defined an "at risk" group. In the many previous retrospective epidemiological and pathological studies the only independent high-risk factors shown to apply to all populations studied have been prematurity and low birth weight.² Prospective studies, although difficult to organise and expensive because of the large numbers involved, are in our opinion the only means of identifying in advance with known probability some of those babies who will suffer SIDS. Our own studies have already demonstrated that a proportion of healthy neonates have cardiac arrhythmias with or without prolonged apnoea.³⁻⁵ This group of infants may or may not have a higher risk of SIDS, but without a prospective study to investigate this hypothesis we will never discover an association if it exists. There is no logical reason why prospective studies should await prolonged retrospective studies and why the two should not be carried out simultaneously.

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¹ Steinschneider, A, *Pediatrics*, 1972, **50**, 646.

² Bergman, R B, Beckwith, J B, and Ray, C G, *SIDS*. Seattle, University of Washington Press, 1970.

³ Southall, D P, Vulliamy, D G, and Davies, M J, *British Medical Journal*, 1976, **2**, 599.

⁴ Southall, D P, *et al*, *British Medical Journal*, 1977, **2**, 597.

⁵ Proceedings of the British Cardiac Society, *British Heart Journal*. In press.

Zuckerman overtaken

SIR,—I think it should be pointed out to Mr J K Fawcett, secretary of the Institute of Medical Laboratory Sciences (11 November, p 1364), that leaders in the *BMJ* do not necessarily represent the views of the BMA policy-makers. I expect that Mr Fawcett would not always find himself in agreement with the views expressed in the *IMLS Gazette*. So far as I know the Zuckerman Report has never been accepted by pathologists for the very reasons which have now so obviously caused it to fail and be rejected. It was both unnecessary and impracticable. The concept of a single hospital scientific service was a dream, unrelated to facts, produced by planners. Like all the great plans of unification and centralisation which are so wastefully foisted upon us, it was doomed to failure. We feel that since the central theme of the Zuckerman Report has now been abandoned, the whole of it should be set aside.

The report which accompanied the draft circular, which it is proposed should replace HSC (IS) 16, has many admirable features. We regret, however, that the draft document again attempts to cover too wide a field and in so doing may render itself ambiguous. We feel that it would have been much better to have had separate documents for each of the main divisions—for example, pathology, radiology, nuclear medicine, and medical physics—which would have dealt specifically and in detail with the arrangements applicable to those specialities.

I am sure that the IMLS will acknowledge the fact that pathologists contributed significantly to its inception many years ago and that pathologists used to lecture to technicians and examine on behalf of the institute, devoting a good deal of their spare time to encouraging and promoting the wellbeing of the technicians.

Things have changed and the technicians now look to a trade union to promote their interests. Nomenclature has also changed with remarkable frequency and rapidity over the years, no doubt in an attempt to improve status and public image, but at the same time the educational standard of entrants, as in other areas (including entrance standards for technical colleges), has in general fallen. I find it rather unrealistic to call a school-leaver with two "O" levels and two CSEs a scientific officer, albeit a junior one. A good deal is said about career structures and laudable staff aspirations, but the NHS does not want, neither can it afford, a large number of expensively trained people doing routine work. It is a fact that 50% or more of hospital laboratory work is routine and repetitive. For example, it is easy to train quickly cytology screeners, who have only limited academic background, within the laboratory, and these screeners are responsible for 80% of the work in the cytology section of the laboratory. Similarly, the routine preparation, cutting, and staining of sections for histology require little training. The same applies to the use of automated equipment in biochemistry and haematology, any breakdown of which usually requires the attendance of the firm's representative to carry out repair work. It would have been better if the years since Zuckerman had been spent discussing problems such as this, together with a realistic approach to a balance between staff numbers and work load, staff reduction due to the introduction of automated apparatus, and the provision of a properly organised 24-hour laboratory service.

I do not know that the BMA has any aspirations for its specialist members affected by the Zuckerman Report, but it has certain intentions, policies, and opinions, and these are not sectional but are concerned with the overall running of hospitals. The Royal College of Pathologists is certainly concerned and so is the Royal College of Radiologists, as indeed are all the other royal colleges through their membership of the Joint Consultants Committee, where a common policy is produced. It would be foolish for anyone to think that the pathologists or any other specialists stand in isolation.

As a matter of personal experience it is true that the majority of science graduates entering the MLSO grades do so because they cannot get posts elsewhere. Many have not considered working in a pathology laboratory before taking their degree. Nevertheless, they are a welcome and stable addition to the laboratory staff. It will be appreciated that a science graduate with a pass degree has received approximately 2700 hours of instruction during his course compared with approximately 960 hours of instruction given to an MLSO taking the Higher National Certificate. Certainly one of the pleasing features of the report which accompanied the draft circular is that it recommends that scientific expertise should be specifically recognised and that promotion should not depend upon staff numbers.

We all know that the practice of medical skills (which include the various branches of pathology) give great satisfaction. In fact it could be said that we were so absorbed in practising them that we overlooked changing attitudes. Pathologists have never set out to change the way in which the organisation of pathology laboratories has evolved over the years. We had no hand in the preparation of the so-called "grey" and "red" books for

England and Wales which appeared in 1974 along with the other disasters of reorganisation, neither were we consulted on their content prior to their publication. We were reasonably content with the way things were. The present rifts are not of our making, but we are prepared to defend our position. It is our view that the subject of management within a laboratory has been grossly exaggerated for political reasons. The importance of management is small compared with other scientific work and the essential management procedures are inherent in the work and grade of the officer, whoever he may be, and are an indication of increased responsibility within the scope of the scientific work. Apart from this there are such things as ordering domestic supplies, repair and maintenance of buildings, changing light bulbs, laundering, etc, which surely cannot and should not be considered a reason for promoting a trained member of the laboratory staff or form part of his work content. The reference to *Ark Royal* (of any age) is quite appropriate, since it recognises the need for an overall commander to make decisions and also the immediacy of the problems requiring those decisions. It would perhaps be appropriate to remind Mr R Hall (11 November, p 1365) that the waters did subside and that it was the occupants of the ark who survived.

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Perspectives in spina bifida

SIR,—You asked in your leading article (30 September, p 909) whether anyone had asked spina bifida children themselves for their opinions.

At our very large day school the teaching staff encouraged the older spina bifida children to see a major television programme on the subject and afterwards asked them what they thought. What advice would they give to a mother who was found to be carrying a spina bifida child? Should she go ahead or should she have a termination? Their answer was quite clear-cut and unanimous. The answer was *do not* go ahead. This was from a group of articulate children, very well looked after in a first-rate day school.

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Do all pregnant women need iron?

SIR,—As a general practitioner concerned with the management of pregnancy and confinement in a predominantly domiciliary setting, I take issue with your leading article (11 November, p 1317).

I have recently conducted a study in which routine iron supplements were withheld from pregnant women of predominantly privileged socioeconomic status in a well-nourished rural area. I prematurely terminated the study on finding, at 32 weeks gestation, a consistent and significant depletion of iron stores with both incipient and actual iron deficiency anaemia, which if allowed to continue would by extrapolation have resulted in significant

anaemia at term (haemoglobin 10 g/dl or below). I fear that if the World Health Organisation report of 1965, together with your recommendation that "the need for prophylactic iron should... be reassessed" should lead to any large-scale trials as opposed to carefully supervised studies the resultant morbidity would be unacceptably high.

I do not accept that preceding iron deficiency is either a prerequisite for or the main cause of pregnancy anaemia. Paradoxically, those who present with deficient iron stores at 8 weeks gestation are the one group who have in the past come to term with normal, "non-pregnant," haemoglobin levels and full iron stores because they have received full therapeutic doses of iron throughout pregnancy.

Furthermore, it is my experience that those women who present with apparently adequate iron stores at 8-12 weeks do not show an early fall in haemoglobin as you state but maintain their haemoglobin and iron stores until a rapid fall occurs in the third trimester coincident with transfer of iron stores to the fetus. It may reassure paediatricians to know that preferential fetal iron transfer occurs, but in these days of "fetal medicine" the mother tends to be forgotten and it is no comfort to me to know that the greedy fetus will extract the last few milligrams from the maternal iron stores.

At the end of this physiologically complex nine months the mother is obliged to perform vigorous physical exercise at a rate not under her control and sustained over a longer period than any sportsman would tolerate. Any doctor who has seen women in the first stage of labour should be impressed by the true analgesic effect of increased respiratory depth and frequency during contractions. Whatever the psychogenic benefit, the increased oxygen supply to the myometrium ensures aerobic rather than anaerobic metabolism and prevents painful accumulation of lactate etc. Ever since Mexico City in 1968 no athlete would expect to sustain optimum performance over 12 minutes, let alone 12 hours, without optimum haemoglobin levels. Are we justified in denying a woman in labour the same benefits of an efficient oxygen transport system?

Iron depletion and anaemia of pregnancy may be physiological, but it can be prevented, and two months post partum is two months too late for recovery. Let others reassess the need for prophylactic iron. I shall continue to check iron stores, haemoglobin, and red cell indices at eight weeks. Those iron-deficient at presentation will continue to receive iron in full therapeutic doses throughout pregnancy. The others will receive prophylactic iron from 26 weeks, and a further check of iron stores etc at 32 weeks will permit a change in therapy, if necessary, before it is too late.

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One species or two?

SIR,—I refer to your leading article on "Legionnaires' disease" (11 November, p 1319) in which it is stated that "the legionnaires' disease organism may have altered virulence and different clinical effects in Britain, just as the *Treponema pallidum* produces two diseases with different virulence: yaws and syphilis."

Authorities in the field of spirochaetes

currently recognise these two disease entities as being due to two closely related but nevertheless distinct bacterial species, *T pallidum* (syphilis) and *T pertenue* (yaws). Although these two bacteria cannot be distinguished on morphological or biochemical grounds (neither organism can be grown in vitro), they are immunologically distinct. Rabbits immunised with γ -irradiated *T pallidum* and subsequently shown to be immune to challenge with *T pallidum* can be readily infected with *T pertenue*.¹

Earlier work by Turner and Hollander² also demonstrated that complete cross-immunity does not occur between strains of *T pallidum* (syphilis) and *T pertenue* (yaws). While these two bacterial species are obviously closely related phylogenetically and antigenically, they are not identical. A certain degree of cross-immunity does occur, however, but never to the extent of homologous protection. Other work (quoted by Turner and Hollander) also supports the concept of these two diseases being caused by different bacteria.

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¹ Miller, J N, *Journal of Immunology*, 1973, **110**, 1206.

² Turner, T B, and Hollander, D H, *Biology of the Treponematoses*. Geneva, World Health Organisation, 1957.

Time and the consultation in general practice

SIR,—The report by Dr K B Thomas (7 October, p 1000) challenges accepted thinking and sets out to test fashionable assumptions. Those of us who criticise his paper none the less envy his temerity and the elegant, simple experiment. Correspondents (28 October, p 1228) have raised semi-philosophical and quasi-statistical objections.

We in turn detect a design fault in the method outlined. Our studies, alluded to below, have emphasised that such faults originate with unrealised prejudice in sample choice, unforeseen bias, and concealed structure in so-called random allocation of treatment. We have found these faults to be more common and easier to detect than statistical error, which is unlikely to escape your referee's attention.

Dr Thomas mentions "200 patients in whom no diagnosis could be made." A certain minimum time must have been spent in history-taking and elementary examination before the conclusion could be reached that the condition was "minor," and a fortiori that "no diagnosis could be made." The patients "were randomly selected for one of four treatments." No detail of the initial definition of a case or the process of allocation is given, in contradistinction to the exact definition of the treatment categories and the criteria of outcome. At what stage in the interview was the random allocation invoked and what method was used? If the presenting symptom was only a "ticket of admission," then the criteria of outcome would be wildly irrelevant.

I write as the convener of a group of eight family doctors who are currently tackling "statistical concepts" in a peer teaching/learning format, using a programmed text and a statistician purely as an *éminence grise* to advise on exercises and reading matter. We

found Dr Thomas's paper well worthy of analysis and have ourselves tried to work out an acceptable alternative design format. We hope he will reveal the details we call in question and start a dialogue with us.

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* * * We sent a copy of this letter to Dr Thomas, whose reply is printed below.—ED, *BMJ*.

SIR,—I should like to reply not only to Dr Craig but also to two other letters written in response to my article.

Dr I C Gilchrist (28 October, p 1228) suggests an interesting possibility, that patients may be divided into a large group who need little attention and smaller group who will benefit from more. It is difficult to see how this hypothesis could be confirmed and my study does not provide any evidence one way or another.

Dr B B Reiss (28 October, p 1228) in his stimulating letter states that if the figures in my article were doubled the difference between the long-treatment group and the other groups would be statistically significant. In any experiment in which there are differences in the results, however small, it is possible, though not permissible, to scale up the results to produce a significant difference. It is pure conjecture to imagine that the proportions would be repeated in samples of double the size. And no amount of juggling with figures would produce a statistical difference between short treatment and long treatment. Dr Reiss's point that the short no-treatment group could be expected to contain patients who were not encouraged to return may well be true. I would, however, have expected the return result for this group to be less than those for the treatment groups, when in fact they are not. Dr Reiss is right when he says that the patient's view of the consultation must be part of the measure of outcome. The patients were not consulted in this study because it had previously been shown that the results of measuring the return of the patient correspond with those of asking him whether he had got better or not. This article was originally intended to be published as part of my previous article on the consultation (20 May, p 1327) and would be easier to understand if read in conjunction with that article.

In reply to Dr Craig's sympathetic letter above, I would like to point out that Buchan and Richardson's estimate of five minutes per consultation¹ was for major and minor illness. I was dealing only with minor illness and 3.7 minutes was sufficient. The patients were randomly selected only after no diagnosis had been made, by turning up a card on which was written one of the four treatments. The undiagnosed patient² is one who presents with symptoms only, who shows no objective evidence of disease, and whose symptoms suggest no definite condition. If the presenting symptom was a ticket of admission the real reason for coming would be ventilated in the long interviews. And if this was a frequent happening the long interviews should have been more effective than the short.

The investigation described in my article, particularly the comparison of long and short treatment, is simple to perform. I wonder if