403. Quality of diagnosis and assessment in primary care

P3760

How often do respiratory specialists agree with the diagnosis of COPD made in general practice? An audit of referrals to a community based COPD centre (BreathingSpace) in the UK

Angela Green, Gurnam Basran, Gail South. *CLAHRC South Yorkshire, NHS Rotherham, Rotherham, United Kingdom Respiratory Unit, Rotherham Foundation Trust, Rotherham, United Kingdom Rotherham Community Health Service, BreathingSpace, Rotherham, United Kingdom*

The Rotherham BreathingSpace (BS) is a nurse-led community based centre for the delivery of specialist care for Chronic Obstructive Pulmonary Disease (COPD). Previous Rotherham general practice (GP) audits of COPD diagnosis and management showed some improvements in quality between 2007 and 2008 but highlighted the current UK Quality and Outcomes Framework used in general practice assessed only the quantity and not the quality of spirometry. The purpose of this audit was to assess the reliability of the diagnosis of COPD made in general practice when referred on to a specialist respiratory service (BS). A retrospective review of a random sample of COPD patient referral forms (N=398, 207 males and 191 females) sent to BS from general practice between May 2007 and Sept 2010 was undertaken. 213 (54%) of these referrals had spirometry measures included on the referral (mean FEV1% p = 54, FEV1/FVC= 0.59). Of the completed assessments (N=341) BS agreed with GP diagnosis of COPD in 277 (81%) of patients and disagreed with the COPD diagnosis in 64 (19%) of patients. The BS non COPD diagnoses were Asthma (N=30, 9%), Restrictive lung disease (N=20, 6%), non obstructive Emphysema (N=5, 2%), Bronchiectasis (N=2, 0.6%) and no respiratory disease (N=20, 6%). These findings suggest that 4 out of 5 COPD diagnoses made in general practice referred to our centre (BS) are reliable but there is still room for improvement. Further education and quality improvement is recommended in COPD diagnosis in line with national guidelines.

P3761

A survey of pulse oximeter use by general practitioners in East Berkshire, UK

Sarah Menzies, John Wiggins. *Department of Respiratory Medicine, Wexham Park Hospital, Slough, Berkshire, United Kingdom*

Introduction: The importance of measuring oxygen saturation in primary care is highlighted in many national guidelines, such as asthma (*Thorax* 2008; 63(Suppl 4): iv1-121), community-acquired pneumonia (*Thorax* 2009; 64(Suppl 3): iii1-55), Chronic Obstructive Pulmonary Disease and guidance on the use of emergency oxygen. Pulse oximeters are cheap, portable, and easy to use, but it is unclear whether they are widely utilized in the community setting.
Methods: Questionnaires were sent to all 54 general practitioner (GP) surgeries in the region - requesting information about their pulse oximeter use and opinions of their clinical value. A response from all practices was achieved by making telephone contact in the event the questionnaire was not returned.
Results: Twenty-one (39%) of the 54 surgeries did not own a pulse oximeter. Of these, 6/21 (29%) said they would not find one useful, and had no future intention of purchasing one. Ten of these 21 surgeries (48%) were keen to obtain one, but the main barriers to this were cost and the time required to research the market. The inner-city surgeries were less likely to have one – 8/17 (47%) inner-city surgeries vs. 25/37 (68%) outside the city. Of the 33 surgeries that did have an oximeter, 89% found them clinically very helpful, and the majority had just one machine (24/33 – 73%).
Conclusions: Over a third of GP surgeries do not own a pulse oximeter – despite clear indications for their use in the assessment of patients with respiratory illness. Highlighting these indications to GPs, in addition to outlining their relative low cost and ease of use may increase the popularity of this monitor of the "fifth vital sign" in primary care.

P3762

Using population insight studies to define effective prevention and identification interventions in COPD

Matt Kearney, Julia Crighton, Kevin Holton, Anne Moger, Robert Winter, Sue Hill. *Respiratory Programme, Dept. of Health, London, United Kingdom*

Background: In England over 3 million people are living with COPD. Only 835,000 are diagnosed usually at the more severe end of the disease spectrum. The national COPD programme highlighted the need for strategies both to prevent and identify COPD earlier in order to fundamentally change the disease burden and improve outcomes for people.
Objectives: To establish optimum approaches to promote positive lung health behaviour and symptom recognition by individuals and populations at risk of COPD.
Methods: An extensive literature review was undertaken together with stakeholder interviews to identify reasons for limited popular awareness of COPD and understand the impact of behaviour change interventions. Focus groups and interviews with informants in priority population segments were used to derive and test insights into effective approaches.
Results: Behaviour change interventions in COPD are more effective if targeted on priority population segments. Collaboration with charities and commercial organisations can help to identify and engage people at risk. Behaviour change interventions should be tailored to the individual and the population segment. Measurement of lung age may increase likelihood of stopping smoking. For those who are healthy but at risk, messages should be positively framed around lung health. For those with symptoms, negative message framing around lung disease may be more effective in changing behavior.
Conclusions: Interventions tailored to the individual and population segment are more likely to be effective in changing behaviour. The results of this segmentation and insight work have informed the approach in England to the prevention and early identification of COPD.

P3763

Poor quality of health services at primary care level is the leading cause of uncontrolled asthma in India

J.K. Samaria[1], Moosa Hussain[1], Pavan Yadav MV[1], Anup P.K. Ahmed[1], Manoj Meena[1], Paresh Kulkarni[2], Archisman Mahapatra[3], Saket Sharma[1]. *[1]Department of Chest Diseases, Instt of Medical Sciences, Banaras Hindu University, Varanasi, Uttar Pradesh, India; [2]Deptt of Preventive and Social Medicine, Instt of Medical Sciences, Banaras Hindu University, Varanasi, Uttar Pradesh, India; [3]Deptt of Biochemistry, Instt of Medical Sciences, Banaras Hindu University, Varanasi, Uttar Pradesh, India*

Background: Due to inadequate health resources in India the peripheral health services are provided by unqualified practitioners who are unaware of management protocols. This study attempts to assess the practices at primary care level
Method: 200 patients of Asthma were diagnosed and selected for the study. Data was collected by interview at a tertiary care center and by auditing the prescriptions of the practitioners
Observation: Of the 200 patients in the study 70.2% were previously diagnosed as asthma of which only 3.38% had undergone spirometry. 16.7% of the subjects were being treated by unqualified practitioners, while 38% and 44% by GPs (medical graduate) and physician (PG degree) respectively. 93% patients treated by the unqualified practitioners were uncontrolled or partially controlled. Among those treated by unqualified practitioners 64.3% were being inappropriately prescribed oral bronchodilators and oral steroids. Subjects treated by physicians received appropriate treatment with 81.1% and 67.6% receiving inhaled beta2 agonist and inhaled steroids respectively. GPs prescribed inappropriate treatment in a higher proportion (63%) and prescribed medications like oral steroids (34.4%), oral beta2 agonists (34.4%) and thoephylline (38.8%). Only 15.5% of the subjects were being monitored by PEFR
Conclusion: Asthmatics in India are being inadequately diagnosed, treated and monitored. Major reason is the poor understanding of practitioners especially with the guidelines –GINA especially in the case of unqualified practitioners and GPs. There is need to educate the practitioners particularly those at the periphery about the guidelines for asthma management.

P3764

Novel study design to assess the utility of the COPD assessment test (CAT)

Kevin Gruffydd-Jones[1], Helen Pearce[2], Steve Holmes[3], Peter Kardos[4], Roger Escamila[5], Roberto Dal Negro[6], June Roberts[7], Gilbert Nadeau[2], David Leather[2], Paul Jones[8]. *[1]Box Surgery, Box, Corsham, United Kingdom; [2]Respiratory Centre of Excellence, GlaxoSmithKline, London, United Kingdom; [3]Park Road Surgery, Shepton Mallet, Somerset, United Kingdom; [4]Gemeinschaftspraxis und Zentrum für Pneumologie, Allergologie, Schlafmedizin, Klinik Maingau, Frankfurt, Germany; [5]Service de Pneumologie, Hôpital Larrey-CHU Toulouse, Toulouse, France; [6]Divisione di Pneumologia, Ospedale Civile Orlandi di Bussolengo, Bussolengo, Verona, Italy; [7]Clinical Sciences Building, Salford Royal Hospital Foundation Trust, Salford, United Kingdom; [8]Clincial Sciences, St George's University of London, London, United Kingdom*

Background: CAT is a new, patient completed, questionnaire designed to provide a simple and reliable measure of health status in COPD. The CAT has been validated against other measures of quality of life and outcomes of COPD (Jones P *et al*, ERJ 2009;34:648-54). However, its ability to improve the dialogue between patient and physicians has not been evaluated. We set out to design a study to assess the impact of CAT on the quality of the consultation between a primary care physician (PCP) and COPD patient.
Methods: The CAT in Primary Care Study is a randomised, parallel group study conducted in 5 European countries. 160 PCPs without a working knowledge of CAT are recruited to the study. Each PCP completes 6 videoed consultations with standardised COPD patients (professional actors). PCPs are randomised to the CAT arm: with patient notes and CAT available in the consultations; or the non-CAT arm: with just the patient notes available.
Cases were developed to include usual patient issues, which the actors were trained not to proactively raise with the PCP. The cases and their CAT scores were independently verified.
Assessments are conducted by independent physicians. Each assessor will review 4 test cases for benchmarking. The assessments are based on the PCPs ability to

identify, understand and manage the patient issues (A) and whether they reviewed key typical COPD issues (B). The primary endpoint of the study is the comparison of the assessment score (A+B) between the arms. The study has >90% power to detect a 3 point (out of 40) difference between the arms.
A pilot study was successfully conducted with 10 PCPs to confirm the feasibility of the study. The study is ongoing and results are expected late 2011.

P3765
The Breathing Bus – A primary care model for identifying undiagnosed COPD in hard to reach populations. A pilot study
June Roberts[1], Helena Cullen[2], Nawar Diar Bakerly[1]. *[1]Respiratory Medicine, Salford Royal NHS Foundation Trust, Salford, Greater Manchester, United Kingdom; [2]Adult Services, Salford Community Health, Salford, Greater Manchester, United Kingdom*

Background: COPD is frequently undiagnosed especially in socio-economically deprived (SED) populations who are most at risk of this condition.
Aims: To improve access to hard to reach groups
To identify those most at risk of having undiagnosed COPD and to signpost to general practice for further assessment
Methods: A mobile health bus was sited in areas of high SED with good footfall and accessibility. Nurses trained to recognise COPD syptoms, perform FEV6 micro-spirometry and experienced in informal, non-medicalised approaches to health and disease staffed the bus. High risk individuals (over 35 yrs, smoker or ex-smoker with symptoms suggestive of COPD) were targeted for FEV6 micro-spirometry. Consent was gained to share all results with own GP. Those with unexplained respiratory symptoms and/or abnormal FEV6 readings were asked to see their GP for further assessment. Follow up with patient experience survey took place 8 weeks after a visit to the bus.
Results: The bus visited 6 sites on 7 occasions. 350 people visited the bus, between 6% and 87% of contacts were from areas of high SED. Of 119 in the high risk group, 67% men and 45% females had symptoms suggesting COPD and of those suitable for FEV6 readings 30% of men and 38% women had airflow obstruction: all were signposted to their GP. 48% were current smokers. Data from the experience survey indicates that many suspected something was wrong; accessibility and convenience prompted them to come forward for testing.
Conclusion: Our pilot work suggests that mobile units in non-clinical settings can increase accessibility to SED groups and prompt high risk individuals to be tested for COPD. Further work is needed.

P3766
Two year mortality of COPD in primary care in Greece: An observational study
Markos Minas, Ioanna Verou-Katsarou, Parthena Mystridou, Eleni Apostolidou, Hatzoglou Chrisi, Konstantinos Gourgoulianis. *Respiratory Medicine Department, University of Thessaly Medical School, Larissa, Greece*

Introduction: COPD remains a significant cause of death worldwide. However, in primary care in Greece there is still a large proportion of undiagnosed COPD patients. Parameters associated with mortality in COPD patients have not been identified.
Aims and objectives: To assess the parameters associated with two year mortality in newly diagnosed COPD patients in primary care in Greece
Methods: Using an open spirometry programme, 118 newly diagnosed COPD patients were followed up for two years. Phone contact to assess vital status was performed every six months, whereas the study participants were examined and performed spirometry by the study team once a year after the initial diagnosis.
Results: During the two year follow up, a great proportion of COPD patients quitted smoking after the initial diagnosis. However, there was no change in respiratory symptoms, and only the 68.2% showed compliance with treatment. Overall mortality was 28.0% (33 out of 118 subjects). Parameters associated with two year mortality in a cox regression model were age ($p<0.001$), smoking status (current or former smoker, $p=0.025$) and history of depression ($p=0.001$).
Conclusion: Mortality of COPD patients in primary care in Greece remains significant high. History of depression was associated with increased mortality and should be taken into account when assessing COPD patients. A more intense monitoring and better health care provided at these patients is suggested.

P3767
Exhaled nitric oxide: A useful adjunct test in assessing asthma control in primary care – A cross-sectional exploration
Evelien Termeer[1], Jiska Snoeck-Stroband[2], Hanneke Nuiten[1], Persijn Honkoop[2], Rik Loymans[3], Bart Thoonen[4], Ivo Smeele[5], Jaap Sont[2], Chris van Weel[1], Tjard Schermer[1]. *[1]Department of Primary and Community Care, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands; [2]Department of Medical Decision Making, Leiden University Medical Centre, Leiden, Netherlands; [3]Department of General Practice, Academic Medical Centre Amsterdam, Amsterdam, Netherlands; [4]Diagnostic Centre, SHO, Primary Care Diagnostic Centre Velp, Velp, Netherlands; [5]Diagnostic Centre, SHL, Primary Care Diagnostic Centre Breda, Breda, Netherlands*

Background: Established markers of asthma control, symptoms and lung function do not measure underlying bronchial inflammation and their results are sometimes contradicting. Measuring fractional exhaled nitric oxide (FeNO) as a marker of eosinophilic airway inflammation might offer benefit.
Aim: To explore consequences of adding FeNO as an adjunct to symptoms and spirometry for assessing asthma control in primary care.
Methods: We performed a cross-sectional analysis of two available cohorts of adult asthmatics. We assessed FeNO, lung function and Asthma Control Questionnaire (ACQ) levels in all participants. Pearson correlation coefficients were calculated between FeNO, ACQ,%FEV_1 predicted and%reversibility. In a scenario analysis, patients' asthma control was categorized according to two established control markers, and with FeNO as an extra marker.
Results: We included 147 and 160 patients (in total 63% female; mean age 35.4). Correlations between FeNO, symptoms and lung function were weak (max 0.240, between FeNO and%reversibility). All three control markers were consistent in interpretation of asthma control in 25.7% of the population. In 28.1% symptoms and lung function were consistent but FeNO was contradicting and in another 46.3% the two established markers were contradicting.
Conclusions: We observed weak correlations between FeNO, symptoms and lung function in adults with asthma in primary care, which confirms that FeNO is an independent marker in assessing asthma control.
In almost half the population, results of symptoms and lung function were contradicting regarding assessing asthma control; in this group FeNO may fine-tune categorization of asthma control.

P3768
A pilot study to detect airflow obstruction in smokers using spirometry in a local GP surgery
Bhupinder Mann[1], Essam Ramhamadany[1], Lesley Seddon[2], Emma Loveridge[3], Angela Glennon[3]. *[1]Respiratory Department, West Middlesex University Hospital, London, Middlesex, United Kingdom; [2]Maswell Park GP Surgery, Maswell Park, London, Middlesex, United Kingdom; [3]Respiratory Section, Astra Zeneca, London, United Kingdom*

COPD is under diagnosed worldwide. In our locality, it is thought that a fifth of all COPD cases have been identified.
Aim: To carry out a pilot study to screen smokers and ex-smokers in a local GP practice with spirometry to allow earlier COPD diagnosis.
Methodology: Over a 7 month period, subjects were identified from a GP practice database. The target population included smokers/ex-smokers over the age of 35 who had smoked a minimum of 10 pack years; recurrent or chronic respiratory symptoms; occupational exposure to respiratory irritants or family history of COPD. Patients known to have COPD or asthma were excluded.
Appropriate subjects completed a short questionnaire. Severity of airflow obstruction (AFO) was assessed using the UK NICE COPD 2004 guidelines: mild AFO FEV1 50-79% predicted, moderate AFO FEV1 30-49% predicted, severe AFO FEV1 <30% predicted. Spirometry was carried out by a trained nurse.
Results: Out of 5,500 patients, 723 subjects were contacted and 203 had spirometry. In total 169 subjects had reliable spirometry which showed normal results in 80 patients (47.3%). AFO was present in 32/169 (18.9%-using NICE criteria). A further 50/169 (corresponding to GOLD stage 1 disease but not in the NICE guidelines) may be at risk giving a figure of 48.4% with AFO and possible COPD.Out of 92 patients who completed the questionnaire, 71 (77.1%) had not heard of COPD and 51% had respiratory symptoms.
Conclusion: Proactive screening of smokers with spirometry can increase COPD identification. We are planning to roll this project out using the new NICE COPD 2010 guidelines, which require post bronchodilator spirometry values.
This project was funded by Astra Zenica pharmaceutical company.

P3769
Effectiveness of supervised training program about spirometry in primary care
Cristina Represas-Represas, Virginia Leiro-Fernández, Maribel Botana-Rial, Ana Isabel González-Silva, Alberto Fernández-Villar. *Pneumology. Respiratory and Infectious Disease Research Group. Bio-Medical Research Institute of Vigo, University Hospital Complex of Vigo (CHUVI), Vigo, Pontevedra, Spain*

Spirometry is an essential technique for diagnosing respiratory diseases but it is underused at Primary Care (PC) level. Training could help to improve the situation.
Objectives: To analyze the effectiveness of 2 months supervised training program about spirometry performance and interpretation.
Methodology: Interventional study, with measurements before and after, to improve the quality. Target population: doctors and nurses team, of 26 PC centers. Teachers: pulmonologists from our hospital (CHUVI). We designed a structured program showed in figure 1.
To assess the effectiveness of the course, students were evaluated with a test-exam composed of 5 spirometries with 2 questions each one, at three diferents times: before initial training (test 1), at the end of the first working day (test 2), and on the 2nd working day (final test).
Results: Of 74 students, 72 (97.2%) completed training and 90% passed the exam. The mean punctuation in the different tests were: 4.1 ± 1.9 in test 1, 7.5 ± 1.6 in test 2 and 8.9 ± 1.3 in the final test ($p<0.0001$). The number of supervised spirometries performed and interpreted correctly was 370 of 521 (71%) during the first month and 562 of 619 (91%) during the second month ($p<0.0001$).

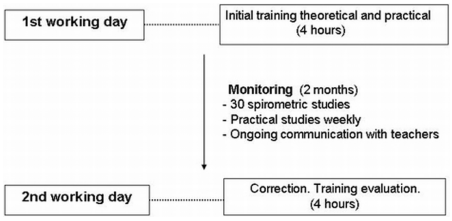


Figure 1

Conclusions: An spirometry training program based on theoretical and practical workshops, and practical monitoring improves significantly the competence of PC professionals in the performance and interpretation of this technique.

P3770

Agreement between asthma control perception by patients, by physicians and according to guidelines

M.C. Vennera[1], C. Picado[1], L. Herraez[2], J. Galera[2], J. Casafont[2], on behalf of the CONTROL Study Group. *[1]Pneumology and Respiratory Allergy, Hospital Clínic, Barcelona, Spain; [2]Health Outcomes Research, Novartis Farmacéutica, Barcelona, Spain*

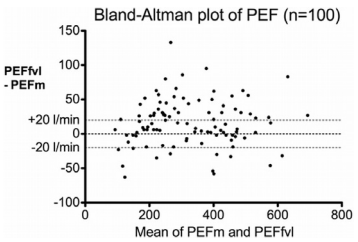
Background: Despite the clinical interest and current treatments availability, more than a half of Spanish asthma patients fail to control their disease adequately.
Objective: To assess the degree of correlation between the asthma control perceptions by patients and by physicians.
Methods: Observational, cross-sectional and multicenter study that included patients with severe persistent asthma according to Spanish Guidelines for Asthma Management (GEMA). We calculated the degree of agreement between asthma control perceptions by patients, physicians and according to the GEMA.
Results: A total of 343 patients were included. Mean age (SD) was 48.1 (14.7) years and 1/3 were women. The assessment of the degree of asthma control according to GEMA criteria showed that only 10.2% of patients were controlled, 27.7% partially controlled and 62.1% poorly controlled. The correlation between patient's asthma control perception and according to GEMA criteria showed that 35.7% of patients that viewed themselves under control did not achieve GEMA criteria ($p<0.0001$). The agreement between physicians and GEMA criteria showed that 16.6% of asthma patients who reached medical criteria for control, were not under the GEMA control assumptions ($p<0.0001$). Concordance between medical criteria and patient's perception showed that only 57.9% of cases coincided for the control of asthma, while 40.7% of patients who felt controlled were not under physician opinion ($p<0.0001$).
Conclusions: Both patients and physicians overestimate asthma control, with higher control perception in patients.

P3771

Peak flow is not strictly comparable by gauge and spirometry in many patients

Clare Bradley[1], Hannah Tighe[2], Philip Ind[2]. *[1]St Mary's Hospital, Praed St, London, United Kingdom; [2]Imperial College School of Medicine, Hammersmith Hospital, London, United Kingdom*

Peak Flow, usually measured by meter or gauge (PEFm), is commonly used in monitoring airway calibre in asthma and in COPD. Spirometry is increasingly used in COPD assessment in primary care. Most spirometers generate flow-volume curves yielding peak flow measurements (PEFfvl) which may also be used in monitoring patients. It is unclear how closely PEFm and PEFfvl relate in practice.
We determined PEFfvl (from 2 reproducible loops) using the Zan 100 spirometer and PEFm (best of 3 blows by Wright gauge) in 100 consecutive patients undergoing routine lung function.
General agreement between the 2 measures was good: mean PEFfvl was 333 (SD 139), mean PEFm was 317 (SD 137) L/min. However, PEFm was 20 L/min or more lower in 45 patients and 20 L/min or more higher in 12 patients than PEFfvl. The 2 measures differed by 40 L/min in 27 patients.



Simple visual inspection of F-V loops did not predict the difference between the 2 measurements. Larger differences did not occur in asthma or COPD patients than in others or correlate with airflow obstruction.
In this small study the order of measurements was not randomised and the population may not be generalisable but clinically significant differences were apparent in a large proportion of patients using the different techniques. PEF measurements in an individual should preferably be compared using the same equipment. Lung function laboratories should determine both PEFm and PEFfvl.

P3772

Composite asthma control measures in real-life studies

David Price[1,2], Richard Martin[3], Gene Colice[4], Paul Dorinsky[5], Alison Chisholm[2], Julie von Ziegenweidt[2], Annie Burden[2], Peter Polos[6], Liz Hillyer[2], Nicolas Roche[7]. *[1]Centre of Academic Primary Care, University of Aberdeen, Aberdeen, United Kingdom; [2]Observational Research, Research in Real Life, Norwich, United Kingdom; [3]National Jewish Health, Denver, CO, United States; [4]Washington Hospital Center and George Washington University School of Medicine, Washington, Washington, DC, United States; [5]Global Respiratory R&D, Teva Pharmaceuticals, Horsham, PA, United States; [6]i3 Global, Basking Ridge, NJ, United States; [7]Hôtel-Dieu, University of Paris Descartes, Paris, France*

Background: Using real-life databases to compare asthma treatments requires composite proxies for asthma control.
Methods: Observational study using the US Ingenix Normative Healthcare Database to compare asthma outcomes between matched patients either initiating or increasing inhaled corticosteroid (ICS) therapy as fluticasone propionate (FP) or extra-fine hydrofluoroalkane beclomethasone dipropionate (EF HFA-BDP). Literature-based *a priori*-defined composites were developed and evaluated over 1yr, including: markers of emergency healthcare use for asthma and lower respiratory tract infections; use of oral steroids and reliever therapy; increased maintenance therapy, and controller-reliever ratio. Medication possession ratio (MPR) was calculated to assess adherence.
Results:

	Initiating ICS		Increasing ICS	
	EF HFA-BDP (n=4224)	FP (n=12,672)	EF HFA-BDP (n=320)	FP (n=640)
Achieved asthma control, n (%)	2394 (56.7)	7221 (57.0)	171 (53.4)	348 (54.4)
Achieved asthma control+SABA, n (%)	1767 (41.8)	4460 (35.2)	136 (42.5)	271 (42.3)
No severe exacerbations, n (%)	3012 (71.3)	8942 (70.6)	222 (69.4)	445 (69.5)
Achieved asthma control + no increase in therapy, n (%)	2044 (48.4)	6229 (49.2)	168 (52.5)	322 (50.3)
Controller–reliever ratio ≥0.5, n (%)	3133 (74.2)	8459 (66.8)*	271 (84.7)	533 (83.3)
MPR ≥80%, n (%)	170 (4.0)	593 (4.7)	36 (11.3)	72 (11.3)
Outcome year ICS dose, µg/d [Median (IQR)]	44 (22–88)	72 (36–145)*	94 (44–175)	145 (72–266)*

*$p \leq 0.05$.

Conclusion: While the proportion of patients achieving asthma control varies according to the considered criterion, data consistently show similar or better outcomes for EF HFA-BDP despite a significantly lower ICS daily dose and similar MPR. Using multiple composite measures to evaluate comparative effectiveness reinforces confidence in study findings.

P3773

Pharmacists and knowledge of asthma: Survey of 120 pharmacists, comparison between 1999 and 2009

Marion Menier-Spitz[1], Hassina Lefevre[2], Pauline Rebotier[1], Christiane Heitz[3], Anne-Sophie Bihler[1], Frederic de Blay[1]. *[1]Allergy Division Chest Disease, University Hospital of Strasbourg, Strasbourg, France; [2]Department of Medical Information, University Hospital of Strasbourg, Strasbourg, France; [3]Faculty of Pharmacy, University of Strasbourg, Strasbourg, France*

Asthma morbidity has changed over the ten last years, we speculated that pharmacist knowledge concerning the treatment of asthma has also changed over years.
Aim: To compare pharmacists' knowledge in asthma treatment in urban and rural areas between 1999 and 2009.
Material and methods: 120 pharmacists (60 licensed and 60 assistants) from the Bas-Rhin (North part of Alsace) were randomly selected on two occasions. The 2009's pharmacists were all different from the 1999's ones.
86 of them accepted to answer the same standardized questionnaire in 1999 and in 2009. Pharmacist's populations in 1999 and in 2009 were identical (age, gender, pharmacy location (urban vs rural), ...)
Emergency interventions for an asthma attack were performed by 10.6% of them in 1999 and 8.6% in 2009 (NS). 33% of them advised patients to go back home after intervention in 1999 and 57% in 2009.
They gave advice to obtain a better compliance (96% the two years) and explained how to use an inhaler (96% in 1999 and 94% in 2009) in the same proportion. Ten years later, 98% volontarily demonstrated use of different inhalers instead of 64% in 1999 (p=10-4) (MDI, Autohaler, Turbuhaler) 14 and 9% knew how to use an MDI properly, 5 and 4% an Autohaler and 31 and 24% a Turbuhaler in 1999 and 2009, respectively. (I don't understand this point well).
Time spend per prescription was the same in the two years (< 15min).

Conclusion: During the last 10 years, pharmacists knowledge about asthma has not increased significantly. On the other hand they were more prone to use an inhaler for a demonstration. Training pharmacists about asthma seems still necessary.

P3774
Know it, check it, treat it – COPD consumer mobilisation campaign. A pilot study
June Roberts[1], Helena Cullen[2], Nawar Diar Bakerly[1]. *[1]Respiratory Medicine, Salford Royal NHS Foundation Trust, [2]Adult Services, Salford Community Health, Salford, Greater Manchester, United Kingdom*

Background: COPD is under diagnosed and awareness amongst the public is low.
Aims: To develop and pilot a consumer mobilisation campaign* to increase public awareness of COPD and encourage the undiagnosed local population to recognise symptoms and present for further assessment.
Methods: Insights into attitudes to COPD and motivators/barriers to health messages were collected through focus groups with local clinicians and members of the public. Key messages were communicated using a variety of media over a 3-month period. Pre and post campaign awareness amongst clinicians and the public was measured using market research techniques.
Results: Key insights from focus groups:
Don't focus on smoking - "We don't like anti-smoking messages"
Get people to join the dots between their symptoms and COPD - "It's only just dawned on me that my cough is not normal"
Make the message personal - "COPD may mean you become dependent on others" was a message that shocked people and would more likely prompt action
Make statistics real – "1 in 7" people registered more with the target audience than "3.7 million people have the disease"
Of 75 people surveyed post launch:
Prompted awareness of COPD increased by 24% and its symptoms by 9%
Of 25 general practices surveyed post launch:
Awareness of the campaign amongst clinicians was high (80% unprompted)
There was an average increase in diagnosis rates of 2 patients per practice prompted by the campaign (range 0-15)
Conclusion: COPD consumer mobilisation campaigns can increase public awareness and diagnosis rates. Further work is needed.
*Campaign developed and funded by Boehringer Ingelheim Ltd and Pfizer Ltd in collaboration with NHS Salford

P3775
Knowledge of pulse oximetry among general practitioners in south Australia
Quirine Huijgen[1], Tanja Effing[2], Kerry Hancock[3], Tjard Schermer[4], Alan Crockett[5]. *[1]Dept. of Respiratory Medicine, University of Utrecht, Utrecht, Netherlands; [2]Dept. of Respiratory Medicine, Flinders Medical Centre & Repatriation General Hospital, Adelaide, Australia; [3]General Practice, Chandlers Hill Surgery South Australia, Adelaide, Australia; [4]Dept. of General Practice/Family Medicine, University Medical Center St. Radboud, Nijmegen, Netherlands; [5]Discipline of General Practice, School of Population Health & Clinical Practice, University of Adelaide, Adelaide, Australia*

Introduction: Research in different hospital settings has shown that clinicians' understanding of pulse oximetry is limited. No data are available about knowledge among general practitioners (GPs).
Aims and objectives: The aim of our study was to gain insight into the current knowledge, interpretative skills of GPs with regard to pulse oximetry.
Methods: A cross-sectional observational survey was performed. Overall knowledge of GPs regarding pulse oximetry was evaluated with help of a newly developed questionnaire (based on previously reported surveys). Secondary, the influence of saturation values on GP decision making was explored. GPs were asked to complete the questionnaire: 1) via a newsletter (containing a digital link to the questionnaire) that was emailed to GP networks in and around Adelaide (Australia); 2) in person during a workshop and conference.
Results: 42 GPs and 4 GP registrars participated. From the participants, 60.9% owned a pulse oximeter and 76.1% had experience with pulse oximetry. 58.7% believed they had not received adequate training in pulse oximetry. The overall mean score was 35.0% (SD 19.1%). A significant negative correlation between years of experience in general practice and knowledge was found ($p<0.05$). GPs with pulse oximetry experience scored significantly higher ($p<0.05$). Knowledge of the saturation value did not seem to influence the management plans of the GPs.
Conclusions: Knowledge of pulse oximetry seems poor among GPs and GP registrars. Good training is essential to prevent errors in the interpretation of pulse oximetry readings, which may have the potential of causing harm to patients.

P3776
Reliability of the FSI-10 questionnaire for the assessment of the usability of inhalers in Greek patients
Nikolaos Grekas[1], Katerina Athanassiou[1], Katerina Papataxiarchou[1], Ourania Porichi[1], Miguel Perpina-Tordera[2]. *[1]Clinical Research Department, Elpen Pharmaceutical Co Inc, Pikermi, Greece; [2]Servicio de Neumologia, Hospital Universitario la Fe, Valencia, Spain*

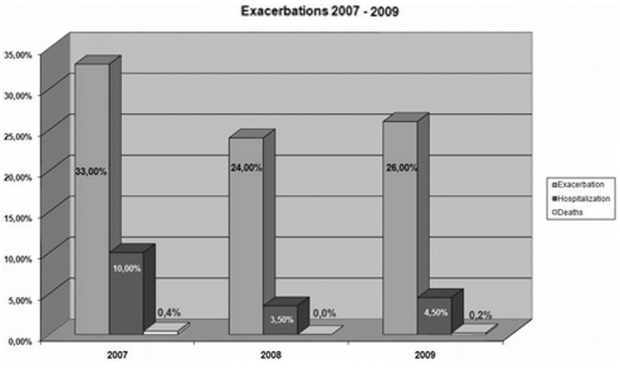
Introduction: The Feeling of Satisfaction with Inhaler (FSI-10) is a self-completed questionnaire designed to assess the patient opinions regarding the satisfaction and usability of the inhalers irrespectively of the drug used. It consists of 10 questions, each with 5 possible responses on a 5-point Likert scale scored from 5 to 1, respectively.
Objectives: The aim of this study was to validate the Greek version of this questionnaire.
Methods: We performed an open, non-interventional, multicentre, parallel clinical study. The final group consisted of 422 subjects (192 females) aged between 16 and 87 years, who suffered from asthma or COPD and who regularly received their treatments exclusively via the inhaled route. All had already achieved mastery of their devices and they completed in full the Greek FSI-10 which had been translated by two specialists and back translated by another specialist. Statistical analysis was done by using SPSS version 17.0.
Results: The Greek version of the FSI-10 was easily understood and completed by the participants. Spearman's rho correlation coefficients showed good relationships between questions and a positive contribution of the score of each question to the total score. No redundancy was observed. Cronbach test for the questionnaire as a whole showed a very good internal consistency (Cronbach's alpha=0.923). Lower α values (0.907 - 0.922) were calculated, if any one of the items was consecutively deleted.
Conclusions: The reliability of the Greek version of the FSI-10 questionnaire was proven for the first time by this study. The instrument fits its puspose very well and can be used in multicentre clinical trials conducted in Greece.

P3777
Lung function disorders screening among the smoking patients in primary health care
Elena Andreeva, Irina Kudryavtseva, Vladimir Popov. *Family Medicine Department, Northern State Medical University, Arkhangelsk, Russian Federation*

Background: Smoking is a major risk factor for chronic obstructive pulmonary disease (COPD). Prevalence of smoking in Russian Federation is one of the highest in the world: 39.1% of the adult population. The airflow limitation is not necessarily accompanied by certain symptoms and therefore some patients do not always seek for medical advice.
Aim: Early detection of airflow limitation and identification of risk factors for COPD among smoking patients in general practice in Northwest Russia.
Methods: 414 volunteers (smokers and ex-smokers) were invited to make the standardized lung function test and fulfilled the questionnaires (including the symptoms and smoking status). COHb% and carbon monoxide (CO) in exhaled air were established by MicroCO analyzer.
Results: Mean age was 42.1±13.6 years, 62.3% of the sample was males, and 89% of subjects were current smokers. The average smoking history was 25 pack-years for males and 14.8 for females. Subgroups of potential (smoking>10 pack-years) and high (>25 pack-years) risk of COPD were defined (68.1% and 30.7%, respectively). The high levels of CO and COHb (>3%) were revealed in 25.5% and 35.9% smokers, respectively. The cough and dyspnoea were the main complains (49.0% and 45.7%, respectively). Obstructive ventilation disorders were identified in 41.1% of subjects. The prevalence of obstruction increased with age and smoking history ($p<0.001$). Reversibility test was performed in 72% of all patients with identified disorders of lung function. COPD was detected in 28 patients (6%).
Conclusions: Early diagnosis of lung function disorders in smoking patients is an opportunity to identify individuals with increased risk of developing COPD.

P3778
The prevelance of respiratory infections in vaccined patients with chronic obstructive pulmonary disease
Dimitra Sereti, Konstantina Sereti, Theodosios Theodosiou, Vasiliki Kyriakopoulou, Maria Petta, Maria Petta. *General Practice, Vardas Health Center, Patras, Achaias, Greece; General Practice, Chalandritsas Health Center, Patras, Achaias, Greece*

Aim: To estimate the prevelance of respiratory infections in immunizationed patients with chronic obstructive pulmonary disease (COPD).



Method: 476 patients with chronic obstructive pulmonary disease were followed up during the years 2007-2009. All patients were over sixty years old and vaccinated against influenza and pneumonaeu. The exacerbations, the hospitalization and the deaths were noted down.
Results: During the year 2007, 157 patients (33%) wend under exacerbation, From those 16 (10%) required hospitalization and 2 deaths were recorded. In 2008, 114 (24%) appeared exacerbation, 4 (3,5%) of them required hospitalization. No death was recorded. During 2009, 124 patients (26%) of the total exacerdationed, 6 (4,5%) of them needed to hospitalize and 1 death was recorded. Totally the percentage of deaths reached only a 0.6%.
Conclusions: The mortality in vaccinated against influenza and pneumonaeu patients seems to be negligible. However, the quality of life seems to be affected because of exacerbations and hospitalization which discomfort a significant percentage of COPD patients.

P3779
Evaluation of lung function on asthma patients cared by primary care physicians
Carlos Almonacid Sanchez[1], Jose Luis Izquierdo Alonso[1], Pilar De Lucas Ramos[2], Jose Miguel Rodriguez Gonzalez-Moro[2], Jose Gallardo Carrasco[1], A. Martin Centeno[3]. *[1]Pulmonary Medicine, Guadalajara University Hospital, Guadalajara, Spain; [2]Pulmonary Department, Gregorio Marañon Hospital, Madrid, Spain; [3]Medical Department, Pfizer Spain, Madrid, Spain*

Aim: To know the characteristics of patients diagnosed as asthma in primary care.
Methodology: Multicenter epidemiological, transversal and observational study performed in patients diagnosed as asthma in primary care and treated with an inhaled drug (bronchodilator and/or inhaled corticosteroid). All patients signed informed consent.
Results: We included 4,188 patients diagnosed with asthma, of which 2450 (60.2%) were women. The mean age was 50.5 years (SD 17). 1486 patients (36.6%) had a normal body mass index according to WHO classification. 921 (22.1%) were former smokers and 818 (19.6%) were current smokers. 1663 (41.4%) were sensitized to at least one allergen. 2582 (63%) of patients had rhinitis and 1,214 (30.3%) had a previous history of atopy. 1,960 (49.3%) had a family history of asthma. Only 1369 (34.9%) did not complain of dyspnea (MRC = 0). 2550 (60.9%) were treated with a combination of an inhaled corticosteroid and a long acting beta-2 agonist. Only 855 (20.6%) of patients who were diagnosed with asthma had a spirometry at any time prior to inclusion in the study and only 252 (6%) had a bronchodilator test. By using the SF-12 questionnaire, the health status of 1556 (37.3%) was defined as fair or poor.
Conclusions: It is important to continue working to get a proper diagnosis and better control of asthma patients in primary care. To improve the diagnosis and disease monitoring we must encourage about the use of spirometry in primary care.