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# LETTER TO THE EDITOR

# Office spirometry: to refer or not to refer?

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## Dear Sir,

In the December issue of your Journal, Tuomisto *et al*.[1] reported on the quality of primary care spirometry in an Asthma Programme in Finland. After applying a set of five quality criteria (derived from the 1994 ATS lung function guideline)[2] on 868 single flow-volume curves that accompanied referral letters to pulmonary units, the authors concluded that the quality of spirometry was good for 79% of the curves. Similar to what is known from previous studies, obtaining full exhalation was the most critical point of the primary care spirometry tests. The authors also concluded that adequate spirometry report sheets from primary care physicians may obviate the need for further (or repetitive) spirometry tests in secondary care after referral.

At first glance this paper seems to provide promising news for primary care. However, there is also much that the authors do not report. For instance, the paper does not report on the reproducibility of the forced expiratory volume in 1 second ($FEV_1$) and forced vital capacity (FVC) measurements, or even on the numbers of forced manoeuvres performed within test sessions. The clinical information about the patient's co-operation was only available for 32% of all tests. Both of these aspects are pivotal in assessing the quality of spirometry test results. From a methodological point of view more details are needed to be able to judge the merits of the findings reported by these authors: the number of referring primary care physicians (two, ten, or fifty?), possible selection bias of the reported sheets that took place, and the motivation behind the authors' choice to (double-)count pre- and post-bronchodilator tests from one and the same patient as two separate tests in the analyses. These points are all likely to have shifted the results to a higher rate of test adequacy. Moreover, the fact that the authors used a subset of the full ATS criteria set[2] hampers comparison with previous studies.

We recently reported the quality of 1271 routine spirometric tests performed in 15 Dutch general practices in the period 2003-2005 [*Br J Gen Pract* 2009 (in press)]. In our sample, 96% of all tests consisted of two or more manoeuvres. The reproducibility of $FEV_1$ and FVC was < 5% and < 200 ml for 85% and 82% of the tests, respectively. In agreement with the findings by Tuomisto *et al*.[1] about 60% of the tests met the end-of test criteria, but overall only 39% of the tests met the full set of 1994 ATS acceptability and reproducibility criteria. This is almost exactly half the rate of adequate tests reported by Tuomisto and colleagues.[1]

Although it is currently unclear as to what is the true impact of inadequate spirometry tests on patient care, to fulfil the promise of primary care spirometry, accurate and reproducible tests are needed. The results from the study by Tuomisto *et al*.[1] and previous work from other authors[3] are important steps which give insight into the quality of primary care spirometry outside research settings. Improving quality assurance could be organised by the following (combination of) options: continuous training and refresher courses; periodic outreach visit by lung function technicians; periodic feedback on test quality based on reported sheets; or incorporation of spirometry quality indicators in practice accreditation.[4] Dependent on the health care setting, delegating performance of spirometry to a trained nurse who visits practices periodically to perform testing may be an interesting alternative.[5]

We believe that only with such co-ordinated efforts can spirometry performance and interpretation in primary care be enhanced structurally and the number of (repetitive)