ABSTRACT—Although stroke is a common disease consuming considerable NHS resources little is known about how effectively these resources are distributed. A local district stroke register has revealed the burden and pattern of care for stroke patients locally which has prompted the setting up of a stroke steering group whose aim is to promote the effective local use and provision of services for stroke patients. The multidisciplinary group has adopted the Royal College of Physicians’ recommendations on stroke care for local use and incorporated them into a document which has been distributed to all health care professionals managing stroke patients. The group has also devised a standardised clerking proforma to collect data with which to audit stroke care. Based on these recommendations, standards have been set in the main domains of care for stroke patients with the aim of improving stroke services locally. Having identified local problems in the provision of care, set standards and devised a mechanism for the audit of stroke care, the district is now hopefully in a position to effect change and close the audit loop.

The recent government health service changes and the introduction of the purchaser/provider policy and the Community Care Act have taxed the minds of clinicians and health care planners [1,2]. This is especially the case with diseases such as stroke where the use of national health services and the social services is high [3]. Stroke consumes 4% of the total NHS bill [4] without including long-term and respite care, but despite the high costs little is known about how effectively resources are allocated and distributed. This causes concern about the implications for the management of stroke.

A King’s Fund consensus conference recently concluded that stroke services were haphazard, fragmented and poorly tailored to the needs of patients [5]. The Royal College of Physicians subsequently published a report Stroke—Towards Better Management [6] which discussed the pathology, epidemiology, management and prevention of stroke and made recommendations on stroke care.

At around the time these publications emerged West Lambeth health authority established a district stroke register to determine the incidence and case fatality from stroke. This district health authority has the highest standardised mortality ratio for stroke in the South East Thames Region in residents aged under 65 years (134 compared with the national average of 100). Detailed information has been collected on all first-time stroke patients under the age of 75. Patients have been followed up 3 months and 1 year after their stroke. During this time a register of the number of stroke admissions of all ages to St Thomas’s Hospital, a major teaching hospital in West Lambeth, was also kept. Between August 1989 and August 1991 there were 400 admissions; 260 of them were under 75 years old. At any one time between 25 and 40 beds, out of a total of 805 beds in the hospital, were occupied by stroke patients.

Data from the register together with published incidence and prevalence data and routine hospital statistics made it possible to assess the burden of stroke in the district (Fig. 1). However, apart from the registry data very little information was available on numbers of admissions to hospital, the use of services for day and respite care, or the use of rehabilitation services in both hospital and the community. West Lambeth district health authority was thus in the position illustrated by the King’s Fund, of allocating substantial resources to stroke services without knowing how, where or why the money was being distributed.

Stroke steering group

In response to the reports on stroke management, the findings of the stroke register and the need to specify contracts for stroke care, a stroke steering group was set up, based at St Thomas’s Hospital. Representatives from all sectors involved in stroke care were invited: general practice, community nursing, social services, hospital and community rehabilitation, psychology, general medicine, geriatrics and neurology, along with the stroke register co-ordinator and field-worker from the academic department of public health medicine.
Incidence, Prevalence & Mortality from Stroke in West Lambeth

| Incidence/year | Prevalence | Mortality/year |
|---------------|------------|---------------|
| Under 75 = 115 | 1300 cases | Under 75 = 55 |
| Over 75 = 70  | 70% severely or appreciably handicapped | Over 75 = 150 |
| All ages = 185 | 400 admissions to hospital | All ages = 205 |
|               | 30 beds at St Thomas's occupied daily | |
|               | Sudden Death Estimate 20–50 | |

Figure 1. Incidence, prevalence and mortality from stroke in West Lambeth. Numbers calculated using Oxford incidence data [9] West Lambeth 1988 mortality data [10] and hospital admission data. The number of prevalence cases was calculated from references 11 and 12.

Aims

The steering group endorsed the government’s objectives in The Health of the Nation [7] to reduce the occurrence of stroke and associated deaths and to ensure the maximum quality of life for survivors. The King’s Fund statement [5] recommended that each district should formulate and implement a stroke policy, and that standards should be set for the delivery and receipt of stroke care. By rationalising existing resources, setting and monitoring standards, and co-ordinating the activities of those involved in stroke care, the steering group aimed to provide a more effective and comprehensive local service.

Fig. 2. Setting up a stroke steering group

Formulating district recommendations for stroke

The Royal College of Physicians report on stroke [6] and the King’s Fund consensus conference statement [5] were distributed to members of the steering group who were asked to make amendments and additions relevant to their discipline, taking local factors into consideration. The responses were co-ordinated, and the group discussed, on several occasions, which of the suggestions should be incorporated into a local stroke document. Once agreed upon, these were appended to the Royal College of Physicians report [6] to be circulated along with a list of local facilities and contact numbers, thus combining national and local policy (see below). A proforma clerking sheet, which includes prompts for investigations, rehabilitation referrals, an assessment of pre-morbid activities of daily living, and discharge planning, was also prepared by the group to be used for clerking all stroke patients admitted to hospital.

Local amendments to the RCP Stroke report and advice on local facilities

In the main, the group agreed with the College recommendations in the report but considered that certain points needed to be amplified to guide local practitioners. Other points have been included which were not in the recommendations but were considered important for the management of the stroke patient.

Investigation of acute stroke (Chapter 3)

Clerking. Patients admitted to the hospital will be admitted under the care of a general physician, neu-
rologist or geriatrician. The stroke clerking sheet should be used when every stroke patient is admitted.

Investigations. An additional category of patients requiring a CT scan are those on anticoagulants. A CT scan may also be useful for patients some weeks after a stroke if their recovery is not progressing as expected, particularly to define those with evidence of widespread vascular disease, cerebral atrophy or hydrocephalus.

Treatment of acute stroke (Chapter 4)

The group stressed the need for multidisciplinary working in stroke care, essential both in hospital and in the community. A weekly stroke meeting, at which cases are discussed by therapists, the stroke register staff and consultants in elderly care, is held at St Thomas's hospital and is open to all those involved in the management of individual patients. Referral to the stroke team and the stroke register should be made upon admission to hospital.

Pressure sores remain a significant cause of morbidity to patients admitted to hospital. Particular attention should be given to prevention which should start on arrival in casualty.

Subsequent rehabilitation can be impaired by poor positioning and handling of patients during the acute phase of the illness. Nurses and physiotherapists skilled in the management of stroke patients should be involved in the patient’s management, from admission, to prevent the development of maldaptive strategies or postures.

Specific attention should be paid to the care of the shoulder on the affected side during the initial phase of reduced tone to prevent subluxation and pain.

Recovery phase (Chapter 5)

All stroke patients admitted to hospital should be discussed and reviewed at the weekly multidisciplinary stroke meetings.

Speech therapy. Early investigation of dysphagia in cooperation with speech therapists is essential to detect aspiration of material to prevent avoidable bronchopneumonia. This should include:
1. Testing swallowing and recognising the risks of aspiration
2. Performing further investigations, eg video-fluoroscopy, in selected cases
3. Advice on positioning
4. Advice on special food requirements

Psychology. Stroke is a major stressful life event and many stroke patients require two to three years to adjust to the physical and psychological effects of their illness. Early psychological intervention with patient and carers is important for:
1. Identification of perceptual problems and cognitive impairment
2. Helping to develop rehabilitation strategies to overcome possible psychological obstacles to recovery
3. Provision of professional help for carers
4. Prevention of long-term psychological problems after the stroke.

Community Nursing. There are six neighbourhood district nursing teams in West Lambeth. Within each team nurses should be identified who would develop an expertise in the needs of stroke patients.

Prevention (Chaper 6)

The major risk factor for stroke is hypertension. General practitioners should maintain hypertension registries and develop a hypertension management protocol which could form the basis for audit in a practice. Inadequately controlled hypertension is a significant risk factor; this implies that case detection, effective treatment and regular follow-up are required. Health education in primary care should focus on the reduction of risk factors associated with hypertension and stroke; this would be in line with the government’s Green Paper The health of the nation [7].

Ethnic groups. West Indians, Afro-Caribbeans and Asians are at greater risk of stroke; this is a particular problem in West Lambeth with a 30% black population. Special efforts should be made to target health education on these at risk groups, and to educate health care professionals in the management of hypertension and stroke of these residents.

Application of the group’s recommendations

The steering group document was presented to the physicians committee at St Thomas’s for comment, and the clerking sheet was given a trial on the elderly care unit before being used in the A&E department for all new admissions. All GPs in the district were informed about the existence of the group and invited to comment in the bimonthly newsletter distributed by the register. The Royal College document with local amendments was distributed to all departments involved in stroke care in the district.

Documentation of stroke and audit of practice

To carry out the stroke steering group’s aims effectively it is necessary to document all stroke events. The stroke register will record details of all strokes of district residents, obtaining clinical details of hospitalised patients from the clerking sheet which will be incorporated into every stroke patient’s notes. Details from patients who remain in the community will be obtained from GPs, district nurses and therapists. As part of the audit of stroke care the documented man-
agement of stroke patients will be compared with the agreed standards of care developed by the group.

Local standards

The King’s Fund [5] recommended that standards should be set for the delivery and receipt of stroke care. Such standards are useful both as an internal monitor for the group and for wider audit. They can be used by each discipline to measure its own service and by an outside agency such as the stroke register to monitor the overall quality of care and assist in directing change.

All practitioners involved in the stroke steering group set two or three standards in their specific areas for stroke management (Appendix 1). Using a scale a–d, ‘a’ being the gold standard and ‘d’ being the lowest standard, it was envisaged that many of the standards would start at ‘c’ or ‘d’ and with time progress to ‘a’. It is hoped that all professionals will be able to record the relevant information, although it is realised that this is less readily achievable in some community settings. Data should be collected continuously by the stroke register and made available twice a year to the stroke steering group; the group will then produce an annual report of these data.

Discussion

From the routinely available mortality data, the question arose: Is the West Lambeth health authority SMR from stroke so high because of a higher incidence or higher case fatality than in other districts? This led not only to a stroke register being established but also triggered the development of the communication chain which is essential in the management of stroke. The link between research and clinical practice has meant that it has been possible to clarify the picture both in hospital and in the community, drawing together all the local practitioners involved in the care and management of stroke patients.

The Royal College report and other publications formed the basis of the group’s work but it was then necessary to adapt and amend these guidelines with local facilities and services in mind. A local multidisciplinary, special interest group draws on the knowledge, skills and experience of professionals to provide informed and realistic working aims and objectives. Such a focus generates enthusiasm for those working in the field and serves as a central point for those seeking advice. Improved communications between disciplines, dissemination of information and regular monitoring using the specified standards arising from such a basis in an approach that can be used to improve stroke care across the district. This is presented as an alternative to setting up cumbersome structures such as stroke units which have not been shown to be uniformly effective [8].

Although it is impractical for every district to set up such a monitoring system, the need for a communication forum between professionals has proved to be essential. This has been achieved in two ways: at a clinical level professionals meet every week to discuss the management of inpatient cases, while at a district level the stroke steering group was established to review and adapt national recommendations to formulate a local district policy and set objectives and targets in the key areas. Stroke has been put on the agenda; the hardest task may be to keep it there. The distribution of the group’s recommendations with copies of the Royal College report will help to educate health care professionals on how to manage stroke. The next important phase will be the collection of data to monitor the targets, using the standards to measure them against the recommendations, and continue the effort to address and meet the needs of stroke patients in this district. We can begin to do this with the tools we have developed, and we hope our work will form a useful starting point for others. Perhaps a revision of the Royal College of Physicians report to incorporate space for local additions, amendments and information on local services would make this an easier task for others, resulting in a better presented and more usable policy document.

APPENDIX 1

Examples of local standards of stroke care for each discipline.
See section on ‘local standards’ in text for explanation of use.

1. Hospital standards of care

Hospital admission

(a) Available at St Thomas’s Hospital for all West Lambeth residents within 4 hours of having had a stroke, on request of the general practitioner
(b) Available to all West Lambeth residents within 24 hours of having had a stroke
(c) Delays in admission of more than 24 hours after request for any patient
(d) Admission not available for some patients considered to require it by the general practitioner

2. Hospital physiotherapy

Physiotherapy assessment

(a) Acute stroke inpatients will be seen by a member of the neuroteam within 48 hours of referral (excluding bank holidays and weekends)
(b) Acute stroke inpatients will be seen by a member of the physiotherapy department within 72 hours of referral
(c) Acute stroke inpatients will be seen by a member of the physiotherapy department within 1 week of referral
(d) Acute stroke inpatients will not have been seen within 1 month of referral
3. Hospital occupational therapy
   Occupational therapy treatment
   (a) Treatment available at appropriate time as defined
       by the short-term objectives provided by an OT
       with neuro training
   (b) Treatment available at appropriate time as defined
       by the short-term objectives provided by an OT
       with neuro training, but less frequently per week
       than appropriate
   (c) Therapy available at appropriate time intervals but
       only partly from an OT with neuro training
   (d) Therapy only available from an OT assistant

4. Hospital speech therapy
   Referrals
   (a) All patients with an acquired communication
       and/or swallowing/feeding problem are referred
       to speech therapy. Patients are seen within 48
       hours (excluding bank holidays and weekends)
   (b) More than 50% of these patients are referred and
       seen within 1 week of referral
   (c) Less than 50% of these patients are referred and
       seen within 1 month of referral
   (d) Less than 50% of these patients are referred and
       seen within 3 months or not at all

5. Psychology
   Neuropsychological rehabilitation
   (a) Right hemisphere stroke patients provided with
       cognitive rehabilitation by clinical psychologist
       within 2 weeks of admission
   (b) Right hemisphere stroke patients provided with
       cognitive rehabilitation by clinical psychologist
       within 4 weeks of admission
   (c) Right hemisphere stroke patients provided with
       cognitive rehabilitation within 2 months of admission
   (d) Right hemisphere stroke patients not referred for
       cognitive rehabilitation

6. General Practice
   Prior to stroke
   (a) The patient has had specific risk factor reduction
       advice, including a blood pressure measurement in
       the 3 years before the stroke
   (b) The patient has had a blood pressure check by GP
       or practice nurse in the 3 years before the stroke
   (c) The patient has consulted the GP (or practice
       nurse) in the 3 years before the stroke
   (d) The patient has not consulted GP (or practice
       nurse) in the 3 years before the stroke

7. Community rehabilitation
   (a) All patients referred for community rehabilitation
       assessed within 2 weeks
   (b) All patients referred for community rehabilitation
       assessed within 1 month
   (c) All patients referred for community rehabilitation
       assessed within 3 months
   (d) Not all patients referred for community rehabilitation
       assessed within 3 months

8. District nursing
   (a) A district nursing sister responds to a referral with-
       in 48 hours
   (b) A district nursing sister responds to a referral with-
       in 72 hours
   (c) A district nursing sister responds to a referral with-
       in 1 week
   (d) No evidence of district nursing sister input

9. Stroke register
   (a) Standards and objectives of care agreed by the
       steering group are monitored/audited using the
       stroke register data every 6 months
   (b) Audit carried out every year
   (c) Audit carried out less frequently than annually

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