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CORRESPONDENCE

Asthma at-risk registers – can be effective if carefully constructed and correctly implemented

Dear Sirs,

We welcome Stephenson and Shields' timely and important remarks in the recent issue[1] in support of the development and use of asthma at-risk registers. In the same issue, however, Levy raises concerns that some at-risk patients may be overlooked by registers since they do not appear to have severe asthma prior to a fatal or near-fatal attack.[2]

We piloted an asthma at-risk register in 2002[3] following two asthma deaths in our practice. Both patients were middle-aged men on British Thoracic Society (BTS) guideline step 4 treatment who were poorly adherent with all aspects of their asthma management, poor perceivers of airflow obstruction, and in denial of their risk. Patients subsequently identified as at-risk had an alert attached to their electronic records which was used to facilitate appropriate emergency and opportunistic management of their asthma and their associated risk factors. We recognised that identifying patients with severe asthma based solely on their BTS treatment step would be over-inclusive and yet would still risk missing under-treated and some poorly adherent at-risk patients. We therefore included a history of hospital admissions or A&E attendances in the identification process. We also recognised that at-risk patients are a heterogeneous group containing a number of phenotypes including brittle, severe refractory and difficult asthma, all of which needed to be considered in the construction of an at-risk register. Patients with difficult asthma were identified by the additional presence of adverse behavioural or psychosocial factors previously shown to be linked to asthma deaths[4] such as poor adherence, psychiatric co-morbidity and, in the case of children, harmful parental factors. Some of these factors are poorly and inconsistently coded on primary care computer systems, so local clinical intelligence was essential to the accurate compilation of the register. We were surprised to find that only 20% of these at-risk patients were attending secondary care outpatient clinics.[3]

We have continued to monitor the original cohort of 26 at-risk patients and their age/sex-matched control patients with severe asthma since the register was set-up in 2002. Seventeen matched pairs and 21 original at-risk patients remain registered with the practice. On average, two new patients are added to the register each year (practice list size 9,100). Importantly, longitudinal monitoring of our at-risk patients has shown that there is temporal variation in the nature and degree of risk. This is associated with changes in personal circumstances or life events which impact on psychosocial status or other co-morbidities. Consequently, we retain most patients on the register long-term. Observational data suggest that the benefits of the register documented after the first year[3] have been largely sustained – i.e. there continue to be fewer missed appointments, out-of-hours contacts, emergency courses of oral steroids and hospital attendances in the at-risk group since the introduction of the register, and these outcomes remain similar to controls. For example, there were three hospital admissions in the at-risk group in the year prior to the introduction of the register, but there have been only three in total during the subsequent eight years. There have been no further asthma deaths.

This pilot study informed the development of the At-Risk Register in Severe Asthma (ARRISA) study, an Asthma UK-funded cluster-randomised controlled trial which examined the effectiveness and costs of implementing asthma at-risk registers in 29 primary care practices across Norfolk. The results of this study will be published soon.

We agree with Stephenson and Shields' call for the adoption of at-risk asthma registers,[1] provided that the criteria for inclusion are broad and flexible enough to encompass all at-risk phenotypes. These can be updated as new evidence becomes available, such as allergy-related risk factors in children.[5] Practices also need to be clear on how to maximise benefits from this targeted approach. We believe that the emphasis should be on improving routine care for those patients on at-risk registers rather than changing their acute management. This ensures that overall care (both routine and acute) for asthma patients *not* on the register is at least maintained and will likely be improved. We agree with Levy[2] that outcomes will improve if health professionals adhere better to evidence-based guidelines, but importantly we see at-risk registers as part of this guideline-based approach. Evidence is mounting in support of the suggestion in the recent BTS/SIGN guideline[6] for adopting this strategy. Maximum impact could be obtained by including the construction of asthma at-risk registers as a requirement for practices in the UK Quality Outcomes Framework.

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Conflicting standards for diagnostic spirometry within-session repeatability are confusing

Dear Sirs,

Following the publication in this journal of the Standards document 'Diagnostic Spirometry in Primary care: Proposed standards for general practice compliant with American Thoracic Society and European Respiratory Society recommendations' by Levy *et al.* in September 2009,[1] Fletcher & Loveridge[2] from Education for Health felt compelled to challenge the 'soft' limit of 150ml for within-session repeatability included in the document and stated that this should be reduced to 100ml. There was further discussion[3] around this point, and the assumption was made that further research would provide clarification.

Two years on, guidelines and international primary care resources continue to offer conflicting advice as to whether 100ml or 150ml should be the standard for within-session repeatability, and there still appears to be a lack of research in this area.

At the time of Fletcher and Loveridge's original letter,[2] Education for Health undertook an audit of the within-test repeatability of spirometries within the portfolios of 10 recently successful students. These all demonstrated within-test repeatability of between 30-70ml in real patients with respiratory disease.

All Education for Heath spirometry students are assessed (and indeed pass or fail) on the Association for Respiratory Technology and Physiology (ARTP) 100ml standard,[4] with the majority achieving lower than 100ml within-session repeatability in three to four relaxed and forced blows. Respiratory Education UK and the ARTP also assess their own students to this standard, and – as outlined in Brendan Cooper's later *PCRJ* response[5] – all physiologists are expected to achieve this.

Interestingly, the recently published GOLD guidelines (GOLD 2011)[6] have reverted from 150ml to a lower limit of 100ml or 5%, whichever is greater.

In contrast, however, the PCRS-UK has adhered to 150ml as the standard for within-session repeatability in all its materials and advice, including its spirometry audit, in line with the 2009 *PCRJ* publication.[1] As members of the PCRS-UK Education Committee, we are increasingly concerned that conflicting standards are confusing for primary care health professionals. We look forward to further debate on this issue, and also respectfully request the authors of the original paper to provide further clarification on this issue.

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Why do patients not attend community-based pulmonary rehabilitation, and how can attendance be improved?

Dear Sirs,

We read with great interest the paper by Zakrisson *et al*.[1] in the December 2011 issue of the *PCRJ*. We thank and congratulate the authors for their interesting work.

Of particular interest to us is the issue of patients not attending a pulmonary rehabilitation (PR) programme and the reasons behind this. NICE guidelines for COPD[2] recommend pulmonary rehabilitation for all patients who are functionally disabled due to their disease. In Zackrisson's study, out of 83 patients allocated to the PR intervention group, 56.6% completed the full programme, 2.4% dropped out before the end, and 41% declined to participate altogether.[1] The reasons for not attending at all or leaving the programme before its completion were; patients leaving town (5.6%); their condition being bad (2.2%); they would not participate in groups (8.3%); and the time of the sessions being unsuitable (2.8%). The biggest group was where the reason was described as "other". Full details of the reasons in this group were not specified.

In the semirural county of Somerset, UK, PR is provided in community-based centres. Patients are referred from primary as well as secondary care, and the PR programme runs for a period of six weeks. Attendance in this programme was poor, but the reasons for this had not previously been investigated. We therefore carried out a