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Title: Quality of forced spirometry in primary care practice – Are start of test, end of test and repeatability goals met?

Mats 7018 Arne mats.arne@medsci.uu.se^{1,2} and Hans 7019 Carlsson hans.carlsson@liv.se³. ¹ County Council of Värmland, Primary Care Research Unit, Karlstad, Sweden, SE-65637 ; ² Department of Medical Sciences, Respiratory Medicine and Allergology, Uppsala, Sweden, SE-75185 and ³ Department of Health and Medical Care, County Council of Värmland, Karlstad, Sweden, SE-651 82 .

Body: Optimal performance of spirometry is essential and quality indicators are established in guidelines. In the present study 22 primary care centres in a region in Sweden were investigated. Identical spirometry software has been implemented in all the examined centres. Subjects and Methods: All forced spirometry tests in patients >18 years were collected for a period of two years during the years 2009-2011. Available indicators of performance quality in the spirometry databases were analysed. All indicators complied with the 2005 ATS/ERS recommendations. The indicators were back-extrapolated volume (BEV) <150 mL as start of test criterion, forced expiratory time (FET) ≥6 s as end of test criterion and in addition repeatability of the FEV₁ and FVC (the highest value minus the second highest value) of ≤150 mL. Results: 4 678 spirometry sessions were analysed. Mean age of the patients was 55.3 years (SD 17.5), and 43% were female. Mean BMI was 27.3 kg/m² (SD 6.3), and 24% were smoking. The following results are presented as the percentage of all tests meeting the goals per centre: Start of test; BEV <150 mL, varied from 74% to 95% (mean 86%), end of test; FET ≥6 s, from 33% to 90% (mean 66%). Repeatability of FEV₁ pre bronchodilator (≤150 mL) varied from 73% to 97% (mean 89%), and post bronchodilator from 79% to 98% (mean 91%). Repeatability of FVC pre bronchodilator varied from 53% to 96% (mean 77%) and post bronchodilator from 56% to 91% (mean 78%). Conclusion: Achievement of quality goals varied considerably between the centres. These data will be further analysed and establish an initial status to compare quality of spirometry after a Spirometry Driving License training.