LETTERS TO THE EDITOR

The five year school medical—time for a change

SIR,—A recent study of the school entry examination carried out in Macclesfield¹ showed findings that were in some ways comparable with those found in Stoke-on-Trent reported by Smith *et al.*² With the limited resources available all practices must be questioned. However, factors such as lack of staff must not be allowed too big an influence. Otherwise additional staff will never be provided and opportunities to improve the service will be lost.

The main cause for concern is the different conclusions reached by these two papers. The former favoured retaining a routine medical examination at school entry, and the latter making it selective, as did the study by O'Callaghan and Colver.³ Compared with the Macclesfield study, the data of Smith *et al.*² indicate a lower problem and referral rate and there is a lack of information on referrals for hearing, vision, and growth defects. Other factors which may influence the conclusions drawn by the two studies could be the timing of the school entry examination: before entry in Macclesfield (age 4.5 years) and after entry in Stoke-on-Trent (age 5 years), and also the time interval between the last surveillance and the school entry medical examination in the two districts.

There are very strong arguments for selective school medical examinations in older children, but we question the suggestion that only selected children should have a medical examination at school entry. Most of the problems identified are minor ones, but if missed may lead to disabilities later in life. There is a great deal of debate about developmental screening, but if routine testing at school entry is stopped experience suggests it may be a long time before defects of language and motor skills are identified. This applies especially to certain groups of children such as those from inner city communities and from ethnic minorities. Evidence from a recent survey among teachers in Macclesfield, which it is hoped to publish, indicates that most teachers wish to be informed of all conditions that may affect a child's progress before the start of school.

As pointed out in the Macclesfield study, apart from the medical diagnosis, the school entry examination does provide parents with an opportunity to air concerns and, as has been stressed in another context, it is wise not to forget the worried well, be they worried about themselves or their children.⁴ Also it presents the chance to counsel parents, for health education, and for letting parents know what the school health service has to offer. Admittedly a 10 minute examination plus a questionnaire and the nurse's check is inadequate for all this, and more staff time would be needed. What is really required is a comparative study between the two approaches. Whichever approach proves more effective there will be implications for staffing, and for more effective use of the staff's time. Before final decisions are made on a national scale more experience is needed. Both these studies

indicate that children and their parents should be seen at school entry, but the content of the examination and by whom it should be done is debatable.

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- 1 Jones C, Batchelor L, Gordon N, West M. The preschool medical: an evaluation of this examination and its role in child health surveillance. *Child Care Health Dev* 1989;15:425-34.
- 2 Smith GC, Powell A, Reynolds K, Campbell CA. The five year school medical—time for change. *Arch Dis Child* 1990;65:225-7.
- 3 O'Callaghan EM, Colver AF. Selective medical examinations on starting school. *Arch Dis Child* 1987;62:1041-3.
- 4 Hart JT. Reactive and proactive care: a crisis. *British Journal of General Practice* 1990;40:4-9.

SIR,—It is currently fashionable to question established medical practice. Dr Smith *et al* question the value of school entrant medical examinations but Whitmore and Bax support routine checks.^{1 2} Both authors rely on retrospective analyses and neither addresses the question of opportunistic health education.

We have begun a prospective analysis of school entrant medicals in this urban deprived area. Examinations are performed in school by the school doctor and nurse. We report here the results for the first school.

New physical findings occurred in 16 (25%) of the 63 children examined. Four children were immediately referred: two were deaf (not realised by their parents), one had an inguinal hernia, and the fourth had a foreign body in one ear that could not be removed in school. Twelve children required review: five by the school doctor, two by the school nurse, and five for vaccination.

In one third (n=20) of consultations, mothers had problems they wished to discuss. Another seven raised problems with siblings, reflecting the continuity of care provided by the community child health service. Health education was given in two out of three consultations. All mothers we asked (n=30) found a school entrant medical useful. Only two children in this school failed to attend and both were ill. The head teacher actively encouraged parents to attend as she believed the medical to be helpful.

Another aspect not considered by the other authors was immunisation. A retrospective analysis conducted in September 1989 showed that 10.5% of children had not completed the primary course at school entry. Four children (6%) in the present series had not completed and only eight (13%) had received their boosters and mumps-measles-rubella vaccination before their school medical examinations.

In summary, a medical consultation at school entry is of great benefit not only to the subject but also to parents and teachers. The amount of pathology detected in this deprived area would make its demise a great loss.

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- 1 Smith GC, Powell A, Reynolds K, Campbell CA. The five year school medical—time for change. *Arch Dis Child* 1990;65:225-7.
- 2 Whitmore K, Bax MCO. Checking the health of school entrants. *Arch Dis Child* 1990;65:320-6.

Is low serum α fetoprotein a sensitive marker for diaphragmatic hernia?

SIR,—Antenatal diagnosis of congenital diaphragmatic hernia by ultrasonography remains unsatisfactory. In our experience only six of 45 infants recently seen with congenital diaphragmatic hernia (13%) were thus diagnosed; this corresponds to published experience.¹ Recently, Resta *et al* reported low maternal serum α fetoprotein in two cases of fetal congenital diaphragmatic hernia and suggested this could be a useful antenatal marker of the condition.² In many places, measurement of maternal serum α fetoprotein is an established routine antenatal screening procedure for neural tube defects and therefore its use involves no additional cost or manpower. In addition, unlike ultrasonography, measurement of maternal serum α fetoprotein is not operator dependent and uniformity in the interpretation of results is more easily achieved.

Therefore, to determine if low maternal serum α fetoprotein could improve the antenatal diagnosis of congenital diaphragmatic hernia, we retrospectively traced the serum α fetoprotein results from the mothers of 45 consecutive patients with congenital diaphragmatic hernia treated in Royal Liverpool Children's Hospital Alder Hey during the period 1983 to 1988. None of the patients in this series had anomalies known to be associated with low maternal serum α fetoprotein such as chromosome abnormalities or duodenal atresia.³ The results of maternal serum α fetoprotein were available in 24 patients and are shown in the figure. Low concentrations, defined as values below 0.5 multiples of median (MoM), were present in three of 24 patients (12.5%). All three patients whose

Maternal serum α fetoprotein concentrations in cases of congenital diaphragmatic hernia.

mothers had low serum α fetoprotein had left sided diaphragmatic defects: one died before surgery; two had surgery, of whom one died and one survived.

It has been suggested that low maternal serum α fetoprotein in congenital diaphragmatic hernia may be due to liver herniation into the chest resulting in decreased hepatic production or secretion of α fetoprotein.² Liver herniation occurred in only two of our three patients whose mothers had low serum α fetoprotein and therefore is unlikely to be the sole explanation of this observation. None of our three patients whose mothers had low serum α fetoprotein had antenatal diagnosis of congenital diaphragmatic hernia by ultrasonography. Our experience suggests that low maternal serum α fetoprotein has a definite but limited role as an adjunct investigation to ultrasonography in the antenatal diagnosis of congenital diaphragmatic hernia.

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- 1 Joint study group on fetal abnormalities. Recognition and management of fetal abnormalities. *Arch Dis Child* 1989;64:971-6.
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- 3 Glick PL, Pohlson GC, Resta R, et al. Maternal serum alpha-fetoprotein is a marker for anomalies in paediatric surgery. *J Pediatr Surg* 1988; 23:16-20.

Clinical monitoring of steatorrhoea in cystic fibrosis

SIR,—Walters and colleagues, comparing methods of assessing steatorrhoea in cystic fibrosis,¹ attributed the steatocrit test to Colombo.² The correct attribution is Phuapradit³ and so their claim to have used the method 'exactly as originally described' is not substantiated.

Phuapradit *et al* published the steatocrit as a method for assessing fat excretion in the newborn. If applied to the older child on a mixed diet, particularly if the subject is malabsorbing (the authors did not say whether or not their subjects were receiving pancreatic enzyme supplements during the study), the stool homogenisation technique becomes crucial. A fine tolerance Potter-Elvehjem homogeniser is essential for satisfactory dispersal of stool solids and the homogenate water content must be higher than that used by Phuapradit and colleagues. Once established, the conditions for homogenisation and centrifugation must be scrupulously observed. Walters *et al* thought them insufficiently important to give details of either step and it is not surprising therefore that serious technical difficulties were experienced. The steatocrit cannot be dismissed on this evidence.

The other semiquantitative stool fat method assessed was microscopy of stool homogenate after lipid staining (a subjective assessment but apparently not done blind). It produced a specificity of 55% or 46% depending on which of the two normal fat excretion limits quoted is accepted (20 mmol/day in the text, 17.5 mmol/day in figs 1 and 2). Most children with cystic fibrosis achieve normal or near normal fat excretion when given microencapsulated enzyme supplements but half such children

would be indicated for further investigation or increased enzyme dosage by the microscopy method. The authors' enthusiasm for the test is therefore not warranted and it would not, as was suggested, identify the non-compliant for there would be no way of differentiating the latter from a poor responder. Those who spend their working days contemplating stools understand the need for an alternative to the 72 hours fat excretion test. The 'bluebird' still eludes us.

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- 1 Walters MP, Kelleher J, Gilbert J, Littlewood JM. Clinical monitoring of steatorrhoea in cystic fibrosis. *Arch Dis Child* 1990;65:99-102.
- 2 Colombo C, Maiavacca R, Ronchi M, Consalvo E, Amoretti M, Giunta A. The steatocrit: a simple method for monitoring fat malabsorption in patients with cystic fibrosis. *J Pediatr Gastroenterol Nutr* 1988;6:926-30.
- 3 Phuapradit P, Narang A, Mendonca P, Harris DA, Baum JD. The steatocrit: a simple method for estimating stool fat content in newborn infants. *Arch Dis Child* 1981;56:725-7.

Drs Walters, Kelleher, and Littlewood comment.

Thank you for the opportunity of replying to the letter of Drs Brown and Booth relating to our recent publication.¹ We are grateful to them for pointing out our error in stating that the steatocrit method was carried out as originally described. In fact, what should have been stated was that the method was carried out as described by Colombo *et al*, though it must be stated that methodological details in that paper were indeed sparse.² All homogenisations, after addition of two volumes of water, were carried out in a Waring blender at 12 500 rpm for five minutes. Centrifugation details are given in our paper and both these conditions were standardised for the results published. As stated in our paper, various technical changes were attempted to improve the method, but without success, and we have no explanation for this. We have not dismissed the steatocrit method but would repeat that, whatever the reason, 'in our hands this method would not serve as a screening test'.

We do agree that microencapsulated pancreatic enzyme preparations greatly improve the control of fat malabsorption in cystic fibrosis. In the trials so far published, however, a considerable proportion of patients remain with appreciable steatorrhoea, and identification of these patients is important. In our clinic, where over 160 patients taking these enzyme preparations have had regular faecal fat assessments, about 20% remain with significant steatorrhoea. Whether continuing malabsorption is due to a poor response to treatment or non-compliance is difficult or impossible to assess, but the presence of continuing severe steatorrhoea, which will be reliably demonstrated by the simple microscopic screening test, will alert the physician to investigate both possibilities.

Happily we do not spend our working days contemplating stools, but we would agree that an alternative to timed faecal collections is needed, particularly in cystic fibrosis where regular monitoring of fat malabsorption may be required. However, in our hands the steatocrit method was certainly not the elusive 'bluebird'. The microscopic fat method does, however, have some flight in it and does

exclude severe steatorrhoea but neither this indirect method, nor any other presently available, will quantify the severity of fat loss and we would certainly not make this claim.

Patients who do not come¹

SIR,—Stamps are cheaper than visits. Instead of a further appointment, mothers can often be invited to write with news of the child, most effectively on an easily remembered day such as a birthday, half term, or Guy Fawkes, but at any time if there is concern. An addressed envelope, perhaps stamped, may be given as a reminder. The least literate letters are often the most informative, and no news is good news. The letter of thanks (from the doctor, not a functionary), can offer another appointment if necessary.

New patients who fail to come can be invited the next week by a personal letter asking them to confirm the booking by telephone so that it may be offered to another child if necessary. If there is no response, the referring doctor is told.

Paediatricians rarely have unplanned waiting lists for admission, but if they do, it is worth telephoning to ask if a proposed admission date is convenient before sending it.

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- 1 Andrews R, Morgan JD, Addy DP, McNeish AS. Understanding non-attendance in outpatient paediatric clinics. *Arch Dis Child* 1990;65:192-5.

Monitoring and sudden infant death syndrome

SIR,—We are disappointed with your recent article on home monitoring and sudden infant death syndrome.¹ On average between five and 10 infants at risk of sudden death are referred each week to our department by their consultant paediatrician or family practitioner for investigation and management. The latter includes a home monitoring programme that involves the use of transcutaneous oxygen pressure (PO₂) monitors and this is well known to the Foundation for the Study of Infant Death and to the other authors of your article. We have presented our results at national (paper presented at joint meeting of British Paediatric Respiratory Group and Foundation for Study of Infant Death, Liverpool 16 September 1988) and international² conferences concerning sudden infant death.

The single 'throw away' sentence in the article dismissing transcutaneous PO₂ monitoring in the home is not based on experience but on prejudice following its use in neonatal units. In contrast, we have experience in over 250 infants with the use of this monitor in the home for periods up to 13 months (mean (SD) 6.4 (2.6) months). Unlike breathing movement detectors, this monitor is 100% sensitive to hypoxaemic episodes. It has infrequent false alarms (one every six days) compared with an average of six per day for monitors based on impedance pneumography and electrocardiography.³

In our experience, the PO₂ monitor does not cause skin burns (sensor temperature 43°C, recommended resting interval eight hours), has a median total response time of 21