We read with interest the paper by Cotton and associ¬es on early discharge for patients with exacerbations of chronic obstructive pulmonary disease and the accompanying editorial by Killen and Ellis. In both publications the 1991 study of our RespiCare home care programme was referenced, and both asserted that our programme was not cost effective. In fact, our study reached the opposite conclusion—namely, that the RespiCare home care programme was shown to be cost effective.

Actual direct care charges in US dollars were used in our calculations of both pre-programme and on-programme costs. Additionally, administrative costs of operat¬ing RespiCare were added into the on-programme costs. Our findings showed that, while hospitalisation costs substantially decreased during the programme, home care costs increased. However, the decrease in hospital costs more than offset the subsequent increase in home care costs, with a total cost savings of $328 US dollars per patient per month or $3956 per year being realised for those on the RespiCare programme. Although the emphasis of the work was on improvements in clinical outcome, the cost savings were a significant and important aspect of our study. I hope this clarifies any misunderstanding created by the recent articles.

M CAMPBELL HAGGERTY
Pulmonary Nurse Practitioner, Coordinator, RespiCare, Norwalk Hospital, Norwalk, Connecticut 06856, USA

COPD exacerbations

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CFC transition

The editorial by Mark Everard1 provided an interesting viewpoint about inhaler therapy and delivery systems. However, the selective quotation of published trial evidence intro¬duces the potential for bias in his conclusions. This is particularly apparent in the discussion on the ability of patients to use pressured metered dose inhalers (pMDI) correctly. Like many other reviews in this field, selective citation of published papers leads to conclu¬sions that inhaler devices are used more effectively than pMDI.

We have recently completed an NHS sponsored systematic review of the published literature on the clinical and cost effectiveness of inhaler devices. One aspect, a systematic review of the clinical efficacy of pMDIs versus dry powder inhalers (DPIs), found that more than 60% of the 14 clinical studies included in the review cited papers showing poor pMDI technique, including two citing the same paper as Everard by Crompton.2 The British Thoracic Society asthma guidelines3 also stress such problems: “Many patients are unable to use MDIs correctly . . . addition of a spacer device will reduce coordination problems”. Another aspect of the review was inhaler technique. Analysis of studies in which more than one type of inhaler device was assessed (six studies) showed that the “ideal” inhaler technique was found in 59–60% (95% CI 51 to 67) for DPI, in 43% (95% CI 36 to 50) for pMDI alone, and in 58–61% (95% CI 49 to 61) for pMDI with spacer. If the same outcome is considered after a period of inhaler technique teaching (20 studies), then the results are 65% (95% CI 59 to 71) for DPI, 63% (95% CI 60 to 67) for pMDI alone, and 74% (95% CI 53 to 86) for pMDI with spacer. There is marked heterogeneity within these studies and thus selective citation could show any one to be better than another.

We agree that clinical testing of all inhaler devices is critical in informed decision making, but the editorial by Everard may imply that pMDIs are worse than other devices thus encouraging the use of perhaps even less well evaluated devices and at a greater financial cost—an outcome we are sure was not intended by the author.


Obesity and lung function

The paper by Schachter et al4 in the January 2001 issue of Thorax is interesting in that it has a number of unusual and, it is suggested, inexplicable findings that appertain to various indices of ventilatory capacity. With all due deference, we would suggest that there is an explanation for these unusual findings.

Firstly, mild, moderate and severe obesity are all associated with an incremental reduc¬tion in all the forced expiratory volume in one second (FEV1) and the forced vital capacity (FVC).4,4 Secondly, in normal subjects and in those who have pure restrictive impairment, the FVC and FEV1 are within 2–3% of each other when expressed as a percentage of predicted. The FVC cannot be significantly smaller than the FEV1, when expressed as a percentage of predicted except in certain neurological diseases. It is noted that the cri¬terion for acceptance of the spirometric volumes was “two measurements of the FEV1, within 100 ml of each other”, suggesting the FVC was ignored. Table 3 in the paper by Schachter et al shows that, when expressed as a percentage of predicted, the FVC in every instance is less than the FEV1. In most groups there is a relatively small difference except for those who are moderately or severely obese.

The reason for the disparity in the FEV1 and the FVC is that the FVC manoeuvre was likely to be incomplete, especially in those who are overweight. Some normal large men over 74 inches in height take 12–16 seconds to complete their FVC manoeuvre. Unfortunately, these days few physicians spend any time doing routine spirometric testing them¬selves as they rely on their technicians. “Shoe leathers” epidemiologists such as Anne Cochrane and Ian Higgins have been re¬placed by computer addicted statisticians who are thrown into ecstasy by what they can do with a computer, but who fail to realise that their original data may be flawed. We hope that Dr Schachter and her colleagues to review their tracings, we suspect that they would find that at least some of the FVC manoeuvres had been aborted prematurely. E 3% of flow-volume loops are reliable only if the data needs to be borne in mind that it is difficult—and, indeed, usually impossible—to know whether the FVC manoeuvre has been completed.

The other surprise in the study is that the smaller the FVC when expressed as a
percentage of predicted, the higher the FEP, and so on. What is abundantly clear, however, is that, when the FVC manoeuvre is incomplete, then the FEP_{max} is “pushed” further up the steeper portion of the FVC curve so that the FEP_{max} is artefactually increased—that is, the more premature the termination of the FVC, the higher the FEP_{max}.1-4

The findings of wheeze in those who are obese is not surprising, especially in cigarette smokers. When a markedly obese subject exercises on the treadmill wheeze are frequently heard, providing he can continue the test. It is unlikely that our results are due to a systematic underestimation of FVC in the obese groups. In my experience, obese patients who are otherwise healthy do not usually have airway obstruction or a need for prolonged expiration times to complete their FVC manoeuvres. Their spirometric tracings show that the expiration reaches a clear plateau within 2–3 seconds in the same way as is seen in non-obese subjects.

The mean absolute values for FEV1 and FVC, expressed as percentage of predicted, the higher the FEP, and FVC in this group were 3.5 l and 4.0 l, respectively. The mean FEV1/FVC% in all groups was 85.8–87.8%, which is well within the normal range for this age group.

Our results show that most patients with severe obesity have FVC within the normal range, although it is reduced when compared with patients with normal body mass index. We do not have other measurements of lung volumes to confirm further the presence of restriction, but these findings are consistent with those of other studies.2

It is unlikely that we observed were due to technical error or misinterpretation of the spirometric tracings. In overweight individuals with obesity and the fact that some of the FVC measurements have been significantly understated.

We suggest the disparate reduction in the FVC and FEV1 seen in obese subjects has little to do with asthma, but is a direct effect of their obesity and the fact that some of the FVC measurements have been significantly understated.

Not infrequently, health care workers present for employment screening with no BCG scar, a possible or doubtful history of prior BCG vaccination, almost always without documentation. The previous guidelines’ recommendation that “individuals with a negative grade 1 Heat reaction should receive BCG vaccination” and “those without a satisfactory reaction require a further tuberculin test and, if this is negative, a second c prophylaxis”6 is contrary to the 1994 BTS guidance, but the 2000 guidelines are less clear on the issue of re-vaccination. Has the Joint Tuberculosis Committee changed its view?


Reliability of PEF diaries

The paper by Kamps et al reported that peak expiratory flow (PEF) diaries kept by asthmatic children were unreliable. They found that about 25% of readings recorded in an electronic meter were not identical to those written in the diary. The Vitalograph 2110 meter was used for this study with subjects recording the best of three blows on each occasion. However, the 2110 meter does not necessarily record the highest value indicated. Rather, it records the highest value for good quality blows in preference to poor quality blows, even if the poor blow is a higher value. A good quality blow is one in which PEF is achieved between 40 and 290 ms of starting, a poor blow being one in which the time to achieve PEF is outside this window. Thus, the value recorded by an electronic meter is not necessarily the best value as observed by the subject.

Several members of our department staff have reliably kept serial PEF records using the Vitalograph 2110 electronic meter. We found that, even though the observers were “experts”, 6–20% of readings recorded by the electronic meter were di
erent from those noted by the subject. Furthermore, as blows are performed in quick succession, some subjects have reported occasional different PEF values, but also because only good quality PEF manoeuvres are recorded.

Moreover, the large number of missing and invented PEF values (20–40%) were certainly not due to the technical characteristics of the Vitalograph, as these PEF values were simply not blown. We therefore feel that our conclusion that peak flow diaries are unreliable remains valid.

Monitoring of PEF with an electronic PEF meter may not only be preferable for excluding missing and invented PEF values, but also because only good quality PEF manoeuvres are recorded.

Lung cancer survival

We read with great interest the article by Gregor and colleagues on the management and survival of patients with lung cancer in Scotland diagnosed in 1995.1 The results were disappointing, but we congratulate them for their recognition of present conditions and for reporting the scientific analysis. In the 1990s several new chemotherapeutic drugs for lung cancer emerged, although the results of the large phase III studies were disappointing.1 3 It is fair to say that standard treatment for advanced lung cancer, especially for non-small cell lung cancer, is not yet established. Several well designed clinical trials have been reported in first class medical journals, but the prognosis of lung cancer is still poor. Published regimens for selected patients to define new study protocols may be inappropriate for use in clinical practice. Many of our patients are ordinary people who have several underlying illnesses and may be too sick to be enrolled into clinical trials, but they are patients who need treatment which can be applied in common practice. There is no disagreement on the point that the level of evidence obtained from the retrospective study of heterogeneous patients is low; however, we believe that a study with well analysed data of patients who are otherwise not eligible for randomised control trials also has clinical significance and would benefit such patients. We hope that the first class medical journals such as Thorax continue to encourage, not only randomised control trials, but also reporting of retrospective studies to complement the area where strong evidence is unobtainable.

H SATOH
Division of Respiratory Medicine,
Institute of Clinical Medicine,
University of Tsukuba,
Tsukuba City,
Ibaraki, 305-8575, Japan
hirosato@md.tsukuba.ac.jp


NOTICES

Respiratory Medicine

A conference on Respiratory Medicine will be held at the Royal College of Physicians of Edinburgh on 26 October 2001. For further information contact Ms Eileen Strawn, Symposium Coordinator. Telephone 0131 225 7324. Fax 0131 220 4393. Email: e.strawn@rcpe.ac.uk. Website: www.rcpe.ac.uk.

Pharmacology of Asthma

A course on the “Pharmacology of Asthma” organised by Professor Peter Barnes will be held at the Imperial College School of Medicine at the National Heart & Lung Institute in collaboration with the Royal Brompton Hospital, Dovehouse Street, London SW3 6LY, UK on 26–29 November 2001. The course is suitable for physicians or scientists with an interest in the pharmacology and therapeutics of asthma. For further information please contact the Postgraduate Education Centre, Imperial College School of Medicine at the National Heart & Lung Institute, Dovehouse Street, London SW3 6LY. Telephone: 020 7351 8172. Fax: 020 7351 8246. Email: shortcourses.nllh@ic.ac.uk
Lung cancer survival

H SATOH, Y T YAMASHITA and K SEKIZAWA

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