THE TREATMENT OF STROKE

KING'S FUND FORUM CONSENSUS STATEMENT

The fifth King's Fund Forum was held in London 27-28-29 June 1988. A panel of twelve listened to evidence from experts in public sessions attended by 250 people - including professionals from many fields as well as public and press. After closed sessions the panel discussed their report with the audience and the panel's consensus statement was then presented at a press conference.

The panel comprised: Anthony Clare (chairman), Mike Drummond, Annabel Ferriman, Bryan Heiser, Norah Lamb, Jill Pitkeathley, Ian Russell, Simon Street, Raymond Tallis, John Todd, Catherine van de Ven, Charles Warlow.

Invited experts presenting evidence were: Mr R Anderson, Ms A Ashburn, Ms J Askham, Dr D Bainton, Dr J Bradshaw, Prof J C Brocklehurst, Dr R Collins, Dr C Davidson, Dr P Enderby, Dr A House, Ms M Hudson, Dr R Langton Hewer, Dr N Lincoln, Ms F Nouri, Ms P Oswin, Prof M S J Pathy, Dr F Rose, Dr P Sandercock, Mr D Smith, Ms J Townsend, Dr D Wade.

Every five minutes someone in the United Kingdom has a stroke. It is the cause of one in eight deaths and constitutes a formidable burden of disability and misery for patients, their carers and the wider community. Half of all first strokes occur in individuals aged 75 and over and, given the continued rise in the number of very elderly people in the population, stroke can be expected to remain a significant source of suffering for the foreseeable future. Despite these facts and their financial implications - the average Health District in England and Wales spends at least £3 million on stroke services each year - policy makers, professionals and educators do not regard it as a high priority. There is no clear policy at district, regional or national level regarding the appropriate planning, organisation, implementation and evaluation of services for stroke patients and their carers. Such services as are provided in hospital, primary care and the community appear haphazard, fragmented and poorly tailored to patient needs and there is a striking lack of convincing data on the effectiveness of widely used medical, psychological and specific rehabilitative treatments. In the light of these deficiencies, this consensus conference was set up to establish the appropriate responses to stroke in the acute phase and up to six months after the event. Some of our recommendations will continue to be relevant at later stages.

Question 1

What are the responsibilities of service providers for patients and their carers?

The chief service providers for stroke patients are health and local authorities, family practitioners and voluntary organisations. A typical health district can expect to be providing care for about 1500 stroke survivors at any one time. It is essential that service providers ensure that these people and their families receive integrated and individualised care.

Each health authority should have a *district stroke policy*, laying down standards, identifying services and allocating resources. A named individual should be made accountable for its implementation and monitoring and for coordination with local and other authorities.

A stroke service should aim to achieve an accurate initial diagnosis, rapid identification of those needing specific treatment, skilled and knowledgeable nursing care, an early assessment of the patient's disabilities and implementation of a multiprofessional care plan.

While there is no one model of good practice, it is recommended that *an integrated stroke service* should be developed. Such a service would develop a core team of nurses, therapists, social workers and doctors with expertise in meeting the needs of stroke patients and their carers. It would also provide a necessary focus for the education of doctors, nurses, and other professionals and could be a resource for information.

In-patients frequently suffer from being scattered throughout the hospital. In future they should be managed in one specific location. This approach would have the advantage of drawing together patients requiring similar treatment and rehabilitation and would facilitate the development of a mobile stroke team which could span hospital and community. It could also provide day and respite care. Different models along these lines should be established, properly resourced and evaluated.

However, a high proportion of stroke patients are never admitted to hospital while many who are admitted go in for social reasons. The district stroke policy should take into account the needs of those not admitted, together with their carers, many of whom are elderly themselves. It should also embrace patients in private and voluntary establishments.

There must be continuity of care between the hospital and community. This requires good liaison between health and local authorities at all levels. Patients should not be discharged until adequate preparation has been made for both the patient and carer. There should be realistic assessment of the carers' ability to look after the stroke patient before discharge is attempted. The carer should be given a genuine choice about arrangements. The patients and carers should be kept fully involved at all times. Some patients are currently spending longer periods in hospital than their clinical state warrants due to a shortage of appropriate facilities in the community. This is unacceptable.

Little information is given to patients and carers. All patients are entitled to a clear account of the nature and causes of their stroke, an honest discussion of the risks of recurrence, the speed and nature of recovery and possible complications and clear advice about the resumption of physical, social and sexual activity. This should be assisted but not replaced by a clear fact sheet about stroke in general and other written material. Such material should be available in more than one language, and possibly in audio-visual form. More information rather than less should be given, care should be taken not to hold back information unnecessarily and the importance of listening to patients and carers is emphasized. Doctors can be over-protective towards patients, leading to resentment and complaints of unnecessary secrecy.

Stroke patients should also be put in touch with voluntary organisations, such as stroke groups and the Chest, Heart and Stroke Association and carers with the Carers' National Association.

Where patients are not admitted to hospital, the GP has a key role in caring for the patients and in arranging any necessary diagnostic tests. After discharge, the onus is also on the GP to coordinate rehabilitation and continuing care services. If the GP does not undertake this personally, then he or she should nominate a key worker to undertake these responsibilities. The key worker should be easily available to the patient and carers. It is the role of the GP or key worker to fulfil the patient's information needs, as outlined above, although all professionals have a responsibility to communicate fully at all times.

The GP or key worker should arrange to see and re-assess the patient at regular intervals. At the very least, this will help to overcome the feelings of isolation and abandonment expressed by so many stroke patients and carers. It would also enable the GP to discover any further medical or social problems.

Question 2

For presumed stroke sufferers what has been shown to be of diagnostic value?

An accurate history and a careful examination, are paramount in the diagnosis of stroke. Tests should be directed to specific questions:

1) Has the patient had a stroke?

2) Is the stroke due to an infarct or haemorrhage?

3) Is the stroke a manifestation of an underlying disease which requires treatment in its own right?

4) Are there identifiable factors such as high blood pressure which, if treated, may reduce the chance of recurrence?

A neurological deficit of sudden onset in a patient who on clinical examination has signs compatible with a vascular lesion permits a confident diagnosis of stroke. In some cases, however, there may be an inadequate history (as in a patient who lives alone or who has impairment of consciousness). The differential diagnosis will then include other intracranial pathology and the various causes of coma.

Stroke may be a manifestation of an underlying disorder - common diseases such as diabetes, or rarer conditions such as cranial arteritis or infective endocarditis. The clinical features will direct suspicions but screening tests (see Table 1) should be undertaken routinely in all cases. A chest X-ray may also be required. These tests will also cover identifiable risk factors whose correction may be of benefit in preventing recurrence.

Table 1 - Routine Investigations in Stroke Patients

A full blood count (including platelets)
Erythrocyte sedimentation rate,
Urea and electrolytes
Glucose
Cholesterol
Syphilis serology
Sickling test (when appropriate)
Urinalysis
Electrocardiograph

The differentiation of haemorrhage from infarct is, under certain circumstances, critical. It is impossible to do this clinically and the best way of determining the type of stroke is a CT scan within two weeks. The indications for CT scanning are in Table 2.

Table 2 - Major Indications for CT Scanning

1. *Uncertain diagnosis of stroke*
2. *Current or contemplated anticoagulation/antiplatelet therapy*
3. *Cerebellar haematoma suspected*
4. *Possible carotid endarterectomy*
5. *Suspected subarachnoid haemorrhage*
6. *Young patient*

CT scanning can be undertaken as an outpatient investigation. There is a strong case for scanning the majority of patients who present with a presumptive stroke, excluding those in whom antiplatelet therapy is contra-indicated. The resources required to scan this large group of patients may well be outweighed by a reduction in recurrence of strokes, in myocardial infarcts, and in the associated costs of health care. At present only half of all health districts have a CT scanner. Nonetheless, local access to scanning facilities should be an essential part of a district stroke service.

Lumbar puncture should only be used where meningitis is suspected or where subarachnoid haemorrhage cannot be diagnosed by CT scanning. Isotope brain scanning is appropriate only when subdural haematoma has to be excluded and CT scanning is not available. Magnetic Resonance Imaging is a very sensitive method of imaging the brain, but it has not yet been proved to be of very great practical value in strokes. The use of angiography in an ischaemic stroke is usually linked to the intention to carry out a carotid endarterectomy. But ultrasound scanning as a preliminary screen will reduce this requirement. Echocardiography should be carried out where there is a strong clinical suspicion of cardiac embolic stroke and anticoagulation or other specific treatment is seriously considered.

Question 3a

What treatments have been shown to be effective in the first few days following a stroke?

No treatment has been shown conclusively to be effective in limiting the neuronal damage associated with stroke. Small randomised trials have suggested that some drugs (notably glycerol, naftidrofuryl and nimodipine) may be effective. There is insufficient evidence to justify these drugs outside large randomised trials.

Neurosurgery may be indicated in a few patients - those with a cerebellar haematoma or a haemorrhage due to aneurysm or arteriovenous malformation. A few strokes will be due to an underlying disease which should respond to treatment; for example cranial arteritis, myelomatosis, polycythaemia, thrombocytopenia or infective endocarditis. Care should be taken to avoid early complications of stroke including: chest infections and other causes of hypoxia, venous thromboembolism, urinary infections and incontinence, dehydration, constipation, pressure sores, falls and injuries, painful shoulder and spasticity.

Question 3b

What has been shown to reduce recurrence?

There is strong scientific evidence that antiplatelet therapy for ischaemic strokes reduces recurrence. We recommend low dose aspirin (150-300 mgs daily). In the absence of CT scanning, used to exclude intracerebral haemorrhage, prophylactic aspirin may still carry a favourable benefit-risk ratio but cannot be safely recommended.

There is also evidence that the reduction of high blood pressure and high blood cholesterol levels reduces the risks of subsequent vascular events. Nevertheless, it is important that hypotensive therapy should not be too vigorous or begin too early, because of the risk of reducing the blood flow to the brain.

Anticoagulation is frequently being used in the treatment of ischaemic stroke associated with atrial fibrillation, cardiac valve disease, myocardial infarction with presumed mural thrombus or carotid stenosis. Although this has theoretical appeal, there is little supportive scientific evidence. Similarly, carotid endarterectomy is frequently performed for carotid artery disease, with even less empirical support. Randomised trials addressing some of these issues are currently in progress.

Excessive alcohol consumption should be reduced to facilitate the control of high blood pressure. Patients should be encouraged to stop smoking as this may reduce cerebro-vascular events and will certainly reduce ischaemic cardiac events.

Question 4

What assessment and rehabilitation is appropriate in the first six months for patients and their families or carers?

Multidisciplinary assessment should begin at once and rehabilitation as early as possible. In addition to a precise definition of neurological deficit, assessment should cover motor and sensory function, swallowing, cognitive function and mood, communication skills and performance of activities of daily living. For carer as well as patient assessment should include general health, psychological and social problems, support network, housing, finance, employment and leisure activities.

Assessments according to agreed standards must be done at regular intervals, the exact interval being determined for each individual.

Certain principles should be applied throughout rehabilitation of the stroke patient. These include:

- Documenting impairments, disabilities and handicaps and where possible measuring them using simple, valid scales
- Maximising independence and minimising learned dependency
- Taking account of the whole person and the environment

Participants in the rehabilitation process include nurses, physiotherapists, occupational therapists, speech therapists, dieticians, chiropodists, social workers, psychologists and doctors. They should work as a team. For the team to work effectively, there must be trust and respect for each others' expertise. *A key worker* should be identified for every patient at every stage to coordinate an individual plan and provide education and positive support. The professional's role is not only to assess and treat but to provide education and positive support to carers.

Throughout the rehabilitation period, the key worker has a responsibility to keep patients informed of the nature of their problems and carers should be actively involved in the entire process. The prospects for improvement and the goals of therapy must be discussed with patients and, where appropriate, carers.

Major problems in the rehabilitation phase need to be addressed. These include:

- Misunderstandings and rivalries between professionals
- Breakdown of communication between professionals, patients and their carers
- Insufficient appreciation of the impact of stroke on the patient's family
- Ill-prepared and sometimes unplanned discharge home
- Serious shortage of therapy
- Long periods in which patients are unoccupied
- Ill-considered admission to hospital
- Failure to recognise and respond to mood disturbances
- Delegation of care to inadequately trained medical staff
- Confusion caused by too many people being involved

There is no doubt that many consumers derive considerable satisfaction from the general stimulating effect of therapy and the practical benefit of much of the advice given. It is clear that the rehabilitation process can be effective, but there is little evidence of which aspects are beneficial. The personal and professional skills of therapists must not be undervalued. Many therapists are themselves keen to evaluate rigorously their work and to identify those components which are most effective. We support them.

Question 5

Considering the costs and benefits of the components of stroke care, what are the principles of good practice in the provision of services?

Stroke care should be re-organised according to the following:

Standards must be agreed in collaboration by all the professionals involved, taking account of the views of patients and carers. The service must be strongly led and co-ordinated, be cost-effective and kept under regular review, bearing in mind the large numbers of different professional groups involved. The service should be planned at district level to include primary and community as well as hospital services. Where there is a Joint Care Planning Team this should be one of its prime responsibilities.

The delivery of care must be *monitored* to ensure that the agreed standards are being implemented for individual patients. Monitoring should include consumers' views.

For most stroke patients the stay in hospital is a short prelude to a life long disability. In considering the balance between hospital and community care it should be remembered that costs and benefits fall not only on the NHS and other agencies but above all, on patients and their families. An *effective community service* must take account of this and plan accordingly. Since the needs of individual patients and carers vary there should be *flexibility* in the provision of community care, both upon the onset of stroke and after hospital discharge. In particular, attention should be paid to integrating hospital and community care at all times.

New organisational structures and changes in budgetary systems for stroke services may be required to encourage this flexibility. One approach could involve the named individual responsible for implementing and monitoring a district's stroke policy. This person could have budgetary responsibility, and be able to buy individual components of care, including those provided by the voluntary sector.

There has been little *evaluation* of the effectiveness and cost of most components of stroke care. This is urgently needed. In evaluating treatments, or even packages of care the randomized trial is almost always the most effective method provided appropriate outcomes are measured, including patient satisfaction. However, at times other research methods might be more practical and appropriate. Multi-professional approaches to research should also be encouraged. *Research* should be seen as part of the career development of all professionals and not just hospital doctors. In particular therapists need to develop research skills and this will require access to research funds, and more importantly, training in research methodology. The lack of evaluation can be rectified only by earmarking research funds in proportion to the health care resources devoted to stroke.

Education and training should be provided for all professionals, carers and patients to increase their knowledge about stroke, improve their skills in dealing with the condition and, change attitudes so that the needs of stroke patients are given higher priority and more status. Additional resources must be provided.

It is important to raise the awareness of politicians, public and the media and a programme of education and promotion of what needs to be done should be undertaken.

All the recommendations in this consensus statement could and should be accomplished within the present system of health care in the UK. The quickest and most effective way to implement these recommendations would be the formation of integrated district stroke services to encompass care, education and research at every level both in hospital and in the community. To ensure that such a service can be implemented health authorities must provide sufficient manpower and resources.

The cost of better services for stroke patients will increase but this could be considerably offset by concentrating existing resources, avoiding unnecessary investigations and ineffective treatments, and setting and monitoring standards of care.

For further copies of this statement please contact the King's Fund Centre 126 Albert Street, London NW1 7NF

Stroke treatment.