spirometry tests in referrals reduced. Apart from this, addressing the issue of the actual consequences of inadequate spirometry tests in general practice in terms of diagnoses, referrals, and management, warrants further attention by health care researchers.

Conflict of interest declaration

No conflicts of interest.

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Authors' reply

We thank PJP Poels and TR Schermer for their interest in our study.¹ They emphasise important aspects concerning spirometry quality assessment.

In Figure 2 in our article the origin of the study spirometries is shown (please note the Corrigendum on pg 184; the reference number in the first box of this Figure should be 14). First we scrutinised all referral letters during 2001 to three pulmonary units with a total population coverage of 500 000 inhabitants served by 33 public care health centres. Asthma-related referrals were selected according to the predetermined inclusion criteria.² We gathered 1289 asthma-related referral letters sent by a total of 431 different physicians. Most of these referrals (70%) were sent from the public primary health care centres. In 48% (n=615) of the referral letters, copies of spirometry curves were attached. In total 126 curves were excluded, most of which were report sheets without the space for the additional clinical information. The assessment of clinical information was one aspect of the study. Finally, 489 spirometry curves were assessed; 87% of these were sent from the public health care centres and 13% from private physicians. Some of the referral letters included more than one spirometry report sheet, and if so, we selected the latest one. This might have affected the results. In the three hospital regions of the study, the local pulmonary units have been active in implementing the national asthma and COPD guidelines since 1994. This implementation process included spirometry training. The results of the study might have been somewhat different in other regions, but we think other

significant biases unlikely.

In contrast to previous studies, the aim of our study was to define the quality of the referred primary care spirometries by visual inspection of the curves, and the quantity of clinical information received from the spirometry report sheets. The five quality criteria selected from the ATS lung function guidelines made it possible to assess visually, and fairly reliably, the success of the manoeuvre. We decided to assess the quality of both pre- and post-bronchodilatation curves as different curves; however, this did not change the results.

The repeated manoeuvre curves were available only with few spirometry report sheets. The Finnish national spirometry guideline was first published in 1995 and it has been updated nine times. The guideline recommends performing 4-6 manoeuvres with reproducibility such that the FEV₁ measurements vary by 4% or less.³ In our study, these pivotal quality criteria relating to spirometry performance, as well as calibration data, were missing – which were important limitations of our study. This we have discussed in our paper. Comments regarding patient co-operation and data on the time of taking the last respiratory medication are important for clinical interpretation; poor results concerning this crucial information was one important finding in our study.

Visual viewing of the curve and the information given on the report sheet is what the physician has when he starts to interpret the spirometry tracing. We have demonstrated one practical method to assess and reassess the quality of primary care spirometries. Different methodology hampers the straightforward comparison with previous studies.

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