sort of figure that surgical results must be balanced.

While late surgery in a younger person must take account of the risks of rebleeding in the very long term,³ this is obviously not so in the elderly, whose mean expectation of life is in any case limited. It is not valid to compare the treatment of an aneurysmal subarachnoid haemorrhage with that of a fractured hip, an intestinal obstruction, or a dissecting aneurysm in an old person. Patients with the latter conditions will die if left untreated. Most patients with a ruptured aneurysm who survive the first haemorrhage and the next few weeks will recover to resume a normal life without any surgical treatment.

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¹ Martindale, B V, and Garfield, J, *British Medical Journal*, 1978, **1**, 465.

² Alvord, E C, et al, *Archives of Neurology*, 1972, **27**, 273.

³ Kaste, M, and Troupp, M, *British Medical Journal*, 1978, **1**, 1310.

Antibiotic resistance in *Streptococcus pneumoniae* and *Haemophilus influenzae*

SIR,—May I be allowed to make an observation on the findings of the study group as published by Dr A J Howard and his colleagues (24 June, p 1657) after reporting my own experience in this health district?

To determine the changing pattern of antibiotic sensitivity in this locality a survey of all significant pathogens isolated in the first three months of 1977 and 1978 was undertaken. This was done by recording the results of routine disc tests and no attempt was made to find out the minimum inhibitory concentrations. The number of strains of the two organisms surveyed by the study group which were tested in these periods were as follows: *Haemophilus influenzae* 80 in 1977 and 116 in 1978; *Streptococcus pneumoniae* 33 in 1977 and 50 in 1978 (all in the first three months of each year). The percentages of resistant strains found are given in the table.

Percentage of antibiotic-resistant strains isolated in the first three months of 1977 and 1978

Antibiotics	<i>H influenzae</i>		<i>Str pneumoniae</i>	
	1977	1978	1977	1978
Ampicillin	0	2.5*	0	0
Tetracycline	0	0	9	6
Co-trimoxazole	0	4.3	0	0

*All were β -lactamase producers (total of three strains).

It can be seen from this table that the resistant figures found in this district in early 1977 were not similar to the national average of findings from 20 other laboratories as reported by the study group. Moreover, there were wide variations in the percentages of resistant strains found in the 20 different laboratories and only a very few matched with the national average. The percentages of tetracycline-resistant *Str pneumoniae* and ampicillin-resistant *H influenzae* strains from Nottingham (as mentioned in the report) were 14.8 and 1.1 respectively. Our findings from this district laboratory in the same period were 9 and 0 respectively. This difference is of much interest as the distance between these two laboratories is only about 15 miles

(24 km). In the early part of 1978 the figures in our laboratory had changed to 6 and 2.5 respectively. Thus the conclusion which I would draw is that it is good to know the national average, but it is of limited practical value because of variations from district to district and year to year. The clinicians should be better guided by the local microbiologist.

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Costs in perspective

SIR,—Your leading article "Treatment with bile acids" (29 July, p 309) refers to pharmaceutical treatment with an "expensive new agent" costing about £1 a day. I wonder how many of your readers realise that an average day's stay in an acute hospital bed now costs more than 30 times as much? Will we ever see the relatively low price of medicines in perspective against the very high costs of hospital care?

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A numbers game: understanding normal standards

SIR,—Your leading article (24 June, p 1651) is a useful reminder of some of the factors which should be considered in the assessment of results of laboratory or other tests. Frequently factors which may influence the results obtained for a particular sample, including techniques of collection and analysis and other factors that may influence the specimen before it can be obtained, are completely ignored.

Under clinical conditions a doctor may consider a result in the light of the patient's sex and possibly therapy, but rarely will the multitude of other factors, including time of day, biological rhythm, diet, or exercise, be considered. It is important to point out, particularly to medical students at a time when more emphasis seems to be placed on examination of results than examination of patients, that correct interpretation of "values of x" should be based on both an appreciation of the significance of altered levels of "x" and an understanding of the extraneous factors which may influence the results. Furthermore, it may not be adequate to compare the "level for x" with an inappropriate reference range, which may take no account of either the variations of different measuring techniques or the individual's age, sex, or race. The significance of a result may be obscured by the fact that it lies inside the reference range and may be appreciated more fully when related back to the individual. Reference ranges may be constructed using "normal" people who are neither ill nor particularly healthy, and special consideration may be necessary when a fit individual (for example, an athlete) consults his doctor.

Our own work, a longitudinal study of intensively trained competitive swimmers, shows that the haematological characteristics of such individuals vary within only very narrow ranges compared with the wide normal ranges expressed in standard haematological reference books and used in clinical

practice. Small changes of the values for an individual away from his normal range, which may adversely affect his performance, may not easily be recognised. If long-term monitoring is envisaged or required personal profiles need to be developed for particular individuals. Using such personal normal standards subtle changes may be detected and assessed more easily at an early stage.

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Swaddling and congenital dislocation of the hip

SIR,—A recent article in the *Sunday Times* (16 July) described the use of swaddling and a swaddling board by a child psychologist in the treatment of hyperactive babies. From the orthopaedic standpoint, this is absolutely contraindicated^{1,2} owing to the detrimental effects of splinting the hip in flexion and adduction on the development of the young hip.³

The incidence of congenital dislocation of the hip has been well established^{4,5} and runs at approximately 1.5 to 1.7 per 1000 live births—that is, an incidence of between 0.1 and 0.2%. As the article mentioned the Navajo Indians I feel one ought to quote the incidence of congenital dislocated hip in that population. It again has been well established⁶ and is in excess of 3%. Other communities where swaddling is practised, such as northern Italy and Germany, have a similarly increased incidence of congenital dislocation of the hip.

I would therefore make a plea that swaddling be completely abandoned and rejected. I am sure your readers are only too well aware that the orthopaedic work load is quite heavy enough without any help from the child psychologist.

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¹ Apley, A G, *A System of Orthopaedics and Fractures*, 5th edn. London, Butterworth, 1977.

² Salter, R B, *Textbook of Disorders and Injuries of the Musculoskeletal System*. Baltimore, Williams and Wilkins, 1970.

³ Salter, R B, in *Modern Trends in Orthopaedics*, No 5, ed W B Graham. New York, Appleton-Century-Crofts, 1967.

⁴ Barlow, T G, *Journal of Bone and Joint Surgery*, 1962, **44B**, 292.

⁵ Rosen, S, *Journal of Bone and Joint Surgery*, 1962, **44B**, 284.

⁶ Pemberton, P A, *Journal of Bone and Joint Surgery*, 1965, **47A**, 65.

Propranolol in black hypertensives

SIR,—In 1968 Dr Gerald Humphreys and I published in the *BMJ* a paper entitled "Ineffectiveness of propranolol in hypertensive Jamaicans."¹ I was slightly surprised to find a reply to it from Dr G A C Grell (29 July, p 358) appearing some 10 years later in your columns. However, I must accept all constructive criticism, however delayed, as valid.

Briefly, back in 1968 (in the early days of propranolol) Humphreys and I did a double-blind trial in which we were unable to find any hypotensive effect in Jamaicans. We were as bewildered then as to the mechanism of