

## EDITORIAL

## Spirometry in primary care

See linked article by Levy *et al.*,  
September issue 2009,18(3):130-47

**\*Martin R Miller<sup>a</sup>**

<sup>a</sup> Consultant Respiratory Physician,  
Department of Medicine, University  
Hospital Birmingham NHS Trust,  
Birmingham, UK

**\*Correspondence:**

Dr Martin Miller,  
Department of Medicine,  
University Hospital Birmingham NHS  
Trust,  
Selly Oak Hospital,  
Birmingham,  
B29 6JD,  
UK

Tel: +44 (0)121 627 8479

Fax: +44 (0)121 627 8292

E-mail: Martin.Miller@uhb.nhs.uk

6th November 2009

Chronic obstructive pulmonary disease (COPD) is the lung disease currently under scrutiny, and a National Strategy (formerly National Service Framework) for COPD is due to be published shortly. The criteria for diagnosing COPD have changed over the years, and the diagnostic criteria applied will affect the classification and observed prevalence of COPD.<sup>1,2</sup> It is clear that central to the diagnosis of COPD is the need to identify poorly reversible airflow obstruction – and this requires accurate spirometry to be performed. Much of the perceived unmet need in COPD management will be based in primary care, and when the criteria for diagnosis have been finalised we will need to obtain acceptable spirometry data for large numbers of people in a primary care setting.

The spirometry Standards Document by Levy *et al.*, published in the most recent September issue of this journal,<sup>3</sup> has set out how best to perform spirometry in primary care. This is a timely and effective contribution to ensuring that we are best placed to meet the future needs of patients with COPD. The paper starts with a broad assessment of the main issues involved in the task of performing spirometry in primary care, and proceeds to advise on types of equipment, indications for undertaking spirometry, how to undertake the tests, how to interpret the results, and finally details on quality control and training. This is an ambitious paper that meets the needs of clinicians performing spirometry in primary care.

When advising about equipment the authors clearly cannot name preferred devices, but the emphasis is now towards flow measuring devices with a 'spirometry station' set-up. Transducer technology has improved considerably over recent years and the stability of flow transducers now makes them acceptable for our purpose. The move for a system that allows data accumulation is a sensible one, since a permanent record that can be easily referenced if the tests are repeated is important when documenting how this disease runs over time. A key aspect when using flow transducers is the need for some of these to be calibrated on a regular basis. Details of all these calibrations need to be documented and retained for future reference. Some flow heads state that they don't need calibration, but regular checks on their performance by performing calibration checks<sup>4</sup> are essential to be certain the instruments do not vary in their response over time. In essence a calibration check is a recording with a 3 litre syringe delivering a profile with different flows and documenting the volume recorded to be sure it is within accepted limits<sup>4</sup> irrespective of the flow profile.

The authors emphasise that symptoms are key in deciding whether or not spirometry is indicated. It is helpful to see in the Levy paper<sup>3</sup> a table of relative contraindications for spirometry, as this aspect is often forgotten in other spirometry standards publications. In the context of COPD, middle aged smokers are of interest and it is still not clear if it is sensible to be testing subjects without symptoms. Currently there is no indication to be screening asymptomatic subjects. However, if screening were undertaken using the conventional lower limit of normal – i.e. the lower 90% confidence limit – then 5% of a normal population would be detected as abnormal when in fact they were normal (false positives). Such a study might suggest that the prevalence of COPD was 5% in the normal population, and this false positive effect needs to be taken into account when interpreting studies quoting the prevalence of COPD in the general population. When testing asymptomatic subjects it would be better to use a lower 95% confidence limit to define abnormal results, thus reducing the false positive rate to 2.5%.

The section in the paper<sup>3</sup> on how to perform the spirometry test is brief and to the point

