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### Management of acute stroke

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transferred and not transferred? This would be of great value to many medical and geriatric services who do not have the facilities of a stroke unit and who regularly indulge in transferring stroke patients, albeit at times it seems in a wholly random fashion.

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\*.\*We sent this letter to Dr W M Garraway and his colleagues, whose reply is printed below.—Ed, *BMJ*.

SIR,—The limitations inherent in conducting controlled trials of methods of providing health services, which we refer to in our paper, mean that we have no information on the criteria which were used to transfer a selected group of patients from medical units during the acute phase of rehabilitation. But we have been able to examine the results of standard clinical tests which were designed to predict outcome following acute stroke, and which will form the subject of a future publication.

No difference was found in the pattern of neurological impairment present in the transferred group compared with those patients remaining in medical units throughout. Therefore it may not be surprising that there was no difference in outcome between the two groups. Transferring stroke patients from medical units for further rehabilitation appears to be a common practice in Britain, and on the basis of our results these transfers should be arranged earlier rather than later if the full benefits of intensive therapy are to be realised. But, as Dr Powell correctly infers, conclusive evidence to support this statement can come only from further randomised controlled trials.

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### Preventing infection in laboratories

SIR,—As we were not consulted on the drafting of the original report perhaps you will permit us to make several observations on the article by Sir James Howie and Mr C H Collins (19 April, p 1071) entitled "The Howie Code for preventing infection in clinical laboratories: comments on some general criticisms and specific complaints."

It is important to realise that the code relates to clinical laboratories, a point which is often not appreciated by authorities responsible for ensuring safety standards in non-clinical laboratories. While this does not imply that the code is irrelevant to non-clinical laboratories, it does mean that its interpretation in these non-clinical situations needs careful consideration and possible modification to meet local requirements.

In particular, we have in mind the use of *Salmonella typhi* in the Rideal Walker test for disinfectants. While we would not disagree with the general comments regarding the dangers of *Salmonella typhi* as isolated in a clinical situation we do believe that the *Salmonella* strain NCTC 786 as used in the

Rideal Walker test presents a different picture. The strain is a virulence-negative variant and while this is not positive proof of the non-virulence of the organism it does differentiate it from the normal virulent strains. The strain has been in use in members' laboratories from as early as 1904 with well over 450 000 Rideal-Walker tests conducted during this time, involving more than 200 laboratory personnel. There is no recorded case of infection resulting from the use of this strain during this period. These facts speak for themselves and need to be taken into account in reacting to the use of *Salmonella typhi* NCTC 786 in the Rideal-Walker test.

All too often the applicability of *Salmonella typhi* NCTC 786 to the testing of modern disinfectants clouds the issue of the safety aspect. Manufacturers of disinfectants sell products on an international basis and the Rideal-Walker test forms an integral part of this operation. Naturally, the imposition of excessive restrictions will place UK companies in an unfavourable competitive position.

In seeking to clarify the situation with regard to *Salmonella typhi* NCTC 786 we support those who oppose the unnecessary use of the Rideal-Walker technique using *Salmonella typhi*—for instance, for teaching purposes or evaluating disinfectants for hospital use, where because of the readily availability of *Salmonella* cultures alternatives to strain NCTC 786 may be inadvertently used.

While we agree with the Howie Code's recommendation that the use of exhaust protective cabinets (class 1) is necessary for most category B pathogens, which cause airborne infections, we do not agree that it is appropriate for organisms causing infection by the alimentary route such as *Salmonella typhi*. To cover this case the association had drawn up its own code of practice for the handling of *Salmonella typhi* NCTC 786 in members' laboratories.

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### Why has Swann failed?

SIR,—In your leading article (17 May, p 1195) you state that legislation enacted as a consequence of the Swann Report has failed to prevent the emergence of multiple drug resistance in *Salmonella typhimurium* in bovines in Britain despite the fact that it was precisely intended to do so. The legislation was not designed to do this. Its purpose was to stop the feeding of pigs and table chickens continuously on diets containing antibiotics that are commonly used in human and veterinary medicine, because the practice had given rise to enormous populations of antibiotic-resistant bacteria in these animals. The feeding of such diets to bovines in Britain had never been permitted.

The Swann legislation, in essence, has now been adopted by many other countries and I think Britain can take some pleasure in having initiated it.

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SIR,—In the excellent leading article "Why has Swann failed?" (17 May, p 1195) I was surprised that attention was not directed also

to the current agricultural practice of spreading raw fluid slurry on the fields. This practice could be a possible source for dissemination of these organisms.

If the fluid comes from stock some of which is infected with or is a carrier of salmonella it may reasonably be supposed that when the field so treated is next grazed the grazing stock are at risk of infection. It must also place anybody who may have contact either with the fluid or with the surface of the field at some risk of infection. This is less likely to occur if all the manure is allowed to rot down fully to compost in a dung heap, for the simple reason that the heat of a well-made heap will inhibit if not destroy bacteria. The broadcasting of fluid slurry in this way is also socially unacceptable to those unfortunate enough to live to leeward of the fields so treated.

The epidemiology, both animal and human, described in your article suggests that this practice requires careful scientific study.

A IAN L MAITLAND

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### Possible cancer hazard associated with 5-methoxypsoralen in suntan preparation

SIR,—With regard to the current discussion (3 November, p 1144; 1 March, p 648; 29 March, p 940) on the safety of cosmetics containing 5-methoxypsoralen (bergapten) I would like to add a number of points.

(1) Although the current controversy concerns the suntanning aids containing bergamot oil, they are not the only cosmetics involved. Of a total of 108 perfumes investigated, 57.4% contained bergapten in concentrations ranging from 0.00004 to 0.0108%.<sup>1</sup> Perfumes are therefore likely to produce phototoxicity unless the psoralens are removed or the content of 5-methoxypsoralen reduced to 0.001%.<sup>2</sup> Subjects known to be sensitive to small concentrations of 5-methoxypsoralen and patients suffering from poikiloderma of Civatte should therefore be warned about all these preparations.<sup>1</sup>

(2) The suntanning aids of current concern contain up to 0.003% (30 ppm) (Chefaro Proprietaries Ltd, personal communication). The amount of 5-methoxypsoralen necessary for the achievement of an enhanced tan has, however, been reported to exceed 1%.<sup>3</sup>

(3) Not only is there a possible risk of human carcinogenicity associated with the use of methoxypsoralens in combination with ultraviolet A light, but also there may be as yet unknown effects on the microbial ecology of human skin. Methoxypsoralens are known to induce mutations in various bacteria and fungi.<sup>4</sup> Any genetic changes in skin organisms may be clinically important with regard, for example, to acquisition and transfer of antibiotic resistance.<sup>5</sup>

(4) Many substances are photosensitisers. They include several fluorescent dyes (erythrosin B), some metabolites (for example, bilirubin and porphyrins), and drugs like phenothiazines, tetracyclines, sulphonamides, thiazides, nalidixic acid, frusemide, quinine, and anthracene.<sup>6</sup> The topical application therefore of preparations containing another phototoxic compound, 5-methoxypsoralen, could lead to an increased photosensitivity in individuals already sensitised to solar radiation.

(5) All tanning aids contain sunscreens, which are substances designed to prevent