and addresses of the people who have information about them. The newly established Cochrane Centre in Baltimore, in collaboration with the United States National Institutes of Health, is coordinating the creation of a register of randomised controlled trials, which will be as comprehensive as possible.[7] The international Cochrane Collaboration hopes that pharmaceutical companies will contribute details of all randomised controlled trials that they have sponsored to this register. Most companies would gain little real commercial advantage by keeping old results under wraps, but all would benefit from access to the whole range of previous work sponsored by the industry.

A simple way of achieving comprehensive access to trial data in the future would be to enter all clinical trials in a register at inception.[8] Such registers already exist for trials in some areas of medicine, and more are needed. In Britain the information strategy that is part of the NHS Research and Development Programme envisages a register of all research projects undertaken in the NHS. The regional directors of research and development will be responsible for creating and maintaining the register, perhaps with the help of the local research ethics committees. In the United States a similar initiative is being considered by the National Institutes of Health.

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Managing stroke: the way forward

Organised stroke care saves lives

The greatest recent leap forward in managing stroke has not been a novel neuroprotective agent or a better method of imaging ischaemic brain but the (distinctly less glamorous) publication of a formal overview showing that organised stroke care saves lives.[1]

Over the past decade a series of randomised trials have compared organised stroke care (mainly in stroke units or by stroke teams) with routine care (usually in general medical wards). Each trial suggested that a systematic approach to the care of patients with acute stroke led to better short term and long term outcome, though none was large enough to convince on its own. A formal statistical overview of these trials has clarified the position substantially: organised stroke care significantly reduced early death by more than a quarter. Long term mortality was also significantly reduced (the odds of death at 12 months was 21% lower in patients in stroke units).[1] Preliminary analyses of the effects on dependency at about six months after stroke, the need for long term institutional care, and the length of hospital stay also suggested that organised care provided in the acute phase of stroke produced better results than routine management (P Langhorne, personal communication).

These results have important implications for health care providers. Several of the more recent trials were conducted in Scandinavian countries, and, perhaps unsurprisingly, doctors and hospital administrators in these countries had started to set up stroke units and organised systems of stroke care even before the results of this overview were published. For example, in Norway most district general hospitals now have a stroke unit or some organised system of stroke care (P Sandset, personal communication). Other developed countries are following suit at varying speeds.

Which of the many components of an organised system of stroke care could have led to the improved outcome has been vigorously debated, and there is no consensus on what constitutes an "ideal" stroke unit. Larger, multicentre trials testing individual parts of the system of care will be needed to dissect out which components contribute most to the benefits and which are the most cost effective.

Difficulties with funding have been evident from the early 1980s. The first stroke units were often set up—quite expensively—with a research grant or substantial funding from the hospital, and at the end of the research grant (or when their special funding ran out) many units succumbed to financial pressures.

Any organised stroke service must be sustainable. Any hospital wanting to set up a stroke service should begin by reviewing how patients with stroke are currently managed and how much this routine care costs. A service can often be established by reorganisation of what already exists without costing much more. Currently in Britain, partly as a result of the publication of *The Health of the Nation*, authorities purchasing health care are paying much greater attention to stroke services, which will undoubtedly stimulate the provision of better stroke care in British hospitals. Quite reasonably, purchasers will also be looking for cost effective stroke services; the current data strongly suggest effectiveness, but more data will be needed to clarify cost effectiveness.

In contrast to the clear evidence that organised stroke care saves lives, no convincing evidence has emerged from randomised trials that any specific form of medical treatment is effective in the acute phase of stroke.[2] Fortunately, there are now many randomised trials testing different forms of medical treatment.

As ischaemic stroke accounts for about four out of five strokes most of the trials are focusing on strategies to reduce the damaging effects of cerebral ischaemia. All treatments have a common goal in this respect—to reduce the volume of brain damaged by ischaemia, thereby reducing the degree of neurological impairment. Less neurological deficit should lead to fewer early deaths and, more importantly, less disability and handicap in survivors.

The most dramatic way of achieving this could be with thrombolytic treatment for early cerebral reperfusion. An overview of the existing trials suggested that this treatment was promising but might have substantial hazards too.[3] Several moderately sized randomised trials of fibrinolytic treatment (mainly with streptokinase or tissue plasminogen activator) in the acute phase of ischaemic stroke are now under way in Europe, Australia, and North America. Antithrombotic treatment (with aspirin or heparin, or both), though simpler and probably less risky, is much more widely

applicable.[4] The international stroke trial plans to recruit about 20 000 patients from 500-600 hospitals in 40 countries worldwide and should be reporting its results in 1996.

The pharmaceutical industry is investing large amounts of money in developing and testing several new compounds, which are now entering clinical trials in patients with acute stroke. These compounds have a common aim: to protect neurones from the damaging effects of ischaemia by inhibiting excitatory amino acid neurotransmitters such as glutamate, by reducing the influx of calcium, and by reducing concentrations of free radicals. Other neuroprotective agents such as magnesium also seem promising.

In future, if they are proved to be safe and effective, some of the simpler treatments may be offered routinely to most patients with acute stroke. Treatments with a higher risk of complications may be offered only to a selected few. Whatever the results of the current trials of medical treatment, one thing is certain: hospitals must act now to develop organised systems of care for patients with acute stroke.

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Repetitive strain injury

Does not exist as a separate medical condition

Judge Prosser's recent decision in a British court that repetitive strain injury does not exist as a separate medical condition is supported by the overwhelming bulk of carefully conducted studies. Arm pain in the workplace (or any other place) has been around for a long time and will continue to be seen. The real issue is whether it is causally related to particular tasks and, specifically, whether there is any evidence that repetitive movement actually "injures" the body.

Those of us who have watched the debate over repetitive strain injury have seen the same issues raised first in Australia, then in America, and now in Britain. Auberon Waugh's prophesy, made seven years ago, that this condition would spread to Britain[1] unfortunately turns out to be right. This has occurred despite an enormous effort in Australia to get rid of the term repetitive strain injury, with groups such as the Royal Australasian College of Physicians canvassing to reduce the emphasis on "injury" and describe the condition for what it really is—a pain syndrome.[2]

In Australia the epidemic surfaced in the early 1980s and peaked around 1986. During those years the idea of "injury" was emphasised, spawning a whole range of new consultancies in an attempt to cope with the problem. Doctors (both physicians and surgeons), allied health professionals, and, in particular, designers of ergonomic furniture all cashed in on the condition. Gone are the days when you can equip an office with a simple chair and a desk. This equipment must be ergonomically designed. There is no evidence that using ergonomically designed furniture has altered the incidence of arm or any other pain in the workplace, yet these changes have been introduced at enormous cost and with little evaluation. Of greater importance are the psychosocial aspects of the workplace—the need to provide appropriate work breaks and to keep stress to a minimum.

Very few properly controlled epidemiological studies have been carried out on arm pain in the workplace, but those that have would suggest very little, if any, relation with the type of computer equipment used or the type of work performed. Indeed, a study of arm pain in the workplace at Telecom Australia showed an inverse relation between the number of keyboard strokes performed and the incidence of the condition.[3]

None of this is to deny that pain occurs in the workplace, but the association of that pain with any particular type of work has not been clearly proved. Hadler has carefully explained the difficulties inherent in assessing some of these studies when up to 9% of a population have suffered pain or discomfort in the arm in the preceding month.[4] As Ferguson stated in an editorial in the *Medical Journal of Australia*, "With hindsight, the gigantic and costly epidemic called repetitive strain injury (RSI) can be seen as a complex psychosocial phenomenon with elements of mass hysteria that was superimposed on a base of widespread discomfort, fatigue, and morbidity. The epidemic, to which the medical and legal professions, management, unions, governments, and media have all contributed, is now waning but endemic work related musculoskeletal syndromes remain."[5]

Some argue that simply discussing the terminology is facile, yet reducing the emphasis on the injury component of repetitive strain injury was important in helping Australians cope with the problem. Repetitive strain injury has become an emotive term and is patently incorrect: the term implies a repetitive injury (as opposed simply to repetitive motion) and damage to tissues, which has never been shown in this condition. Alternative terms, such as occupational overuse syndrome, also promote social iatrogenesis because, in the context of workers' compensation laws, any diagnosis that includes the term "occupational" is likely to encourage a worker to claim for disability compensation.[6]

Although Judge Prosser's judgement will undoubtedly be criticised, he will have performed a good service if his decision discourages people from seeking damages in the courts. Instead workers, employers, and their advisers should pay attention to workplace factors, active rehabilitation, preventing the use of splinting (which promotes only reflex sympathetic dystrophy), denying compensation, and removing the emphasis on injury. As a result of paying attention to these factors the incidence of arm pain in the workplace in Australia has fallen dramatically.

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