an interactive learning management system.

Message for others: Implementing spirometry in a general practice setting can be facilitated through online training and feedback. Furthermore, new test over-readers can be remotely trained to grade tests for technique.

Disclosure of Interest: None declared

IPCRG13-1090

DESCRIPTION OF A DUTCH WELL-ESTABLISHED ASTHMA/COPD SERVICE FOR PRIMARY CARE

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Brief outline of context: In 2007, the Asthma/COPD (AC) service was implemented in The North of the Netherlands to advise general practitioner(GPs) in diagnosing, treating and managing their asthma and COPD patients by involving local pulmonologists.

Brief outline of what change you planned to make: To describe the AC service and the patient population.

Assessment of existing situation and analysis of its cause: Diagnosing asthma and COPD is difficult, therefore many patients are still undiagnosed and untreated.

Strategy for change: who, how, following what timetable: GPs can refer patients with evidence of respiratory problems to the AC service for diagnostic or follow up assessment and advice. Patients complete a history questionnaire,

the Clinical COPD Questionnaire (CCQ), the Asthma Control Questionnaire (ACQ), and a trained technician performs spirometry. The pulmonologist inspects the data online, without seeing the patient, and sends the GP the results along with a diagnosis and treatment advice. Finally GPs discusses these results with their patients.

Measurement of improvement: Until now, the service has included ~12.000 patients (mean age = 54±19 years, 44% male) from 359 GPs and ~2000 new patients are included yearly.

Effects of changes: In 78% assessments, the pulmonologist was able to diagnose patients based on online information (45% asthma, 17% COPD, 7% asthma/COPD overlap).

Lessons learnt: This Dutch AC service has proven to be a feasible collaboration system between GPs and pulmonologists.

Message for others: This service might also be feasible for the support of GPs in other chronic diseases and countries.

Disclosure of Interest: None declared

IPCRG13-1088

IMPROVING PRIMARY CARE RESPIRATORY SERVICES IN A LESS DEVELOPED COUNTRY

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Brief outline of context: Configuration of the healthcare system in a least developed country is different from that of a developed country. Although it is developed according to the need and available resources of the country, it has many advantages and disadvantages as well. To address the disadvantages, primary care respiratory group of Bangladesh (PCRG-BD) undertook a program named "Better Breathing Bangladesh (BBB)", which is recognized by WHO-GARD as a demonstration project. As a part of BBB project we have trained 200 primary care doctors and 50 have now successfully completed the asthma diploma level course. Approximately 200 nurses have attended asthma and inhaler workshops in Dhaka, Khulna and Rangpur and 25 pharmacists attended an inhaler workshop this year. We have also run COPD and spirometry workshops for about 200 doctors.

Brief outline of what change you planned to make: These doctors are setting up Community Respiratory Centres (CRC), the first of their kind in Bangladesh. So far, we have inaugurated 12 CRC and using a digital (electronic) recording system) in line with national policy. We also developed software for record-keeping and national database development. Every CRC has a structured protocol for the management of asthma and COPD with regular support from the central committee of IPCRG-BD.

Assessment of existing situation and analysis of its cause: Through the network of data from the CRCs we have got the primary response, which is encouraging for the project. People are becoming more aware of long-standing respiratory diseases like asthma and COPD. Health-seeking behavior is changing as well in the primary care level in a positive way.

Strategy for change: who, how, following what timetable: As described in the text

Measurement of improvement: Prevalence study

Effects of changes: We are expecting a very significant positive change on the management of respiratory diseases in Bangladesh in few years

Lessons learnt: Structured plan in the respiratory care at the primary care level is the key element of better care in the developing country

Message for others: As per the text

Disclosure of Interest: None declared

IPCRG13-1070

ACCURACY OF CASE-FINDING FOR COPD BY PRACTICE NURSES

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Brief outline of context: The importance of the availability of reliable spirometry in the community for the diagnosis of COPD has been highlighted in Australia by the publication of the burden of obstructive lung disease (BOLD) study.

Brief outline of what change you planned to make: Our aim was to assess the accuracy of case finding for COPD by practice nurses in the context of Australian primary care.

Assessment of existing situation and analysis of its cause: There is currently underuse of spirometry in Australian primary care related to problems in organisation and delivery of this service.

Strategy for change: who, how, following what timetable: Practice nurses (PNs) undertook 8+ hours of education in spirometry and case finding for diagnosis of COPD. Practices invited patients at risk of COPD to attend a case-finding visit. An expert provided quality control of spirometry traces.

Measurement of improvement: For patients identified by PNs as having COPD, spirometry was also performed by experienced project officers.

Effects of changes: PNs from 36 practices invited 10231 patients and 1629 (16%) attended for spirometry. Of these 287 (18%) were given a diagnosis of COPD. Of these, 254 were able to be visited by the project officers and the diagnosis of COPD was confirmed in 69% of cases. Patients for whom the diagnosis was not confirmed were younger, had higher post-BD FEV₁ and lower BD reversibility.

Lessons learnt: Screening in primary care can identify patients with undiagnosed COPD, but despite training and support, PNs had difficulty interpreting spirometry.

Message for others: More work is needed on developing models for providing high quality spirometry in primary care.

Disclosure of Interest: None declared

IPCRG13-1066

FAVOURABLE RESULTS FROM A DUTCH ASTHMA/COPD SERVICE FOR PRIMARY CARE

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Brief outline of context: In 2007, an asthma/COPD(AC) service was implemented in the North of the Netherlands to advise general practitioner(GP)s in diagnosing and treating their asthma and COPD patients by involving local pulmonologists.

Brief outline of what change you planned to make: Aim of this study is to examine longitudinal data on disease related outcomes.

Assessment of existing situation and analysis of its cause: Spirometry, medical history, health status (Clinical COPD Questionnaire (CCQ)) and asthma control (Asthma Control Questionnaire (ACQ)) were assessed by the AC service.

Strategy for change: who, how, following what timetable: GPs may refer patients for single/yearly follow up assessments. If so, patients are automatically scheduled for an additional 3 months assessment if a change in medication is advised by the pulmonologist. At the moment, ~12.000 baseline and ~1000 follow up visits are performed.

Measurement of improvement: Non-parametric tests were used for the evaluation of exacerbations and ACQ/CCQ scores between baseline and follow up.

Effects of changes: The proportion of patients with ≥ 1 exacerbation/year decreased from 37% at baseline to 26% at 12 months (n=1062, p<0.000). In COPD patients scheduled for the 3 months follow up, the proportion of stable COPD patients (CCQ<1) increased from 37% (baseline) to 51% (3 months, n=149 p=0.001). In asthma patients the proportion of patients with well-controlled asthma (ACQ <0.75) increased from 24% (baseline) to 49% (3 months, n=504 p<0.000).

Lessons learnt: Patients in the AC service improved on exacerbation/year. If change in medication was advised, COPD patients improved on health status and asthma patients improved on asthma control. Asthma and COPD patients referred to 12 months follow up stabilized in health status and asthma control.

Message for others: More research is needed to elucidate which factors contribute to the improvement of patients.

Disclosure of Interest: None declared

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