A multivariate linear analysis revealed IAH having a linear relationship with FEV1%pred (R= 0.826) independent from age, body mass index, height, and V_T. A Receiver Operating Characteristics curve analysis showed values of the area under the curve greater than 0.9 for IAH and IVE at all stage levels, with a sensitivity = specificity value greater than 80%. We conclude that IAH and IVE can be used, when spirometry cannot be reliably performed, as alternative parameters to evaluate the degree of functional involvement in COPD patients.
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P463
The effect of training on the quality of outpatient spirometry in a tertiary care hospital in the United Kingdom
Alison Boland, M. Teoh, Paul K. Plant. *Department of Respiratory Medicine, St. James's University Hospital, Leeds, West Yorkshire, United Kingdom*

Outpatient spirometry in Leeds is routinely performed by nurses rather than respiratory technicians. A previous audit showed that the majority of spirometry traces were suboptimal. This was re-audited after nurses underwent informal (by an experienced colleague) or formal training (one-day spirometry course). 211 consecutive spirometry traces were collected from three respiratory clinics and scored by a single chest physician using American Thoracic Society criteria for acceptability and reproducibility. Training provided was assessed by a questionnaire. Following training the acceptability and reproducibility of the FEV1 improved from 42.4% (CI 35-50) to 74.6% (CI 69-80) and the FVC from 19% (CI 13-25) to 51.7% (CI 45-58).The greatest improvement was seen at clinic C where formal training was provided. Smaller improvements were seen at clinics A and B where only informal training was provided. Non-acceptability of FVC measurements was largely due to failure to achieve a 6 second plateau on the volume-time curve. The majority of FEV1 values were valid.
A quality improvement programme through formal training improves the acceptability and reproducibility of outpatient spirometry traces when performed by non-respiratory technicians.

P464
Are deceiving smokers revealed by use of CO monitors as a validation tool?
Lieke Christenhusz[1], Frans de Jongh[2], Paul van der Valk[2], Marcel Pieterse[1], Erwin Seydel[1], Job van der Palen[2]. *[1]Communication Studies, University of Twente, Enschede, The Netherlands; [2]Pulmonary Medicine, Medisch Spectrum Twente, Enschede, The Netherlands*

Objectives: Validating three different CO monitors to verify self-reported smoking status in COPD-patients and healthy persons.
Methods: 26 healthy smokers, 25 healthy non-smokers, 25 smoking and 25 former smoking stable COPD patients were included based on self-reported smoking status, checked by salivary cotinine (N=101). Non-smokers were measured once and smokers twice: at the start, following a 12-hour period of abstinence, and again one hour after smoking one cigarette.
Results: The prescribed 9 ppm cut-off point of the Breath CO® generates 68% sensitivity for COPD patients and 42% for healthy persons. Using a 10 ppm prescribed cut-off point the Smokelyzer® scores 56% versus 23%. Both monitors generate 100% specificity in both groups. The cut-off point for the Micro CO meter® (6 ppm), generates 88% sensitivity and 92% specificity for COPD patients, and for healthy persons 92% and 88%, respectively. When cut-off points of both other monitors are adjusted to 6 ppm, they are comparable. The optimal cut-off point depends upon the goal of the test but in general 3 ppm seems to reach 100% sensitivity which implies that all smokers are detected.
Conclusions: If the prescribed cut-off points are adjusted properly these three CO monitors are valid for determining the smoking status in both populations. In this way it is an attractive, cheap, non-invasive, direct feedback-providing tool, valuable in smoking cessation studies.

P465
Renal function reserve in patients with mild and moderate chronic obstructive pulmonary disease
Cheng-Yu Chen[1,2], Kuang-Yao Yang[1,3], Peury-Perng Perng[1,4], Chen-Hsen Lee[2,4]. *[1]Chest Department, Taipei Veterans General Hospital, Taipei, Taiwan; [2]Institute of Emergency and Critical Medicine, National Yang-Ming University, Taipei, Taiwan; [3]Institute of Clinical Medicine, National Yang-Ming University, Taipei, Taiwan; [4]School of Medicine, National Yang-Ming University, Taipei, Taiwan*

Background: To increase knowledge of renal hemodynamics in COPD, we investigate the change of renal hemodynamics after a protein load in COPD patients.
Methods: Fourteen COPD patients at stable clinical condition were classified in stage I (7) and stage II (7) according to The Global Initiative for Chronic Obstructive Lung Disease (GOLD). Doppler ultrasonography with a 3.7 MHz probe identified the interlobar arteries from right translumbar route at sitting position. The resistive index (RI) was recorded at fasting and after feeding with high protein liquid diet at 30, 60, and 90 minutes thereafter.
Results: The baseline RI was not different in the two groups. After protein loading, RI was elevated in both groups but only moderate group reach significant change at 30 and 60 minutes (Table).

Table. Ultrasonographic Finding after Protein Loading

	Mild group	Moderate group
Baseline RI	0.469 (0.394-0.544)	0.443 (0.375-0.510)
30 min RI	0.522 (0.467-0.578)	0.492 (0.419-0.564)*
60 min RI	0.513 (0.458-0.578)	0.499 (0.461-0.538)*
90 min RI	0.495 (0.434-0.555)	0.469 (0.423-0.516)

Conclusion: The renal reserve decrease was noted even in mild COPD, it is correlated the severity of obstruction.

P466
Relationship betweem bode index and quality of life in patients with chronic obstructive pulmonary disease
Marcia M. Faganello, Fernanda F. Sanchez, Victor Z. Dourado, Suzana E. Tanni, Simone A. Vale, Nilva R. Pelegrino, Carlos R. Padovani, Irma Godoy. *Pulmonary Division, Botucatu Medical School, Botucatu, Sao Paulo, Brazil*

Aim: To evaluate the relationships between BODE index and quality of life scores obtained by Saint George's Respiratory Questionnaire (SGRQ) and Airways Questionnaire 20 (AQ20), baseline dyspnea index (BDI) score and Charlson comorbidity index in chronic obstructive pulmonary disease (COPD) patients.
Patients and Methods: Thirty-five patients with COPD were submitted to evaluation of pulmonary function, body mass index (BMI), baseline dyspnea by Medical Research Council (MRC), 6-min walk test (6MWT) in order to calculate the BODE index. In addition, Charlson index, BDI, SGRQ and AQ20 scores were also obtained.
Results: Correlation analysis showed that BODE score presented significative positive correlations with Charlson index ($r = 0.37$; $p < 0.05$), AQ20 escore ($r = 0.77$; $p < 0.001$), with all SGRQ domains and total scores: symptom ($r = 0,65$; $p < 0,001$), activity ($r = 0,80$; $p < 0,001$), impact ($r = 0,72$; $p < 0,001$) and total ($r = 0.78$; $p < 0.001$) and significative negative correlations with BDI ($r = -0.74$; $p < 0.001$).
Conclusion: In additon to survival prediction previously described, these data showed that the BODE index correlates with the comorbidity index, with other than MRC dyspneia measurements and also with markers of quality of life.
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P467
Health status burden of COPD - comparison across different countries and treatment settings
Y. Punekar[1], R. Rodriguez-Roisin[2], M. Sculpher[3], P. Jones[4], M. Spencer[1]. *[1]GHO, GSK, United Kingdom; [2]Universitat de Barcelona, Spain; [3]Center of Health Economics, University of York, United Kingdom; [4]Dept of Physiological Medicine, St. Georges Hospital, United Kingdom*

Aim: To compare impact of COPD on health status of patients presenting for treatment in different countries and treatment settings.
Methods: A cross-sectional survey of 3,583 patients and their physicians in primary (PC) and speciality (SC) care was conducted in five European countries and the USA. Information was collected on clinical characteristics, exacerbations and health status estimated using EQ-5D index.
Results: The mean EQ-5D index (EIM) was comparable in all countries in PC (Range:0.69-0.82) and SC (Range:0.7-0.85) except Italy (PCEIM=0.79, SCEIM =0.73, p=0.001). About 5% patients in both settings in four European countries except UK had health status valued worse than death. Nearly half the patients in each country indicated some impairment in health status on all domains of the EQ-5D except self-care. Patients suffering from severe breathlessness (EIM=0.24), experiencing two or more exacerbations per year (EIM=0.59), categorised as severe according GOLD criteria (EIM=0.64), and experiencing daytime and night time symptoms (EIM=0.58) had significantly lower health status ($p<0.001$) in most of the countries.
Conclusion: COPD has a significant burden on patients. Patients with severe symptoms and frequent exacerbations have comparable health status in PC and SC in different countries in spite of variations in healthcare systems and treatment paradigms.

Abstract P463 – Table 1

	Clinic A		Clinic B		Clinic C	
Training	Before	After	Before	After	Before	After
Satisfactory FEV1 (95% CI)	65% (50-80)	76% (65-87)	42% (31-53)	70% (61-79)	27% (15-39)	82% (71-93)
Satisfactory FVC (95% CI)	29% (14-44)	39% (27-51)	23% (14-32)	50% (40-60)	6% (0-13)	72% (60-84)