

previously for a more comprehensive rehabilitation approach with greater emphasis on psychosocial functioning.<sup>8</sup> This might be started in hospital, but its full realisation requires a community orientation.

### Conclusion

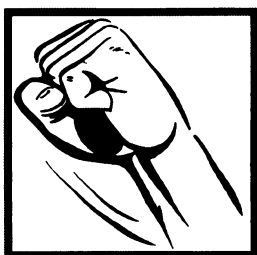
Hospital based care creates insoluble difficulties in addressing the key patient issues of long term treatment, handicap, and psychosocial functioning. Even in the best hospital centres, with patients carefully selected for the best recovery potential, the outcome in the medium term is poor.<sup>9</sup> Few districts currently provide stroke services that respond to the umbrella term "career in stroke disability." The shortfall is

large, and although community rehabilitation is in its infancy, it has the best potential to fill this gap.

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## Only hospitals can provide the required skills

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No effective treatment exists for acute stroke.<sup>1</sup> The only consistent evidence derived from randomised controlled trials is that management on a specialist stroke unit reduces both mortality and morbidity.<sup>2</sup> The key feature of these trials is that coordinated multidisciplinary care is better than disorganised care. The question to be debated is whether such coordinated multidisciplinary care is better provided in the community.

### Coordination is a problem

Unfortunately both experience and formal clinical studies have taught us that coordinated rehabilitation is lacking in the community. This is confirmed by the nature of requests for information and support made to the Stroke Association.<sup>3</sup> Coordinated care is possible in the community but difficult in practice. The professions concerned have different employers, patterns of referral, and work bases. Community nursing services offer significant input but tend to concentrate on the more disabled and those least likely to change. They provide a care service but not rehabilitation. Domiciliary physiotherapy is attractive, but the service is provided in only a few areas. Therapists have to deal with a varied caseload and many lack specialist expertise. Studies of the benefits of domiciliary physiotherapy and its cost effectiveness have produced conflicting results.<sup>4</sup> Occupational therapy is available more often but consists of providing aids and adaptations rather than therapy.<sup>5</sup> Even when a community rehabilitation service was provided it did not reduce admissions to hospital.<sup>6</sup>

Surveys of care after hospital discharge indicate lack of coordination, underreferral to support services, and no review of progress.<sup>7</sup> Effective coordination requires general practitioners to play a central part, but most have neither the training nor the time to take on the burden of yet another specialist service. They would be required to request, deploy, and maintain continued contact with other professionals over weeks or months. Whereas, at present many patients do not have contact with their general practitioner after discharge from hospital.<sup>7</sup> If the coordination of care is the crucial element to the effectiveness of rehabilitation, stroke is not better managed in the community.

patients who are admitted to specialised units.<sup>2</sup> Indredavik *et al* attributed improved outcome in the acute phase to the standardised programme for diagnostic evaluation, acute treatment, and early intensive rehabilitation.<sup>8</sup> The programme consisted of standardised systematic observation, and most patients had a computed tomography. Those with embolic infarction were treated with anticoagulants. Whether antithrombotic therapy is likely to have contributed to the difference in outcome will be clarified when the results of the international stroke trial become available. Most patients are admitted to hospital for nursing care, but diagnosis can be a contributory factor.<sup>9</sup> These functions can be served most effectively by a specialist unit.

Indredavik *et al* also proposed that early intensive rehabilitation contributed to the better outcome of patients in stroke units.<sup>8</sup> This rehabilitation usually consists of positioning patients to prevent the development of spasticity and mobilisation to facilitate long term recovery. These are specialist skills and not in the domain of community nursing services. Community physiotherapy services do not provide early intensive treatment. Further skills available in hospital include the multidisciplinary assessment of swallowing problems, identification of cognitive deficits, appraisal of mood disorders, and initiating secondary prevention strategies.

Other studies have shown the benefit of transferring patients to a specialised unit for rehabilitation alone. Kalra *et al* compared patients randomised to a stroke unit with those on general medical wards.<sup>10</sup> Patients on the stroke unit had a better functional outcome with reduced hospital stay without increasing therapy time. This suggests the content of the rehabilitation programme is important rather than the quantity. Early medical treatments, specialist rehabilitation, coordinated care after discharge, and secondary prevention require admission to hospital. It seems unlikely these could be achieved in the community.

### Evaluation of new treatments

Community services should be improved, but it is important that this is done within the context of randomised controlled trials so that the costs and benefits are known. If coordinated multidisciplinary care by specialists is the key to effective management and it is available in some hospitals, it seems better to capitalise on what we have and to develop the stroke units. Such multidisciplinary units act as a central

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### Stroke units work

In contrast, it is apparent from controlled trials that morbidity and mortality are reduced in those stroke

## Commentary: both hospital and community services are needed

Although stroke is common few properly designed studies have tested the value of different approaches to management. But acute stroke units have been shown to confer benefit, and the argument in favour of having an acute stroke unit in every hospital seems to me to be compelling. This is not to say that there should not be equally well organised stroke services in the community. We do not yet have data to indicate that a community based stroke rehabilitation service would be effective. But given the huge cost of stroke patients in both financial and social terms such a study seems long overdue. The likely outcome is that there should be a continuum beginning in hospital and then following through when the patient goes home. In the meantime it is important to recognise that some patients are more likely to benefit from rehabilitation than others and resources should be directed at those with the best prognosis.—PETER C RUBIN, *professor of therapeutics, University of Nottingham*

focus for the training of medical and non-medical staff and for the development and evaluation of new techniques. Unless stroke care is coordinated from a single centre we will not be able to evaluate new

treatments when they become available. Only by concentrating clinical skills in one area can stroke care be effectively coordinated, and only by concentrating stroke patients in one area will appreciable advances be made in knowledge and clinical practice.

Stroke units have been shown to provide the most effective service. They should coordinate stroke management until we have a better and cheaper alternative. Without a considerable investment of time and effort, community services are incapable of mounting any form of comprehensive coordinated programme. If it does not become routine policy for stroke patients to be managed in specialist units the quality of stroke management will inevitably decline.

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## Medicine in Europe

### Electronic health records: the European scene

Dipak Kalra

*This is the 11th in an intermittent series of articles looking at medical issues in Europe*

Caring for patients' health problems relies increasingly on sharing information between clinical departments and disciplines and with managers. The medical record of the future will need to provide a flexible and shareable framework for recording and analysing the consultation process. The advanced informatics in medicine (AIM) programme seeks to encourage research and development in telemedicine in areas that are beyond the scope of any one country. It includes many European projects attempting to define the best storage and transmission formats for such diverse data types as laboratory results, bio-signals, x ray images, and photographs, and in clinical specialties varying from intensive care to medicine for elderly people. One example, the good European health record project, is developing a model architecture for computerised health records across Europe that is capable of operating on a wide variety of computer hardwares and will also be able to communicate with many different information systems. The ultimate European health record will be comprehensive and medicolegally acceptable across clinical domains, hold all data types, and be automatically translated between languages.

In the future, a French patient on holiday could walk into your consulting room and present you with an optically printed card containing his entire medical file, which is written in French and uses ICD-10 classification terms. Sitting at your consulting room desk, using an updated version of your current com-

puter system, you place his card into your card reader. Your system presents to you (with familiar screens) the file in English and with matched Read terms. You will be able to see the medical summary created by your French counterpart, but your system will also have scanned the record and created its own summary in your favourite predetermined way. If you need to see a recent radiograph on the patient, your system can dial up his district hospital in France, and the radiograph can be shown on screen. You make a record of the consultation in English, confident that his own doctor can later read it in French (and that an appropriate bill will be sent directly to the insurer). You will copy your consultation onto his optical card and retain a copy of it or even his entire medical file in your system's hard disk for medicolegal eventualities.

This vision is not farfetched. Its components are being developed in Britain and the rest of Europe. There are many initiatives in the world of medical informatics within the United Kingdom and across Europe which will help to unlock the true potential of the computer in the clinical domain.

#### Britain, 1994

Successful and creative information management is rapidly becoming essential to developments within the NHS. As hospitals and general practice become more complex, the computerisation of many administrative processes is vital for strategic planning and resource management. The devolution of local budgetary

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