cure with primaquine is usually more difficult to obtain with the New Guinea-type strains of *P. vivax*.—I am etc.,

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Edrophonium in Diagnosis of Cholinergic Crisis

SIR,—While I agree with Dr. D. L. McLellan (22 September, p. 634) that the giving of 10 mg of edrophonium intravenously to a patient in cholinergic crisis may lead to further grave complications, what I would like to stress is that once the stage is reached where the clinician is not certain whether the patient is in myasthenic or cholinergic crisis he is so desperately ill, and anoxic, only emergency measures may save him.

Frequently when this stage is reached only junior staff are available and in this department we therefore teach that when the question of adequate oxygenation is in doubt, further drug treatment should be abandoned and the patient immediately intubated and positive pressure ventilation instituted. This measure is undoubtedly life-saving and gives the clinician a chance to sit back and review the situation. Our practice is to ventilate these patients for 48 hours, withholding all cholinesterase inhibitors. The drugs are then gradually restarted, and as a rule within 24-48 hours the patient may be weaned off the ventilator. Needless to say trained staff and the appropriate facilities should be available at all times in units undertaking the treatment of these patients.

In my opinion the appreciation of this principle of intubation, aspiration, and ventilation in these desperately ill patients has been the most significant advance in the management of these unfortunate sufferers in recent years.—I am, etc.,

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Amyloidosis in Rheumatoid Disease

SIR,—I was interested in your leading article (29 September, p. 651) concerning extra-articular changes in rheumatoid disease, including generalized vasculitis, but I felt that the amyloid changes found at times in the arteries of those with severe or protracted disease merited further discussion. This occurrence has been recognized for many years in rheumatoid[1 2] and related collagen disease. Heptinstall *et al*[3] have reported its presence in granulomatous arteritis and my colleagues and I[4] are now reporting a remarkable case of collagen disorder supervening after many years in a case of chronic granulocytopenia. In this case widespread amyloid change followed *well-controlled* treatment of the vasculitis with corticosteroids.

Widespread vasculitis may be regarded as the feature common to all collagen disorders and it is possible that the development of amyloid change in the vessels in any of them is chiefly due to protracted and severe disease. Of course it is in such cases that steroid therapy is now most likely to be given, and by prolonging life to give time for amyloid change to occur. Certainly it developed in my reported cases of rheumatoid disease in 1948, before steroid treatment was available.[2]—I am, etc.,

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1 Beattie, J. M., *British Medical Journal*, 1906, **2**, 1444.
2 Jennings, G. H., *British Medical Journal*, 1950, **1**, 753.
3 Heptinstall, R. H., Porter, K. A., and Barkley, H., *Journal of Pathology and Bacteriology*, 1954, **67**, 507.
4 Jennings, G. H., Levi, J., and Reeve, J., *Journal of Clinical Pathology*. In press.

Estimation of Body Surface Area

SIR,—One can understand Dr. C. E. Blogg's (28 July, p. 235) difficulty in estimating body surface area (S.A.) in children from the formulae of Du Bois and Meeh. However, Costeff[1] has proposed a simple empirical formula for calculating approximate surface area in children based on a knowledge of body weight only. This formula is S.A. $(m^2) = (4W+7) \div (W+90)$ where W=weight (kg). Costeff claims that this formula is accurate over the range of weights between 1·5 and 100 kg. My clinical experience has shown this to be the case except in the presence of gross oedema, as in the nephrotic syndrome. The formula is extremely useful for estimating fluid requirements in the dehydrated child whose mother knows a recent weight.

The ideal method of estimating dosage in paediatrics is a moot point. Wood[2] states that there is general agreement that calculations of dosage based on body surface area provide the most reliable estimate of therapeutic dose. Nelson[3] concurs in stating that many physiological phenomena are more closely related to body surface area than to age, height, or weight.—I am, etc.,

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1 Costeff, H., *Archives of Disease in Childhood*, 1966, **41**, 681.
2 Wood, B. S. B., *A Paediatric Vade-Mecum*, 7th edn. London, Lloyd-Luke, 1970.
3 Nelson, W. E., ed., *Textbook of Pediatrics*, 9th edn. Philadelphia, Saunders, 1969.

Psychiatric Nurse as Therapist

SIR,—We are glad that Dr. M. T. Haslam (1 September, p. 500) raised his misgivings about our article (21 July, p. 156) as they are probably shared by many people and it is useful to bring the issues out into the open.

We do not think that doctors need worry about ever being short of work as a result of nurses developing a more therapeutic role. The rise of physiotherapists, occupational therapists, social workers, and others has improved the quality of patient care but has hardly made doctors redundant. There is more than enough work to swamp everybody in the health professions for the foreseeable future. The demand for treatment far exceeds the supply, and at a time when many patients are being denied effective therapy for lack of therapists there is an urgent need to make treatment available to more people who can benefit from it.

Nurse therapists are *not* being trained to replace doctors—naturally, many years of medical training cannot be compressed into 18 months. The nurse-therapists have been trained to exercise specialized therapeutic skills for which prolonged medical training would be largely redundant. Nor do we consider that a person with an academic training would wish to spend a substantial portion of his time on skills which do not represent a wide range of the potential for which his training fits him. The doctor would deploy his time more effectively as consultant to a team. Nurses have as strict an ethical code as doctors but require much less training than medical consultants or clinical psychologists.

Far more patients can be offered effective treatment by teams of this kind, the majority of whom are nurses, together with a psychiatrist and/or psychologist. The cost of treatment per patient is far less with such teams than where treatment is given mainly by the doctor or psychologist. The lower cost results from shorter training periods for nurses as much as from their lower pay. If Britain is to offer any hope of alleviating most of those neurotic disorders which can respond to newer psychological methods there is a pressing requirement not only for many more nurse-therapists, but also for more consultant psychiatrists who are qualified to supervise teams which include such therapists. It would be unfortunate and counterproductive if the ability of nurses to undertake therapy is taken to mean a need for fewer doctors. In fact the opposite is the case—if treatment services are to be extended, more doctors are needed to lead treatment teams, which cannot function without them, but of course proportionately more nurses than doctors will be required, as always. Adequate delivery of services requires careful development of workers of varying skills, some with shorter and others with longer training, requiring less or more supervision—but supervision, as Dr. M. J. C. Thompson (8 September, p. 545) rightly insists, that must be informed and interested. The nurse-therapists whose work we reported are shortly to carry their skills to other settings in which this point will be investigated.

Psychiatric nurse-therapists can play a valuable therapeutic role with psychotic as well as neurotic patients (as Dr. T. Lear points out (29 September, p. 69), but this field was outside the scope of our research, which was directed to those adult neurotic problems which can usually be treated successfully in fewer than 30 sessions. Such include many marital and family problems, which the nurse-therapists have dealt with skilfully after a year's training.

The numbers required to service the whole of Britain cannot be projected until detailed epidemiological and cost-effectiveness studies have been completed. With adequate personnel available, treatment of neurotic disorders in their acute phase might well reduce the prevalence of chronic problems, which form such a burden on the social services at present. Preventive psychiatry might then be more realistically attainable.—We are, etc.,

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Suffocation in Epilepsy

SIR,—A year or two ago Dr. H. J. A. Longmore and I reported[1] the deaths of two of

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