LETTERS TO THE EDITOR

Perception of need for emergency admission to hospital

EDITOR,—The only conclusion to be drawn from MacFaul *et al*'s article on parental and professional perception of need for emergency admission to hospital¹ is the need for more studies in this area.

The study was retrospective and sampled a biased population—that is, parents of children who had been told their child needed hospital admission. Parents' anxiety levels are highest at the time of admission and their perceived need for admission at this time tends to be based on emotion rather than information about their child's illness. When a doctor has said the child is being admitted, most parents are not going to say that admission is unnecessary. When there is only moderate correlation between severity of illness score and need for admission score, it is an issue of parental education and the answer to this should not be automatic admission to hospital.

In the discussion, MacFaul *et al* acknowledge the limitations of their data collection methods but then draw rather dogmatic conclusions ignoring these limitations. They make only scant reference to models of successful alternatives to admission to hospital with assessment units and experienced home care teams.^{2,3} Further studies are needed: to address consultant assessment of severity of the child's condition and a need for admission at presentation; and to ascertain the views of parents and general practitioners with experience of both home care and acute admission to hospital as to which is the preferred option. Until these studies are performed, MacFaul *et al*'s conclusions are potentially harmful to the development of paediatric services in the next millennium.

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- 1 MacFaul R, Stewart M, Werneke U, Taylor-Meek J, Smith HE, Smith IJ. Parental and professional perception of need for emergency admission to hospital: prospective questionnaire based study. *Arch Dis Child* 1998;79:213-18.
- 2 Cramp C. Commentary in ambulatory paediatrics—making a difference. *Arch Dis Child* 1997;76:468-76.
- 3 Beverley DW, Ball RJ, Smith RA, *et al*. Planning for the future: the experience of implementing a children's day assessment unit in a district general hospital. *Arch Dis Child* 1997;77:287-93.

EDITOR,—The article by MacFaul *et al* states that a prospective questionnaire was used to study emergency paediatric admissions. However, this was only prospective to assess parents' perception of the severity of their child's illness and the need for admission. A retrospective questionnaire was used to assess consultants', general practitioners', and parents' views regarding the need for admission and alternative services.

The study failed to clarify the term "admission". This may be attendance with an

ill child for observation to seek a second opinion or for an overnight stay.

It is not surprising that the parents and general practitioners scored highly the need for admission. However, it is interesting that the parents have given the severity of their child's illness a much lower score. This merits interpretation in light of the definition of admission. Once the child has been assessed, parents should be given a clear choice of the alternatives at the time of admission if the child does not need an overnight stay.

When consultants' views regarding the need for admission was assessed retrospectively, 71% were in favour of admission. However, on the score of the severity of illness only 10% exceeded 6. It is obviously and always difficult to assess illnesses retrospectively. The need for admission is a clinical judgment that has to be made on the spot at the time of admission by an experienced member of staff.

The decision to discharge some children should be taken jointly by an experienced paediatrician, the senior nurse looking after the child, and the parents. Unfortunately this study, perhaps unintentionally, has ignored the views of the nurses.

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Dr MacFaul et al comment:

We are pleased that Drs Goodyear and Mulik support our views that further studies into admission are needed. Despite being based only on inpatients, our study, which collected data concurrently, provides information that assists understanding of the factors influencing admission. There is little published information about the views and needs of parents or general practitioners on provision of alternatives to traditional paediatric care, and we emphasised the need to take these into account. Their views give some insight into recent rises in demand for admission, especially at night. Support from skilled nurses at home can help parents to cope but this will require additional resources not yet likely to be released from hospital.

Our findings generally served to strengthen arguments for the development of new style paediatric services¹ rather than being potentially harmful to them. We argue that provision of same day paediatric consultation supported by outreach nursing could bring peak evening demand forward into daytime and prevent overnight admission, which may otherwise become the only option. But alternatives to admission, like any new process, should be evaluated and their roles questioned. The ambulatory services referred to both by us and your correspondents report reduction in overnight stay but not in overall admissions.

Dr Madlom raises important issues. An admission included children managed acutely as inpatients by the paediatric team for however short a period.² Future studies should include assessment of illness severity for general paediatrics and views of nurses, usually involved in discharge but not so often in the admission decision.

Most agree that children should only be admitted to hospital when it is necessary—but if admission is needed it should be achieved easily and speedily and be as short as possible.³ Other means of managing acute illnesses should be considered and we need to refine our criteria for specialist intervention

in acute childhood illnesses. If more children are seen by specialist services, even if only a small proportion is admitted, more children might end up in hospital. The trend for parents to attend accident and emergency (A&E) departments rather than their general practitioner compounds the problem as a higher proportion of A&E attendances may be admitted, although data on this are limited. The CESDI report of 1998³ identified deficiencies in the management of acute illness both in hospital and in primary care. Improved support to general practice may encourage parents to seek consultation from services better geared to deliver care at home.

- 1 *Ambulatory paediatric services in the UK: report of a working party of the Royal College of Paediatrics and Child Health*. London: RCPCH, 1998.
- 2 MacFaul R. Planning for the future: the experience of implementing a children's day assessment unit in a district general hospital [commentary]. *Arch Dis Child* 1997;77:292.
- 3 *Confidential enquiry into stillbirths and deaths in infancy*. 5th annual report. London: Maternal and Child Health Research Consortium, 1998.

Clinical and laboratory findings in referrals for mitochondrial DNA analysis

EDITOR,—The paper by Lamont and colleagues¹ is a valuable survey of the findings associated with mitochondrial DNA mutations. However, DNA analysis is time consuming and expensive, and there is a need for a screening test to identify those who merit further investigation. Measurement of lactate has been proposed, and it was disappointing that this study found it lacked specificity. However, two issues need discussion.

Lamont *et al* state (table 2) that 11 of 13 patients had raised lactate concentrations in blood or cerebrospinal fluid (CSF); however, the data they present refers only to plasma concentrations.¹ Lactate is more stable in CSF than in plasma,^{2,3} and increased concentrations specifically reflect central nervous system disease. The sensitivity reported for plasma lactate in detecting mitochondrial disease is similar to that previously reported by us.³ We found the sensitivity of CSF lactate was similar to that of plasma lactate in this role, but were unable to assess its specificity. It would be valuable to know if Lamont *et al* are able to address this point as CSF lactate measurement is increasingly being requested.

Despite the poor specificity of plasma lactate, it may still have a role in screening for mitochondrial disease. Although the specificity was only 51%, the negative predictive value of a concentration < 2 mmol/l was 97%.¹ The overall cost of measuring lactate in our laboratory is less than £5, compared to £68-200 for mitochondrial DNA studies at our regional centre. Furthermore, the result is available in two hours rather than a week or more. Thus, measurement of plasma lactate is a cost effective and timely procedure for identifying children who are unlikely to merit further investigation. CSF lactate measurement may be even more cost effective, depending on its specificity.

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- 1 Lamont PJ, Surtees R, Woodward CE, Leonard JV, Wood NW, Harding AE. Clinical and laboratory findings in referrals for mitochondrial DNA analysis. *Arch Dis Child* 1998;79:22-7.

- 2 Posner JB, Plum F. Independence of blood and cerebrospinal fluid lactate. *Arch Neurol* 1967; 16:492-6.
- 3 Hutchesson A, Preece MA, Gray G, Green A. Measurement of lactate in cerebrospinal fluid in investigation of inherited metabolic disease. *Clin Chem* 1997; 43:158-61.

Dr Lamont and colleagues comment:

Hutchesson's letter raises several valuable points. Our paper was retrospective and so subject to the difficulties inherent in that form of information collection. Few of the 190 subjects had a CSF lactate value recorded. This made separate analysis of CSF lactate specificity in mitochondrial disorders impossible.

Mitochondrial DNA mutations are one cause of inborn errors of the mitochondrial electron transport chain, thereby reducing NADH disposal by oxidation. The equilibrium concentration of lactate is directly related to the concentration of NADH and NAD⁺. It follows that lactate accumulation may occur as a result of accumulation of pyruvate, NADH or electrons. Lactate concentration in arterial blood and CSF is generally more reliable than venous plasma, being less prone to spurious increases.¹ However, the specificity of raised CSF lactate for mtDNA mutations, as opposed to other conditions such as pyruvate dehydrogenase deficiency, is unlikely to be good given that tissues outside the nervous system are often involved. These include skeletal muscle, cardiac muscle, liver or pancreas and would not contribute to CSF lactate concentrations.

The conclusion from our paper was that muscle biopsy was the only investigation providing specific evidence of an underlying mtDNA mutation. That conclusion is now challenged by the discovery that the mutated protein in both Friedreich's ataxia and autosomal recessive hereditary spastic paraplegia are mitochondrial, and that ragged red fibres and cytochrome C oxidase deficiency have been reported in muscle biopsies of patients with both conditions.² A simple screening test for mtDNA mutation diseases is still to be found.

- 1 Clarke MR. *A clinical guide to inherited metabolic disease*. Cambridge: Cambridge University Press, 1996.
- 2 Di Mauro S, Schon EA. Nuclear power and mitochondrial disease. *Nat Genet* 1998;19: 214-15.

Improving communication between doctors and patients

EDITOR.—Written information is often given to parents during their child's hospital admission or outpatient visit. A report recently published by the Royal College of Physicians of London states: "Written information in a form which is easily understood by the patient can be invaluable."¹

We looked at 38 leaflets (15 produced by self help groups, 12 by pharmaceutical companies, and 11 produced locally by paediatricians) obtained from the Royal United Hospital, Bath health information department on common childhood conditions, and used a Gunning Fog test to see if they were "easily readable".²

It has been suggested that a Gunning Fog test score of ≤ 12 should be aimed for when producing leaflets for patients.³ Our study showed that 62% of leaflets produced by self help groups and 31% of those produced by pharmaceutical companies had a Gunning

Fog score > 12 , compared to only 10% of those produced by paediatricians. The higher scores of the self help group leaflet may reflect the higher educational attainments of those designing and evaluating this information. Leaflets produced by hospital staff had lower Gunning Fog scores perhaps reflecting the process of producing these leaflets. Following an initial draft they are studied by trainees and consultants in the department, and sentences are often shortened and simpler words substituted for more complex ones.

Written information given to parents must be readily understood and we have shown that it is possible to write information in an easily readable form.

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- 1 *Improving communication between doctors and patients*. London: Royal College of Physicians of London, 1997.
- 2 Gunning R. *The technique of clear writing*. New York: McGraw-Hill Book Co 1952:29-39.
- 3 Albert T, Chadwick S. How readable are practice leaflets? *BMJ* 1992;305:1266-8.

BOOK REVIEWS

Notes on Paediatrics: Cardiorespiratory Disease (Pp 160; £14.99 paperback; ISBN 0-7506-2444-2); **Notes on Paediatrics: Neurology** (Pp104; £12.99 paperback; ISBN 0-7506-2445-0); **Notes on Paediatrics: Neonatology** (Pp144; £12.99 paperback; ISBN 0-7506-2446-9). By Alex Habel, Rod Scott. Butterworth-Heinemann, 1998.

Chopping big books into little books seems to be a current literary trend, and further evidence for this is to be found in the new *Notes on Paediatrics* series. Rows and rows of tiny paperbacks are replacing the huge "Complete Works of..." tomes in bookshops all over the country. I have even heard rumours that the *Oxford English Dictionary* will soon be available in 26 sections. It is hardly surprising that textbooks should go the same way as it solves the perennial problem of being at least 10 years out of date before they even go to press. Publishing one chapter at a time as soon as each is updated seems the ideal solution.

The textbook under the chop in this case is Habel and Scott's *Synopsis of Paediatrics* and the three cuttings to emerge so far are updates of the cardiorespiratory disease, neurology, and neonatology sections.

The key features promised in the introduction include coverage of recent developments and controversial issues in a clinically relevant context using a problem orientated approach that is, of course, evidence-based. I think that on the whole the authors adhere to this manifesto.

The books are not intended to be used as reference texts for the subspecialties they

address. Instead the authors have tried to focus on subjects that are most relevant to the day to day practice of paediatrics. They highlight areas where there have been recent advances in the understanding of pathophysiological processes, and they also discuss new treatment strategies and ongoing debates about management issues. Consequently these volumes are neither exhaustive nor exhausting, and can easily be read on a long train journey in about the time it takes to read a Terry Pratchett novel.

The volume on cardiorespiratory disease starts with a brief summary of basic physiology, embryology, and epidemiology. The practical symptom led approach soon becomes apparent with advice on what to do with wheezy infants, lumps in the neck, blue babies, murmurs, and so forth. Also worth mentioning are the comprehensive reviews of asthma, cystic fibrosis, and congenital heart disease. The wide ranging effects of these diseases on children and their families, such as the genetic implications and psychosocial repercussions, are discussed along with the routine coverage of aetiology, symptoms, investigations, and management.

Scattered throughout the text are small, digestible chunks of relevant pathophysiology with emphasis on how it explains the clinical presentation and enables the interpretation of investigations and examination findings.

The neurology section also begins with a résumé of basic sciences including a neurochemistry update that covers the role of neurotransmitters in epilepsy. Development and disability are discussed with emphasis on the multidisciplinary approach. There is practical advice about the range of services and allowances available to handicapped children. This is a subject not covered by the more academic texts but which often comes up in the membership examinations (as well as in real life). Equally useful are the reviews of epilepsy, cerebral palsy, coma, floppy infants, and headaches.

The neonatology chapter starts with a series of minireviews of recent advances and currently debated issues such as nitric oxide, ECMO, and group B streptococcus. Ethical dilemmas are considered as well as the financial and emotional costs of caring for sick neonates. As in the other two volumes, the bulk of the text addresses the most frequently encountered problems and presents them in a concise and readily accessible format.

In conclusion, the authors have attempted to provide a current, theoretical foundation to back up their proposed management strategies. In other words they supply a map with a suggested route and not just a set of directions. I would recommend this series to membership candidates above all, but also to compilers of ward protocols, and anyone with a long train journey ahead of them.

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Pediatric Skeletal Scintigraphy with Multimodality Imaging Correlations. By Connolly LP, Treves ST. (Pp 286; hardback £91.50, US\$135.00.) Springer-Verlag, 1998. ISBN 0 387 94695 0.

The first of five chapters covers the technique and important practical details of radioisotope bone scans, the second covers infection, the third trauma as it affects the skeleton, and chapters 4 and 5 cover benign and malignant conditions of the skeleton.

The authors and their institution have a high reputation and have been one of the leading proponents of paediatric nuclear medicine. Thus it is no surprise to see a book dedicated to the skeleton in which there are high quality images and the importance of such quality is well demonstrated. The book combines all modalities of imaging and thus allows the reader the opportunity to assess recent advances and know the role of isotope bone scintigraphy in the investigation of a child's skeleton.

The chapter headings are well chosen and cover most conditions adequately. Infection is comprehensively covered although one would have liked to see bacteriological proof of the organism stated. The chapter on trauma covers abuse very well and the examples are clear. The possible negative bone scan with a skull fracture deserves more emphasis. Chapter 4 includes not only benign tumours but also a myriad of important conditions where bone scans have an important role to play. These include benign cortical lesions, cystic lesions, fibrous lesions, osteochondroses as it affects all parts of the skeleton, and metabolic bone disease. Again the high quality images do justice to the efforts of the authors and publisher. Each chapter has a useful list of references, which are almost exclusively from the USA.

If the book has any shortcomings these relate to the fact that isotope bone scans are highly sensitive for the detection of skeletal abnormalities but are non-specific and so similar appearances may be seen in different conditions. This is not emphasised and there is little cross referencing to the similarities of images in the different chapters. There are insufficient examples of the changes of the paediatric skeleton with maturation, and there is little emphasis on the importance of knowing and understanding these changes. One of the most difficult aspects of paediatric bone scintigraphy is the identification of the normal bone scan from the abnormal scan, detailed knowledge of maturation is critical for this.

This book should be available in every department where isotope bone scans are done, both to ensure that the scan is of diagnostic quality and to have examples of different conditions available.

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Supportive Care of Children with Cancer, 2nd ed. Edited by Ablin AR. (Pp 327; paperback £25.00.) The Johns Hopkins University Press, 1998. ISBN 0

801 85727 9.

The proportion of children being cured of cancer continues its inexorable rise. The cohort treated by UKCCSG centres in 1991–94 is approaching a plateau on the survival curve at about 70%. If survival continues to rise as in previous cohorts, there is every expectation that by the year 2000 around 80% of children will be cured. This improvement reflects not only the development of better primary treatment, but also the great advances in supportive care that have permitted the delivery of increasingly toxic chemotherapy regimens. This useful little book represents the efforts of the North American Children's Cancer Group to codify and rationalise their supportive care regimens, not only to ensure a high standard of care but also to control what has become one of the greatest variables in clinical trials of cancer treatment.

The overall organisation and layout of the book is reminiscent of the American Academy of Pediatrics "red book" on infectious diseases. A total of 21 chapters cover every conceivable aspect of supportive care. The first part has the sections that one might conventionally expect in such a book and covers the problems of immunity, infection, blood component treatment, haemopoietic growth factors, problems with the administration of chemotherapy and radiotherapy, and control of pain. There is a very useful chapter on oncological emergencies and a selection of very useful chapters on subjects that perhaps could use more of our attention, such as nutritional support and the management of the sexually mature patient with cancer. No doubt many British paediatricians will wonder why the latter chapter is included, but there are increasing numbers of adolescent patients being treated by paediatric oncologists in the UK, and these patients represent an age group of which many paediatric trainees will have little experience.

The latter part of the book includes interesting chapters on psychosocial care, alternative medicine, home care, and palliative care. I particularly enjoyed the "quick quack check" in the section on alternative medicine. The chapters are well organised and designed for dipping into rather than reading through. One might not completely agree with all of the recommendations, but as the authors themselves frequently say, their suggestions are reasonable. Where data are inconclusive or suggest that an intervention is inappropriate there is a clear statement to that effect.

Having worked in the USA I tend to be more tolerant of books originating there than

most UK reviewers seem to be. There are differences in practice and emphasis, but who are we to say that our view is correct? In this book too, there are some areas where UK practice differs. There are very few instances where the differences are of any significance, but where they exist it is usually a consequence of drug licensing. Inevitably there are a few areas of deficiency or where one might seriously differ with the suggestions made by the authors. For example, in the section on hyperkalaemia I was surprised that there was no mention of the problem of factitious results. Failure to mention the use of salbutamol in the treatment of hyperkalaemia probably reflects availability and licensing. The other irritation is the use throughout the book of non-SI units. Surely it is not difficult to include SI units in a book with an intended market that extends beyond the US?

All of the regional children's cancer centres will have their own written guidelines for supportive care, so who would buy this book? I doubt that many units' guidelines will have the comprehensive coverage that this book gives and for that reason alone it ought to be available on the notes trolley in all centres worthy of the name. In addition, it is a useful textbook for junior staff beginning a rotation in oncology. Having read through a number of chapters I lent the book to the team's senior house officer, eventually prising it out of her grasp some weeks later; it is now chained to the notes trolley until it is replaced by the third edition.

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CORRECTION

The long and the short of it

The title of the annotation (Davies DP. *Arch Dis Child* 1999;80:105–6) should have been:

Prolonged QTc interval as an important factor in sudden infant death syndrome

and not as published. The error is regretted.