you say in your leading article (24 May, p 1240), but absolutely vital. In fact, high-titre antibodies to pseudomonas, in particular to exotoxin A (and lipid A), provide very good protection even in patients who are neutropenic or who have serious underlying diseases, as reported by Pollack and Young.¹ Why was this essential reference not quoted? Taken in conjunction with the vaccine production work of Jones *et al*² it really is the promise for the future. Similar principles apply to other Gram-negative infections.³

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¹ Pollack M, Young LS. *J Clin Invest* 1979;63:276-86.
² Jones RJ, Roe EA, Gupta JL. *Lancet* 1979;ii:977-83.
³ Wardle EN. *Br J Hosp Med* 1979;21:223-31.

Distinguishing direct and indirect inguinal hernias

SIR,—If Professor N L Browse (24 May, p 1270) finds it necessary to employ all the signs used traditionally to distinguish a direct from an indirect inguinal hernia in order to exclude other causes of a swelling in the groin, so be it. It is disheartening, however, that he should claim justification for guesswork. Our point (12 April, p 1039) is that as the distinction between indirect and direct hernias is fallible and as "from the practical point of view this differentiation is quite irrelevant"¹ there is little to be said for elaborating the diagnosis beyond that of an inguinal hernia.

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¹ Browse NL. *Symptoms and signs of surgical disease*. London: Arnold, 1978.

The teaching of anatomy

SIR,—Mr S Mottershead has written a most interesting personal paper on the teaching of anatomy (31 May, p 1306). I hope I may add rheumatologists to neurologists and orthopaedic surgeons as possessing a reasonable amount of the anatomical knowledge which is essential for working out the causes of pain around the shoulder joint. He has certainly used his knowledge to explain the problem of the young woman with weakness of the trapezius muscle and save her from unnecessary surgery. I think it likely, however, that her symptoms were due to a post-infectious neuropathy affecting the spinal accessory nerve¹ and that recovery was unrelated to physiotherapy.

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¹ Cyriax J. *Textbook of orthopaedic medicine*, vol 1, 7th ed. London: Baillière Tindall, 1978:233.

Is it really a cerebrovascular accident?

SIR,—In these days of metrication, SI units, computerisation of records, and other sophistications in medicine, I am concerned at the total absence of scientific accuracy in the use of "cerebrovascular accident" as a cause of death. It commonly appears on death

certificates and cremation forms. Although the condition may be spontaneous and unexpected it is certainly not an accident. The profession know what is implied but relatives do not. On several occasions I have been asked, "Does it mean that my parent fell out of bed while in hospital?" Admittedly it may be difficult to differentiate between cerebral haemorrhage and cerebral infarction, but is there any objection to the simple and scientifically honest diagnosis of "acute cerebrovascular disease"? Let us stop perpetuating the misuse of the word "accident" when there is no evidence of trauma.

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Research and risk

SIR,—Your leading article (14 June, p 1391) draws together nicely several strands in the current debate on medical research. You question how typical are the members of the Association of Researchers in Medical Sciences, and whether medically or scientifically qualified. *The Case for Careers in Medical Research* was at pains to point out that in terms of age distribution, seniority, and employment history the members are representative of contract research staff in biomedicine and in all disciplines, in individual institutions and nationally. Whether their opinions are typical is a more difficult question; but the fact that the membership of ARMS has considerably more than doubled since the published analysis was done (without changing the findings of that analysis) and now comprises about 10% of all contract researchers in biomedicine in universities, medical schools, and the Health Service suggests that they are representative of at least a considerable minority. The problem, though not ARMS membership, is confined to non-medical staff, since medical practitioners have multiple and well-remunerated alternative career pathways, in which they are in demand.

The recommendations of the CIBA group and of ARMS are not mutually exclusive or opposed but rather obverse and reverse. Although not part of ARMS policy, it is felt that "mad" money is an indispensable element in research support. ARMS's analysis and proposals are set out in a forthcoming publication—*Detailed Proposals*. The key element in these proposals covering research staff organisation is the divorce of duration of contracts of employment from the duration of research grants. Tenure does not mean a researcher studying only one project during 40 years; a small donation from a local charity group does not mean a researcher being given the Noble Order of the Boot after nine months. If this principle is accepted by employers, and the principle of possible periodic redeployment accepted by researchers, it should be possible to institute a strong category of career researchers recruited on a proper progression of training, probation, and tenure, with suitable selection procedures and possibilities of progression from one stage to the next. Further, flexibility of funding should thereby be retained or enhanced, with the confidence that the ideas funded, whether mainstream or wayout, will be properly investigated. Finally, the possibility is raised of being able to arrange limited periods when clinical or particularly

teaching staff might be able to devote themselves full time to research, as so many claim they wish to do so.

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Epidemiology and clinical practice

SIR,—Public health doctors have always been proud of a historic tradition, extending over 150 years, of using simple facts and figures in a logical manner to demonstrate very elegantly, time and again, solutions to very complex problems. But the focus of attention was largely control of outbreaks of infection and environmental problems with essentially an engineering solution. Profound changes have taken place in the pattern of morbidity and mortality in the twentieth century. Newer diseases are dependent on less environmental causes and more on personal characteristics, often identified either by clinical observation or measured in the laboratory.

Association of clinical practice and epidemiology has resulted in spectacular medical discoveries not unlike those of the public health in the nineteenth century. I therefore find it distressing to note it has even become necessary for Professor E D Acheson and colleagues (26 April, p 1122) to point out the obvious and make a plea for epidemiology to continue and develop in clinical practice as a recognised entity. It is in the very nature of the job of a community physician to collect statistics and try to draw conclusions from them just as it is the job of an accountant at the end of the day; but whether that makes all community physicians epidemiologists or accountants economists must surely be stretching the definitions of epidemiology and economics.

I believe that the specialty of epidemiology is not the prerogative of community medicine (though they generally need to have a greater appreciation of it than others). It is just one of the fields in which a community physician is more likely to be interested as a necessary tool in his job.

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Non-fatal lung disease due to inhalation of nebulised paraquat

SIR,—I would like to comment on the case reported in the *BMJ* of 29 March (p 902) of alleged non-fatal lung disease from inhalation of nebulised paraquat.

On the basis mainly of pulmonary function tests the patient was diagnosed as having interstitial lung damage. Such a diagnosis based on these results alone seems to be beyond the limits of the tests, especially as her chest radiograph was clear, she was obese with a wheezy chest, no transfer factor was available, and there were no previous recordings with which to compare those taken two months after the incident. It is understandable that clinicians faced with pulmonary function impairment should relate these effects to the spraying incident. However, there does not appear to be any real evidence that the lady was significantly exposed to paraquat. The