Stroke Rehabilitation:

The nurses' contribution to the multi-professional team

Thesis submitted in accordance with the requirements of the University of Liverpool for the degree of Doctor of Philosophy

by

Bernard Gibbon

January 1998

TEXT BOUND CLOSE TO THE SPINE IN THE ORIGINAL THESIS

Contents

List of Tables

List of Figures

List of Appendices

Abstract

Stroke accounts for a large proportion of hospitalised patients who have a protracted duration of in-patient stay. Strategies to prevent stroke such as hypertension control may influence the number of people who have a stroke but as yet no treatment options exist to manage stroke as an acute disorder. Large numbers of patients estimated to be around 40,000 to 60,000 people in the UK each year (Wade 1989) require rehabilitation to enable them to regain (some) independence in daily living.

Alternative approaches to the care of stroke patients have included management in general medical wards or care of the elderly wards, peripatetic stroke rehabilitation teams and stroke units (Gibbon 1993). Stroke units have recently been established as the approach which confers greatest benefits to patients in terms of their outcomes (Langhorne 1997). That is, patients managed in Stroke Units have lower mortality rates and higher levels of functional recovery. This approach allows a greater number of stroke patients to return home and enjoy a better quality of life than institutional care. The reasons for this "value added" benefit of stroke unit care is not fully understood and this study provides some insights into the processes of care in a stroke unit.

A systematic review of the literature (1990-1996) was undertaken to address clinical questions focusing on the structure, process, and outcome variables (Donabedian 1969) which may have given rise to the benefits of stroke unit care over other approaches. Findings extrapolated from this literature review suggested a number of issues. These included assessment and appropriate selection of "middle band" stroke patients for admission to stroke units, early

intervention and a co-ordinated team approach. The contribution of the nurse was largely unclear. However, two roles were highlighted namely a function of organisation of patient care (O'Connor 1993), and substitution for other professions especially the therapy professions (Waters 1991).

Little evidence was found in the literature about the team climate in stroke units despite inference that this was important. Similarly no studies were identified which examined the processes of team working in stroke units. The literature further suggested that professional staffs' attitudes to stroke rehabilitation was important but evidence was limited.

The purpose of this study was to describe the context within which stroke rehabilitation occurs with particular emphasis on the contribution of the nurse; to explore the existence and extent of collaboration between the professional staff involved in stroke rehabilitation; to explore service users perceptions of the key contributors to their rehabilitation.

The study was guided by Orem's (1971) theoretical framework which sought to determine what nurses do, what product is made by nurses and what results are sought by nurses. The study was set in the paradigm of practitioner research.

A single site case study was conducted. All members of staff engaged in caring for patients following stroke were included in the sample. Additionally a sample of patients who had returned home following stroke and a period of hospitalisation were included. The methods included semi structured interviews with patients and staff. The instruments being designed for this study. Measurement of

staff attitudes towards stroke rehabilitation utilising an attitude questionnaire originally devised by Hamrin (1982) and modified by Gibbon (1991). The instrument was further modified in this study for use with health professionals other than nurses. Measurement of the team climate was undertaken using the Team Climate Inventory (Anderson and West 1994) and observation of the team conference using the Team Observation Protocol (Ducanis and Golin 1979). A survey of rehabilitation goal setting through documentary sources was undertaken by using a questionnaire designed for this study. The methods were complementary and multiple methods allowed for verification of findings.

The main findings of the study are;

- there are differences in the key characteristics between nurses and other professional groups in terms of entry into the health care profession, career aspirations and professional activity;

- there are differences in the aims of intervention between the professions which is reflected in role expectation and performance;

- there are differences in attitude scores towards stroke rehabilitation amongst nurses according to their unit of employment;

- communication between and amongst the professional groups improves through team meetings but coalitions form with the team;

- interprofessional collaboration is perceived by participants to have improved, primarily through closer

proximity (structural variable) and through team working (process variable);

- in the stroke rehabilitation unit the teams' ability to be creative has improved as support was perceived to be greater and interventions more focused and valued;

- nurses have assumed the role of team leader through brokerage and through substituting for doctors on a day to day basis but doctors retain the right of veto;

- nurses are developing a therapeutic role by instigating patient activation, motivating patients and providing opportunities for patients to re-learn daily living skills;

- patients valued nurses as professional staff who not only encouraged and motivated them to acquire self caring skills but would act for them at times considered appropriate by patients themselves;

- patients valued their experiences in a stroke unit and believe that it contributed to their recovery.

Discussion of the findings suggest that stroke units confer advantages to patients because of improved interprofessional collaboration over that found in general medical wards and development of the nurses role to one greater than organisation of patient care and substitution. The study concludes by suggesting that the current climate is ripe for the development of nurse clinicians in the area of stroke care.

Acknowledgements

Thanks are due to a great number of people including family, friends and colleagues for their support and encouragement whilst I undertook this study.

I should like to thank the University of Liverpool for their support and use of their resources. In particular I should like to express my sincere thanks to my supervisor Professor Karen Luker who so generously gave her time and expertise. I am also indebted to my research collaborators especially Professor David Barer and Caroline Watkins whose enthusiasm for research into stroke knows no bounds. They not only provided support and direction but have introduced me into a world of stroke researchers through CoSTAR (Collaborative Stroke Audit and Research), ESDB (European Stroke Database), EUCLID (European Consortium for limitation of ishaemic damage in stroke) as well the British Stroke Research Group and the Society for Research in Rehabilitation.

I should like to express my thanks to Edna Gibbon for transcribing interview data, Liz Lightbody for assistance with data collection and Peter Ridges for assistance with data analysis.

Thanks are also due to the patients and staff of the stroke unit who without their help this study could not have been undertaken.

Finally I should like to thank my wife Carolyn for her patience and support and my daughters Jane and Alison for their understanding at such an early age.

Declaration

This thesis is the result of my own work. The material contained in the thesis has not been presented, nor is currently being presented, either wholly or in part for any other degree or qualification.

signed . ...

Section I

Chapter 1

Introduction

Introduction

This thesis presents a study which explores interprofessional collaboration and the contribution of the nurse, in the rehabilitation of stroke patients.

General Background to the Research Problem

Stroke

Stroke is

> 'characterised by a focal neurological deficit due to local disturbance in the blood supply to the brain: its onset is usually abrupt, but it may extend over a few hours or longer .... it persists for more than 24 hours'.
>
> World Health Organisation (1971)

Strokes are common, having an incidence of about 2-2.5 per 1000 per year and a prevalence of about 6 per 1000 in the UK (Wade 1989). The incidence appears to be declining and this is particularly noticeable in the USA where the incidence fell to about 0.8 per 1000 per year during the 1970's. This is encouraging given the emphasis on prevention and imperative to reduce the death rate from stroke by 40% in both under 65 years and 65-74 years age groups by the year 2000 (DoH 1992). The prevalence, however, appears to be increasing confirming that the number of people who survive a stroke is increasing and many of these people will have a residual loss of functional ability (Dombovy, Sandok & Basford 1986). The contribution of health care professionals in maximising independence is therefore one of today's significant health care challenges.

Expressed at a UK national level the number of new cases per annum is between 100,000 - 120,000 first strokes per annum plus about 30,000 recurrences per annum. The mortality rate is about 80,000 per annum leading to a prevalence of 55,000 - 70,000. Both men and women are equally affected although there is an increase in the number of women with stroke in the over 85 years age group. At a local level the incidence and prevalence of stroke is no less alarming. In a health district with an average population of about 250,000 people, approximately 500 - 650 new strokes per annum can be expected. In the same population it can be estimated that between 900 - 1200 stroke survivors live with some degree of disability, around 80% are aged over 65 years.

As stroke remains the third leading cause of death in most developed countries and the major cause of physical disability it is unsurprising that stroke patients occupy a large proportion of acute medical beds in general hospitals. Some estimates have put this occupation as high as 25 - 33% of acute medical beds (for example, Barer 1990). Folden (1993) suggests that nurses will care for more persons following stroke than any other neurological disorder in acute care hospitals. It may also be that stroke is the single most frequently encountered diagnosis seen by nurses in general hospital settings.

As yet there has been no breakthrough in treatment, either medical or surgical, and rehabilitation is seen as the only course of action for those who have suffered a stroke. Assessment of progress following a stroke has become much clearer and more standardised as measures of functional ability, and cognitive impairment have been developed, refined and accepted by the research and

clinical community. The identification of prognostic indicators has facilitated the selection of patients who might benefit most from rehabilitation interventions and the expansion of the number of specialist stroke services is doing much to reduce the death rate and levels of post stroke disability. There has been some concern that the interventions have been focused on functional ability (physical attributes) but there is recognition of the misery that stroke can bring.

Rehabilitation Services

Rehabilitation has developed from a service who's aim was 'to return people to work' to a process which aims to 'promote independence for people'. This progression has not been smooth and successive reports (Phillips 1954, Piercy 1956, Tunbridge 1972, McMillan 1973) have called for the development of rehabilitation services. The 1986 report of the Royal College of Physicians (Physical Disability and Beyond) is noted by Clarke (1988) to have been the first report to have provoked health authorities into action. The actions have also had the effect of making rehabilitation services mostly hospital based and medically controlled thus limiting the accessibility of the service. Actions which followed this report were the incorporation of Artificial Limb and Appliance centres into the National Health Service and the development of Departments of Rehabilitation with a medical consultant lead.

Innovative approaches to rehabilitation in the community have been tried, for example, 'hospital at home schemes' which have reported some success with some client groups most notably the Peterborough scheme for orthopaedic patients (Pryor & Williams 1988) but the provision of

augmented home care for frail elderly people, including those who have had a stroke, has not always been successful (Victor & Vetter 1989).

This peak of interest and elevation of status of rehabilitation may be short lived as the service comes under scrutiny to demonstrate its effectiveness. Tallis (1989) suggested that rehabilitation services had failed to produce evidence of benefits to patients and called for an expansion of the evaluation of the process of rehabilitation. The urgency of this suggestion was made all the more poignant by his observation that rehabilitation was "an infant science with adult spending habits". The lack of knowledge concerning effective and efficient interventions in rehabilitation was also identified by Acheson (1990, then Chief Medical Officer of Health) who also questioned how best to organise services for consumers' benefit.

Definition of Rehabilitation

The term 'rehabilitation' is in frequent use and essentially implies a restoration to a previous state whether used in a non-medical context, for example, when applied to offenders whose imprisonment is both punishment and to return to community not to re-offend or in a medical context to suggest the restoration of a previous or normal health. Rehabilitation is a process and it is frequently seen as intervening in the progression from impairment to disability and from disability to handicap.

Although difficult to define there is general agreement amongst medical, professions allied to medicine and nursing authors (e.g. Brocklehurst 1978, Turner 1981, Walley 1986) that rehabilitation is concerned with the

gaining of independence for discharge from health providing services. Stryker (1972) defines rehabilitation as

> "... a creative process that begins with immediate preventative care in the first stage of an accident or illness. It is continued through the restorative phase of care and involves adaptation of the whole being to a new life".

This definition appears to suggest that the person moves from a passive role, where the creative care is devised by the carer, to an active role where the onus is on the person to adapt to their new situation. This definition further implies that the person may not be restored to their previous health status.

The importance of patient involvement has been emphasised by rehabilitationists as they have recognised that without this their rehabilitation plans will be worthless (Beland and Passos 1981).

The purpose of rehabilitation is influenced by the nature of the condition affecting the person and Robinson (1988) discriminates between short term and long term rehabilitation:-

Table 1. **Distinction between Short and Long Term Rehabilitation**

	Rehabilitation of the Long Term Physically Impaired	Rehabilitation in Short term acute conditions
Broad aim of service	Alleviation	Cure
Focus of service	Handicap	Impairment
Style of Service Delivery	Patient centred	Technique centred
Medical Role	Physician as co-ordinator	Physician as controller
Professional basis of remedial therapy	Therapist as autonomous contractor	Therapist as medical agent
Patient's role	Active definer of rehabilitation goals	Passive complier of pre set goals
Site of service	Community	Hospital

(Robinson 1988).

Inevitably classifications such as this have their limitations but some key points are made. Firstly this classification recognises that hospital delivered rehabilitation does not generally deal well with the social consequences of disability. Secondly there appears to be recognition that in the 'long term physically impaired person' greater variance in outcome may be envisaged requiring the person to be an active participant

in the goal setting and playing perhaps a more active role than the doctor.

One of the main limitations of Robinson's classification is the separation of acute conditions from long term impairments. Many people have acute conditions in addition to long term impairments especially elderly people. In the case of a person having a stroke the acute nature of the condition frequently results in hospital admission but the protracted nature of recovery may place the person into the long term physically impaired category. The nature of stroke and the need for post acute care suggests that the transition from hospital to community should include the deployment of appropriate rehabilitation services but despite changes in policy, such as 'Care in the Community' (DoH 1989) domiciliary therapy is still in short supply. Patients' discharged from hospital as they are 'too well for hospital' (Chadwick and Russell 1989) may not be well enough for independent living, and determining if the person requires medical or social care may be problematic. The division of medical care from social care could give rise to a paradox where a person is deemed to require care and this is provided by social services who have a financial incentive to promote dependence rather than independence through rehabilitation. That is, the need for care assistance is contingent upon an increase in dependent people in the community.

For the purposes of this study the following definition of rehabilitation suggested by Laidler (1994) is used

> "an active process by which people disabled by injury or disease regain their former abilities or if full recovery is impossible, achieve their optimum physical, mental, social and

.. vocational capacity and are integrated into the most appropriate environment of their choice." (p.13)

The active process is accepted to be

> "any intervention, strategy, procedure or technique employed to help clients and their families, in partnership, to overcome, live with, manage, bypass, reduce or come to terms with problems" (Laidler 1994)(p.14)

which is a pragmatic approach to stroke rehabilitation.

Organisation of Rehabilitation

Stroke rehabilitation is commonly considered to require the combined efforts of various members of the multiprofessional team who in isolation would be unable to meet the complex physical and psycho-social needs of the patients (Mariano 1989). The team can be conceptualised as a group of health care professionals required to work together but their actions, interactions and transactions are thought to influence the effectiveness of the team (Pearson 1983). A provisional review of the literature suggests that team approaches overcome some of the limitations of uniprofessional intervention and that focusing the intervention on the needs of the individual patient overcome some of the limitations of a task orientated approach.

Context

The study reported here was undertaken part time over a period of 6 years. At the commencement of the study opinion was divided in regard to the merits of establishing stroke rehabilitation units as compared to managing patients with stroke in general wards. A number of significant developments have taken place in health care provision during this time, not least the establishment of an "internal market" in health care as a result of the NHS & Community Care Act (DoH 1990). The increased emphasis on effectiveness issues saw the establishment of the Central Research and Development Committee (DoH 1991) which sought to facilitate evidenced based practice in all health care professions and this has been pursued with intensity by the nursing profession. The strategy for nursing (DoH 1989) has suggested that research based practice is necessary for optimum quality care and it is a pre-requisite for professional accountability.

The Cochrane Collaboration Centre, established in 1992 to support the Research and Development programme of the National Health Service seeks to promote evidenced based practice through undertaking systematic reviews of research and dissemination of findings (Chalmers and Altman 1995). A Cochrane review was undertaken in regard to specialist in-patient stroke care and concluded that patients benefit where such system is in operation. This finding has been widely disseminated and a growth in the number of stroke rehabilitation units in the UK is now becoming evident. Despite this finding the reasons why stroke rehabilitation units confer advantages to patients is not yet fully understood. Furthermore the contribution of the nurse in stroke rehabilitation appears not to have

been fully explored despite the high proportion of nursing time that stroke patients require and the amount of time stroke patients spend in the direct care of nurses.

Formulation of the Research Question

The researcher has many years of experience in caring for stroke patients in general medical wards and care of the elderly wards. Whilst these wards did not specialise in providing care for stroke patients a high number of patients with stroke are admitted to these types of wards and these patients frequently have protracted episodes of in-patient care. It was also apparent that whilst a number of stroke patients made full recovery a significant proportion had persistent disabilities which in many instances affected the persons date of discharge and affected discharge destination. Such was the self care deficit for certain patients that a notable number could not be discharged to their own home or the home of a primary carer and instead required nursing care in a community nursing home.

All these patients were referred to and in receipt of rehabilitation though this was perceived as the domain of the professions allied to medicine, particularly the physiotherapist, and much of the "rehabilitation" was undertaken out with the ward area, in for instance the physiotherapy department. This separation of ward interventions from 'rehabilitation' creates a mystification of the rehabilitation process and perpetuates a perspective of nursing care being something other than rehabilitative care.

The promotion of self care is an espoused goal of nursing (Orem 1971) and as such may be seen to be commensurate with rehabilitation. Nurse education although frequently set within the paradigm of acute care does include the concept of rehabilitation and it could therefore reasonably be concluded that the nurse has a role in the rehabilitation of stroke patients.

Developments within the nursing profession such as the Named Nurse Initiative (NHS Executive 1994) and the move towards increased individualised patient care through "Primary nursing" (Marram & Barrett 1979) have led to a more individualised approach to care for patients and nurses. To what extent these moves have impacted on interprofessional teamwork is largely unknown. The increased specialisation evident within health care and amongst professional groups has also led to a risk of fragmentation of care.

A preliminary review of the literature suggested that nurses indeed do have a role in rehabilitation of stroke patients (Myco 1984) but there was little empirical research exploring the role of the nurse or the context in which stroke rehabilitation exists. Additionally it was assumed that stroke rehabilitation required the combined efforts of the multidisciplinary team though boundaries and expectations of other team players appears to have been ignored. The physician is seen as the team leader by him/her self and by the other players and the rhetoric of teamwork is perpetuated by the physician who either chooses to ignore or is unaware of the problems of getting a team of different disciplines to work in collaboration towards a common goal.

Purpose of the Study

Against this background the study was designed to explore the context within which stroke rehabilitation takes place. In particular to examine the process of interprofessional collaboration and to examine closely the contribution of the nurse. In order to address the research question multiple research methods were employed. The methods included, in-depth interviews with staff and patients, observation of team activities, surveys of team activities and professional staff attitudes and surveys of documentary evidence. It was assumed that nurses require abilities, that is, knowledge, skills and attitudes, before they can be given the authority and responsibility to care for stroke patients, which are pre-requisites of professional accountability (Bergman 1981). It was also assumed that stroke rehabilitation would occur as a multidisciplinary endeavour and that the existence and extent of collaboration would influence the rehabilitation process. To this end the researcher explored the nature of the stroke rehabilitation team and this was undertaken as a case study. The structure of the stroke rehabilitation team within a stroke unit are described to facilitate interpretation of the processes involved in stroke rehabilitation.

Organisation of the Thesis

The thesis is organised in 3 sections and 9 chapters. Section I contains this chapter which provides a broad introduction to the research problem and the researcher's own interest in the subject area. The second chapter is concerned with the background to the study. This is based on a systematic review of the literature on material retrieved from electronic databases for the years 1990 -

1996 and augmented with articles identified from hand searching specific journals. The systematic review addressed the clinical question "What is the nature and extent of stroke rehabilitation?" and is organised into four sub-sections; structural, process and outcome components of stroke rehabilitation and a final section on the contribution of the nurse to stroke rehabilitation.

Section II comprises of chapters 3 and 4. Chapter 3 commenced with the study aims and is concerned with the methodological principles of the study. Chapter 4 presents the working methods employed in this study. The selection of research methods, development and selection of data collection instruments, exploratory work and case study method are described in Chapter 4.

Section III comprises of 5 chapters which constitute the findings, discussion and conclusions. Chapter 5 presents the findings concerned with the in-depth interviews of staff and patients. Chapter 6 presents the findings of the observations of team activities. Chapter 7 presents the findings of the surveys of team working and professional staff attitudes towards stroke rehabilitation. Chapter 8 presents the findings of the surveys of documentary evidence of rehabilitation team patient goal setting.

Chapter 9 forms a discussion and conclusions of the study findings and their implications for stroke rehabilitation in practice. The insights gained shed some light on the processes occurring in stroke rehabilitation and suggest ways in which improvements in patient outcomes may be achieved. The limitations of the study are also discussed in this chapter and suggestions for further research are made.

Chapter 2

Stroke Rehabilitation: a systematic review of the literature 1990 - 1996

Introduction

This literature review of stroke rehabilitation employs a systematic review. Systematic reviews of research are "invaluable scientific activities" (Mulrow 1995) and they involve bringing together all the available research based evidence on a given subject and systematically evaluating it. They can take the form of a meta analysis or a narrative review of the literature enabling the reviewer to reduce vast amounts of information to a manageable size. The salient information, that is, that which is related to the research question, can be sifted out from the insignificant. The systematic review contrasts with the traditional review where the latter is considered to be subjective, with basic issues, such as which studies to include in a review, being a discussion point between reviewers. A consequence of this is that a range of studies, which may or may not be robust, may be subjectively included. Rather than resolving conflicts between studies, the review may generate more. There is a scientifically unstable feel to the traditional review, with conclusions being reached with little support from the findings and this can be misleading.

Systematic reviews can be very time consuming and expensive to conduct, but are efficient and would be less costly than performing a new study (in many instances). Traditional reviews are criticised as being biased and haphazard whereas systematic reviews, applying scientific principles, reduce random and systematic errors. Rosenburg and Donald (1995) suggest that systematic reviews support "evidenced based medicine" claiming an immediate advantage that it integrates medical education with clinical

practice. This perspective can equally be applied to nursing and other health care research.

The drive for systematic reviews of the literature has been given a push by the need for evidence based practice (Sackett and Rosenburg 1995) and the need for dissemination of research findings (Hudgings 1995). There are however limitations to systematic reviews. Some material is difficult to secure electronically with some estimates running as high as 64% of published research reports not being entered on electronic databases (Knipschild 1995), though this comment related to undertaking a review of material published since 1940. Additionally there is an unknown quantity of unpublished research reports and many research reports published in languages other than English. Further difficulties are experienced in foreign reports where terms and contexts are not interchangeable.

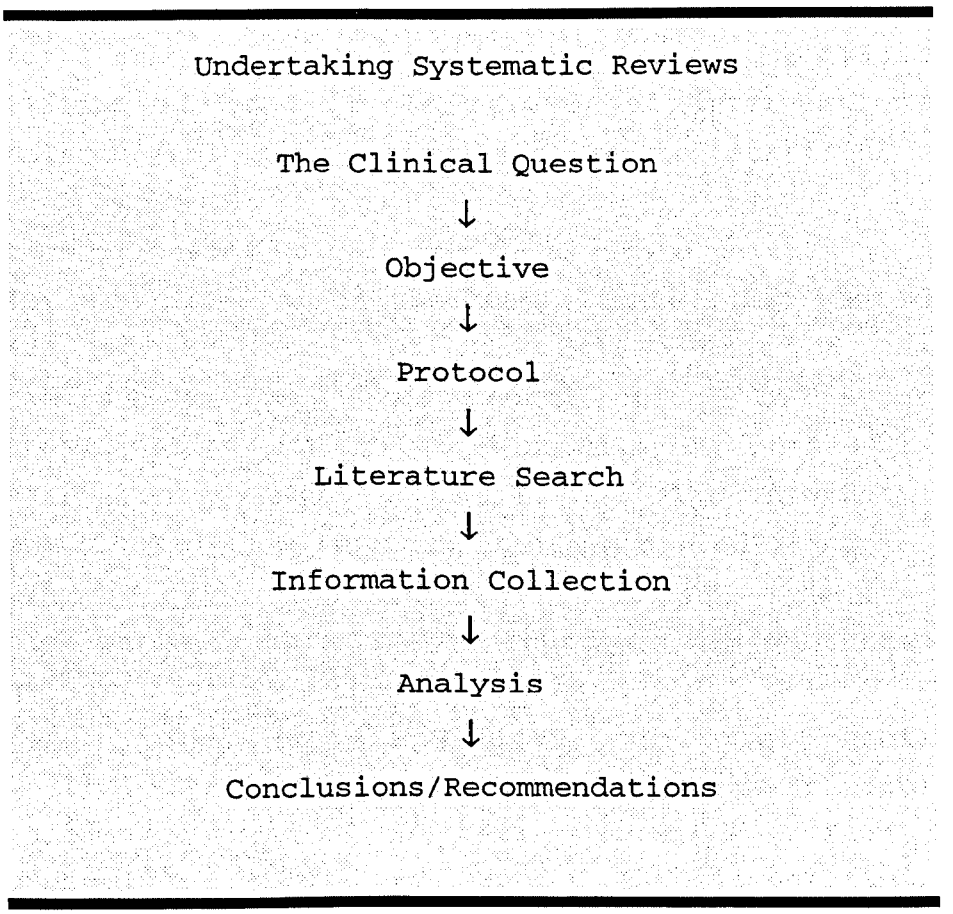
Despite these and other difficulties systematic reviews of the literature have been undertaken in the area of stroke including a systematic review of specialist multidisciplinary team (stroke unit) care for patients (Langhorne, Williams, Gilchrist & Howie 1993, Langhorne 1997) which concluded that stroke patients managed within specialist stroke units are more likely to be alive and living at home a year after stroke than those managed in general medical wards. Additionally stroke unit care did not increase the time spent in hospital. These very positive findings have been widely reported and there is an increase in the number of stroke units being established in the UK. What these findings do not tell us however, is what attributes of the stroke unit confer these positive advantages.

Stroke is an area of active research (Jeffrey & Good 1995) and it follows that much is published in this area. It is also noteworthy that because stroke management is dependent upon the services on many different health care professionals that the process of enquiry is undertaken by a similarly wide range of professionals who each publish their findings in their 'own' professional journals as well as publications aimed at the multiprofessional market.

The use of electronic databases such as 'Medline' and 'Cinahl' has simplified the process of undertaking literature reviews but produce large volumes of references especially in research active areas. This is magnified the further back in the literature the researcher goes. One method of dealing with this problem is to limit the number of years under review, usually commencing with the most recent year and working backwards, but this has the problem of ignoring 'classic' papers outside the inclusion time zone and can prevent the use of the cascade system of literature identification from the citations which are of necessity earlier publications.

The process of undertaking this systematic review followed the following procedure (adapted from that used by Langhorne 1995 for the Stroke Trialists' collaboration)(see figure 1).

Figure 1. **Process of Literature Review**



Clinical Question

This systematic review sought to address the following clinical question :

> *"Why is a stroke unit more effective than a general medical ward in improving patient outcomes following stroke?"*

Objectives

and the objectives were to identify:-

a) those structural aspects of a stroke unit which have been isolated,
(for example, organisational issues including staffing mix and levels, timing of interventions, admission/selection policy, attitudes of staff);

b) those processes which occur in a stroke unit,
(for example, what is the team climate like? what do team members expect of each other? what do team members see as their contribution to stroke rehabilitation [in particular what do nurses see their contribution to be]? how is information communicated? how is goal setting achieved?);

c) which patients have improved outcomes and what these patients attribute these gains to,
(for example, do all patient sub-groups benefit equally from stroke unit care? what do patients consider contributed to their outcome? what factors improved outcomes, and what effect does family involvement have?)

Implicit in a review of this nature is an understanding of the nature and extent of stroke rehabilitation. In other words what is stroke rehabilitation? This will be discussed as an introduction to the systematic review.

Protocol

The protocol was to use electronic databases (Medline and Cinahl) as journals indexed on electronic databases are regarded as 'gold standard' journals (Knipschild 1995) in that they contain papers which are regarded as professionally robust and have each been subjected to peer

review. Additionally these journals generally contain primary research reports.

The search terms were:

- 'Stroke Rehabilitation'
- 'English language' (this excludes reports in languages other than English but not reports from other countries)
- 1990 - 1996

Given the researcher is primarily concerned with the contribution of the nurse in stroke rehabilitation the search term:

- 'nurse'

was also meshed with the results of the previous search.

Literature Search

This search generated the following number of papers (see table 2 following).

Table 2. **Summary of Papers Identified by Medline Search**

	1996	1995	1994	1993	1992	1991	1990	Total
Stroke Rehabilitation	**5**	**25**	**31**	**24**	**17**	**11**	**20**	**133**
and English Language	**4**	**24**	**27**	**21**	**17**	**9**	**19**	**121**
and Nurse	**0**	**1**	**0**	**2**	**0**	**3**	**0**	**6**

Table 3. **Summary of Papers Identified by Cinahl Search**

	1990-1995*, **
Stroke Rehabilitation	**161**
and English Language	**161**
and Nurse	**10**

* The CINALH CDRom database did not extend into 1996.
** The search strategy on Cinahl favours grouping years together.

Much duplication of records occurs the exception being that Cinahl also compiles references from journals not considered by Medline, in particular references from journals aimed at the professions allied to medicine and weekly publications targeted for nurses.

The Royal College of Nursing library was approached to conduct a literature review but no additional papers were identified. The Cochrane Collaboration Centre was also approached and they provided a list of appropriate references, all except 2 had been identified by the electronic databases, but they additionally noted the difficulty of identifying papers which specifically referred to the contribution of the nurse in stroke rehabilitation.

Additionally a hand search of the following journals, selected on the premise of a UK base, focused on nursing was undertaken in order to ensure an extensive search.

Journals hand searched:

- Journal of Advanced Nursing
- International Journal of Nursing Studies
- Journal of Clinical Nursing

Six additional papers were identified that were not included in the electronic databases and this is likely to be as a consequence of their recent publication and the 'lag time' between publication and indexing on electronic databases.

Information Collection

Photocopies of papers identified in the search were either made or requested from the British lending library through the university library. It is noteworthy that only 65 (53%) were held by the University of Liverpool library suggesting that nearly half of the available English language literature published on stroke is not readily available to clinicians working in a teaching hospital.

Analysis

Published research studies can be classified into a variety of types of studies. Each of the identified English language papers (121) was then subjected to review by reading the abstract in the first instance. It was considered that a paper worth reading would have an abstract that was informative. It is accepted as a limitation that some appropriate papers may not have been included in the review as a consequence of a missing or poor abstract.

All 121 papers fulfilling the inclusion criteria were identified and classified according to a type of paper (see table 4 and 5).

Table 4. **Classification of Identified Research Reports according to Method.**

Research papers Type	Number
Randomised Controlled Trials	8
Experiments (including quasi experimental studies)	12
Cohort studies	15
Surveys	28
Single Case Design	2
Action Research	1
Meta Analysis	1
Reviews	26
Total	**92**

Table 5. **Classification of Non Research Reports according to Type**

Non- Research Reports	
Type	Number
Letters/Comments	9
Editorials	1
Clinical Guidelines	5
Miscellaneous	14
Total	**29**

This systematic review did not consider 'non research' reports and hence an additional inclusion criteria of

- research report

was added to those listed previously (see page 23).

The 92 research papers were then graded to give some indication to the weight of evidence supporting eventual conclusions using the following guidelines (see figure 2).

Figure 2. **Criteria for Grading Published Articles** (adapted from Sackett, Haynes, Guyatt & Tugwell 1995)

A*	RCT Large Study Randomisation method described Validity and bias addressed Results identify new knowledge Answers all/most clinical questions
A	RCT/RuCT Randomisation method clear/unclear Validity and bias addressed Results identify new knowledge Answers all/most clinical questions
B	RuCT/Study/Survey Randomisation method clear/unclear Possible loss of validity or introduction of bias May/may not identify new knowledge Answers some/most clinical questions
C	Studies/Trials/Reviews Relevant but small numbers (in trials) Not strong on validity and bias No new knowledge identified Answers some clinical questions Less well written
D	Descriptive Studies/Reviews/ Narratives Less relevant Liable to bias and lack of validity No new knowledge Answers few clinical questions
E	Narratives/Personal views Less relevant Biased No new knowledge Few/no references Answers few clinical questions

The studies for review could be considered to be either 'trials and studies' or 'reviews' and the following guidelines were applied as appropriate (see figures 3 and 4).

Figure 3. **Critiquing Trials and Studies** (adapted from Sackett et al 1995)

Was there a clear hypothesis?

Was there a control group?

Were ethical considerations outlined?

Was the method appropriate to the research question/hypothesis?

Was there a pilot study? Does it explain how the tool was tested?

Were details of how many questionnaires were returned, how many were refused and the extent to which the questions were answered?

Is the method of carrying out the procedure described in sufficient detail?

Has the author discussed each hypothesis in the light of the research findings?

Were both clinical and statistical significance considered? If no statistical difference was the sample size large enough?

Are the results clear, unbiased and organised? Does it answer the research question or support/refute the hypothesis?

Are there suggestions for further research?

Are there biographical details of the author? Is he/she qualified to do the research?

Figure 4. **Critiquing Reviews** (Sackett et al. 1995)

Was there a clear aim?

Were details included about how the patients/articles for review were chosen?

How many references does it have?

How valid were the studies used in the references?

Is it obviously biased?

Are the results clear?

Is it well written?
Does it answer most, some, or few of the clinical questions?

The grading and review process of the 121 papers originally identified from the electronic databases resulted in the rejection of 29 as they were not research based and subsequently 10 were rejected because they were graded less than 'D', that is the papers were narratives or personal views, a further 37 papers were rejected as they did not answer any of the clinical questions posed in this study. Specifically a number of papers identified dealt with only one aspect of stroke rehabilitation, for example, scientific papers dealing with gait control or assessment of cognitive functioning or validation of measurement scales. The process of rejecting papers is summarised in the following table (see table 6).

Table 6. **Summary of Identified Articles Rejected from Systematic Review**

Total number of papers identified	121
Number rejected as 'non research'	28
Balance	93
Number rejected as insufficiently robust	10
Balance	83
Number rejected as not answering questions in this review	37
Total included for review	**46**

In summary 46 papers were identified from the electronic databases and hand search of selected journals which addressed, at least in part, the clinical questions raised. The included papers are presented in the following table in year order by first author (see Table 7).

Table 7. **Summary of Papers Identified for Inclusion in the Systematic Review**

Author	Year	Research Method	Sample Size	Structure	Process	Outcome	Grading	Country	Comments
Gladman	1996	Review	-	*			D	UK	Brief review paper
Waters	1996	Qualitative Survey	56 staff	*	*	*	B	UK	General rehabilitation of elderly not stroke
Duncan	1995	Survey	58/68		*		C	UK	SRU improves outcome
Eason	1995	Survey	73	*		*	D	NZ	SRU = advantages
Gibbon	1995	Action research		*	*		C	UK	Increase of nursing knowledge increases attitude score. Systematic planning improves care.
Jeffrey	1995	Review		*	*	*	C	USA	SRU improves outcomes
Jorgensen	1995	Survey	1197			*	C	DK	SRU leads to early detection and management of patient problems
Kalra	1995	RCT	71	*	*	*	B	UK	Severe stroke patients also benefit by SRU care
Lewinter	1995	Survey	21pts. Int 8 staff	*	*		C	DK	Therapists focus on process

									not outcome
Speach	1995	Review	-	*	*	*	C	USA	SRU = advantages ? reason
Alexander	1994	Survey	520	*		*	B	USA	Management algorithm improves outcome
Dromerick	1994	Survey	100	*		*	C	USA	Focus on complications
Falconer	1994	Survey	225			*	D	USA	Classification tree predicts outcome
Gibbon	1994	Staff survey	30	*	*		B	UK	Survey of District nurse contribution in the community
Kalra	1994	RCT	146	*	*	*	C	UK	SRU improves outcomes ?functional ?services
Kalra	1994	Staff Survey	13		*		D	UK	Survey of record keeping innovation
Folden	1993	Experiment	68		*		D	USA	Interventions improve outcomes
Gibbon	1993	Review		*	*	*	C	UK	SRU improves outcomes. Implications for nurses
Kalra	1993	Survey	96	*		*	C	UK	Measurement assists management
Kalra	1993	Survey	96			*	C	UK	The elderly do well in Stroke Units

Kalra	1993	RCT	124	*	*	*	C	UK	Stroke units improve outcome and efficiency enhanced by patient selection
Lorish	1993	Review		*	*	*	D	USA	Doctor is team leader who "does nothing"
O'Connor	1993	Review		*	*		C	UK	Review of nurses contribution to stroke care
Oczkowski	1993	Cohort	113	*		*	D	USA	Use of FIM to identify rehabilitation needs
Ottenbacher	1993	Meta analysis	3,717 (36 trials)	*		*	C	USA	SRU improves outcomes due to early intervention rather than duration of intervention
Wade	1993	Review		*	*		D		SRU improves outcome
de pedro Cuesta	1992	Review	20 RCTs	*	*	*	C	S	SRU outcomes do NOT confirm benefits especially in long term
Evans	1992	Review				*	D	USA	Review of effect of stroke on family functioning
Gladman	1992	Review				*	D	UK	Simple models are as reliable as complex models in predicting outcome

Granger	1992	Survey	7,905			*	C	USA	Discharge outcome after stroke
Ee	1991	Survey	100	*		*	C	Singapore	Identifies characteristics of patients associated with outcomes
Gibbon	1991	Survey	84 Staff	*			B	UK	Attitude survey
Shah	1991	Survey	1,274			*	C	Aus.	Profile and functional outcome
Wilson	1991	Survey	282						Knowledge of predictors can influence discharge planning
Anderson	1990	Review		*	*	*			SRU improves outcomes. Outcomes associated with socio-economic and educational level and early referral to SRU
Brandstater	1990	Review			*	*	D	USA	Brief review paper
Endres	1990	Survey	53	*	*	*	C	H	Small sample and all under 65 years. Different approaches to therapy surveyed
Ernst	1990	Review			*		D	Austria	Effectiveness of physiotherapy needs to be demonstrated
Friedman	1990	Experiment		*					Using ADL measures assists in selection and management of

									stroke patients
Harris	1990	Review		*					Benefits of SRU ambiguous. Plea for more research funding
Langton Hewer	1990	Review		*	*		D	UK	Brief review paper offering some insights from UK perspective
Osberg	1990	Survey		*					Possible to select out patients who will not benefit from SRU intervention at admission
Shah	1990	Survey	258	*	*	*	D	Aus.	Non medical factors influence rehabilitation outcome.
Smith	1990	Review				*	D	Aus.	Methodological problems complicate interpretation of outcome studies
Total number of papers addressing question 1				30					
Total number of papers addressing question 2					23				
Total number of papers addressing question 3						28			
Total number of papers addressing question 4							14		

Each of the four objectives, that is, structure, process, outcome and nursing contribution areas, each had a set of sub-questions which were used to guide the review. As each paper was reviewed any new areas of enquiry were noted and applied retrospectively to those papers previously considered. These sub-questions are used to guide the reporting of the systematic review in the following sections.

Whilst the 'spirit' of a systematic review has been used in this study there are times in the following report where reference is made to papers not identified by the search strategy. The exclusion criteria, of not including papers published prior to 1990, justified on the grounds of reviewing contemporary practice and making the review manageable, can inhibit the flow of discussion and leave critical analysis wanting. In order to overcome some of these difficulties and to set the discussion in context reference has been made to other supporting material. This is evident throughout the literature review but especially in the teamwork section.

The Nature and Extent of Stroke Rehabilitation

Introduction

As recently as 1995 in a comprehensive review of recovery from stroke comment was made that the role of stroke rehabilitation was poorly understood by many physicians (Speach & Dombovy 1995). The review further noted that within the last 15 years research had delineated the clinical course of recovery and begun to elucidate potential mechanisms of injury and recovery. To some extent the lack of understanding was due to the controversial nature of the findings concerning the effectiveness of rehabilitation following stroke. It is noteworthy that the clinical course of recovery following stroke may not be the same as the patient's perception of recovery from stroke and agreeing ways of defining recovery is plagued with difficulties.

Difficulties of definition

The difference in defining recovery from stroke according to the nature of the 'definer' is just one of the difficulties in evaluating the effectiveness of stroke rehabilitation. Kalra, Dale and Crome (1993) in a report of a controlled study demonstrating the effectiveness of a stroke unit suggested seven factors concerned primarily with study design and organisational effects which have complicated interpretation of findings from studies. These include patient heterogeneity, lack of stratifying patients, a variety of treatment settings, differences in quality and quantity of treatment received by patients, variation in resources allocated to stroke management and organisation of services, difficulties in disentangling the effects of different service organisations from the

effects of different treatments in terms of type and duration, and difficulties in assessing the impact of available services or new services because of lack of, or poor quality base line information. In their study they attempted to overcome some of these difficulties by choosing a prospective design and stratifying patients according to their expected prognosis and randomly assigning the patients to either a general medical ward or a stroke rehabilitation unit, that is different treatment groups. The randomisation occurred 2 weeks following stroke.

Despite the efforts of the researchers to reduce some of the problems which have led to difficulties in evaluating the effectiveness of stroke intervention a number of key problems remain. The measures taken by Kalra, Dale and Crome (1993) concentrated on study design and not organisational issues, however a number of shortcomings remain. Firstly the method of randomisation is not described and secondly the tool used to stratify the patients is not nationally or internationally recognised. The difficulty of predicting outcome, the expected prognosis, is unlikely to be resolved by the use of this tool. Prognostic indicators have been sought by many researchers (for example, Gladman, Harwood and Barer 1992) and whilst there is some agreement on those factors which are associated with favourable and unfavourable outcome clinicians continue to report on outliers who confound the variables (for example, Wade 1993, Eason 1995). Management algorithms specifying appropriate rehabilitation intensities and settings have been sought but as yet have not found a place in contemporary practice though Alexander (1994) suggests that they might be an appropriate first step in managing stroke.

Prognostic indicators

The tool used by Kalra, Dale and Crome (1993) to stratify the patients had previously been designed by Kalra and Crome (1993) and its value in selecting patients likely to benefit from stroke unit care described elsewhere (Kalra & Crome 1993). The tool, the Orpington Prognostic Score, is based on clinical determinants including level of consciousness, medical research council grading for power and the Hodkinson Mental Test Score, in essence it is a development of the Edinburgh Prognostic Score (Prescott, Garraway & Akhtar 1982) by the addition of the test for cognitive function. Whilst it is appropriate to include a test of cognitive function, especially for use with elderly people where stroke is frequently complicated by other pathology such as dementia. The tool does not include any non medical factors such as motivation (Speach and Dombovy 1995), or demographic factors and social factors (Wade 1993).

The major features predicting poor outcome after stroke are reduced level of consciousness, complete paralysis, hemianopia, any major cognitive deficit and urinary incontinence (Wade 1993). It is noteworthy however that a number of non medical factors also influence outcome especially home circumstances. Increasing age is associated with fewer rehabilitation gains as is living alone (for example, Shah, Vanclay & Cooper 1990).

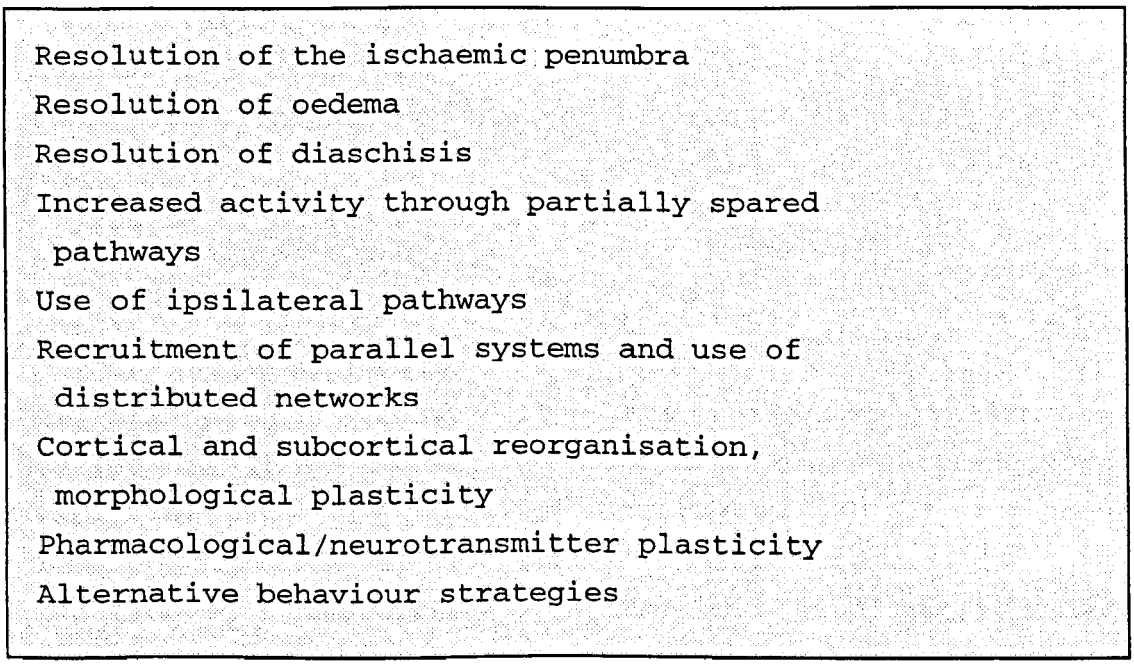
The tool devised by Kalra and Crome (1993) may be useful in determining which patients to select for care in the stroke unit but it may not be sufficiently sensitive to predict outcome following stroke. This concern becomes complicated by the issue of short term outcome versus long term outcome.

Poor outcome following stroke is frequently expressed by clinicians in terms of the patients' discharge disposition, with those unable to return to their pre stroke domicile and requiring nursing home care regarded not to have made a successful outcome. Functional outcome is also used by clinicians to quantify outcome with the Barthel Index (Mahoney and Barthel 1965) being the most frequently applied and accepted tool. There is however general recognition that outcome measures are not applicable to individuals but to groups of patients.

Mechanisms of injury and recovery

Speach and Dombovy (1995) discriminate between neurological recovery and functional recovery. Neurological recovery relates to improvement of physical impairment whereas functional recovery relates to the lessening of disability and handicap associated with the neurological injury. Neurological recovery is referred to as intrinsic recovery and recent research is providing some indications of the mechanisms of injury to neurones and the biological principles underlying recovery. These potential mechanisms have been summarised by Speach and Dombovy (1995) see figure 5.

Figure 5. **Potential Mechanisms underlying recovery from stroke**



These mechanisms overlap and may depend on each other over time. The potential, however, to enhance neurological recovery by manipulating the biological adaptability of the brain is now suggested to be relevant to clinical practice. In essence interventions which can hinder or facilitate recovery of cognitive and functional abilities following stroke require an organisation which allows pro-activity to occur rather than the therapeutic nihilism that has been associated with stroke management in non stroke unit settings in the past (for example, Kalra and Eade 1995, Gladman, Barer & Langhorne 1996). Dromerick and Reding (1994) highlight the need for a medically active stroke management service. Duncan, Ritchie, Jamieson & McLean (1995) comment that interventions to limit infarct size have re-kindled interest in the management of acute stroke. The recent findings of acute stroke management

studies provide a convincing argument for the establishment of acute stroke units and offer some understanding of the mechanisms occurring in rehabilitation interventions but they do not provide substantive material supporting the benefits of stroke rehabilitation units over general wards to date.

Objective of Stroke Rehabilitation

Stroke rehabilitation is defined by Lorish (1993) as the process of minimising or resolving a handicap or disability that results from the permanent impairment caused by the stroke. Lorish (1993) does not specify explicitly how he is using these terms but it can be implied from his review that disability refers to the functional consequences of stroke and handicap as the social consequences. This definition suggests that those patients who make a spontaneous recovery from stroke do not need rehabilitation and this principle is often adopted in practice with stroke units concentrating on "middle band" patients (Kalra & Eade 1995), that is, those who have neither a good nor a very bad prognosis. Speach and Dombovy (1995) suggested that stroke patients with mild or very severe deficits may have pre determined outcomes that are rarely changed through rehabilitation. Little is known about the effect of rehabilitation programmes on those making a spontaneous recovery and indeed it would seem good sense not to subject patients to interventions they do not require. It remains, however, open to question what effect interventions would have on this group of patients in terms of speed of recovery, functional ability or duration of effect. The exclusion of patients who are deemed to have a poor prognosis is more controversial as these patients are seen by many to be ignored or consigned to long term care now often provided

outside of a hospital setting. In clinical practice those patients with an initial poor prognosis may be transferred to the "middle band" group should their condition improve (Eason 1995). Debate has focused on the allocation of resources and some controversy still surrounds the issue of apportionment of treatment (Eason 1995). It is regarded by some as a waste of scarce resource to provide rehabilitation intervention to those who cannot gain by it (Osberg, Haley, McGinnis & DeJong 1990).

Therapies

The specific nature of rehabilitation interventions are largely unsupported by science. Substitution, that is, using the unaffected arm or a device is generally considered to be detrimental to recovery as it prevents practice and activity- dependent reorganisation of the nervous system. Conversely restitution strategies that may result in the most long term improvement take time and practice and thus are not the quickest way to improve function. Economic and social factors are therefore likely to dictate the therapies that the patients get. In practical terms the patients are likely to get only minimal amounts of therapy with therapy being given for only a few weeks and at best for an hour a day. A difficulty in determining how much therapy a patient receives a day rests with how it can be measured. Using patient records and notes made by members of the therapy professions suggests that patients receive on average half an hour of physiotherapy and half an hour of occupational therapy per week day. This finding has been supported by observational studies for example, Tinson (1989), Ellul, Watkins, Ferguson & Barer (1993) and Waters (1991) and by reports of stroke trials, for example, Garraway Akhtar, Prescott & Hockey (1980a and b) and Kalra (1994).

It is frequently contended that nurses assist patients to put into practice that learnt in therapy sessions, such as exercises or positioning, during non-therapy hours (for example, Lorish 1993) but this is difficult to quantify as is measuring how much time patients spend in self education and training. There is evidence to support behaviour specific actions and repetition in rehabilitation and to avoid standardised approaches making it difficult to determine exactly how much time is spent in rehabilitation activity.

A variety of therapeutic approaches are used in practice with an increasing emphasis on eclectic models, that is combining motor control and motor learning with cognitive and attentional mechanisms (Endres, Nyary, Banhidi & Deak 1990, Ernst 1990). Wade (1993) suggests that the main processes involved in rehabilitation are assessment, planning and intervention. Intervention is seen as having two components; care which maintains the status quo and treatments which effect change. The implications of this suggestion for nurses are discussed more fully later in the section 'Contribution of nurse in stroke rehabilitation'. The final process involved is evaluation or re-assessment. These processes are simply a restatement of using a problem solving approach, referred to as the nursing process in nursing and problem oriented medical records in the therapy professions. Wade (1993) expresses the general aim of rehabilitation as concerned with minimising disability, minimising patient and carer distress and maximising life satisfaction which extends rehabilitation beyond the individual and places them and the process within a family unit. These aims are laudable but abstract in operational terms.

Rehabilitation gains can be valued by patients and providers alike but the reasons may differ. Patients may have an intrinsic desire to regain health and independence and are perhaps therefore more favourably disposed to receive intervention which brings about this aim as soon as is possible. From the providers perspective quick recovery and short durations of in-patient stay help reduce costs and maintain patient throughput. These factors can result in stroke rehabilitation units being evaluated positively because they increase hospital throughput (Lorish 1993) and not because they provide for maximal levels of recovery (Speach and Dombovy 1995).

Rehabilitation Team

The number of situations in which no single discipline can effectively respond to the needs of the patient is increasing (Mariano 1989) and McEwen (1994) contends that the complexity of health care services is increasing. In terms of stroke rehabilitation the interventions are frequently referred to as a rehabilitation programme which implies some form of structure to the nature and extent of stroke rehabilitation. Speach and Dombovy (1995) refer to the stroke rehabilitation programme as adaptive recovery which occurs simultaneously with neurological recovery in which patients and their families are trained and educated to compensate for the neurological and functional deficits following stroke.

The cornerstone of modern rehabilitation philosophy and practice is team care (Strasser, Falconer & Martino-Saltzmann 1994) and this is a recurrent theme in the literature. It is not unique to rehabilitation as Waters and Luker (1996) suggest that multidisciplinary team work is central to the policy and practice of geriatric care

and go further in suggesting that it is this notion of multidisciplinary teamwork which distinguishes geriatric care from other medical specialities. Teamwork is however a quintessential element of rehabilitation. The inclusion of the term multidisciplinary clearly identifies that the patient interventions are from more than one health care occupational group. This is recognised as the approach in complex problems where the services of more than one occupational group are necessary to improve patient outcome, and there is recognition that each of the occupational groups have their own unique contribution to make in addition to the contribution to the team.

Within the rehabilitation team, professionals hold a variety of specialist skills in addition to core skills. Physiotherapists contribute specifically in the area of balance, progressing the patient towards dynamic balance and facilitating normal limb movement (O'Connor 1993). Occupational therapists can advise and teach dressing skills and adaptations to household items, nurses offer guidance on the management of continence, pressure areas and special needs such as support hose (Laidler 1994). Additionally nurses contribute to the psychosocial care of the patient. The specifics of how professionals engage in this activity is a product of their training and experience. Whilst they are trained to provide appropriate care and 'grey areas' exist between professional groups little attention is given to working in a team (Ovretveit 1994).

Summary

In summary stroke rehabilitation is an educative problem solving process which seeks to minimise or resolve the disabilities and handicap which result from the impairment

associated with cerebral damage. Recovery can occur spontaneously and some prognostic indicators, based on both clinical features and non medical features, have been identified though atypical cases are reported. Stroke rehabilitation can facilitate recovery and adaptation. It is a planned activity based on the interventions of numerous professional groups and whilst it currently occurs in a variety of settings the benefits of stroke rehabilitation unit have now been demonstrated. These benefits confer advantages to patients in terms of discharge disposition and functional outcome, especially in the short term, and to providers of services in terms of quicker throughput of patients and hence reduced costs. The duration of effect of rehabilitation is frequently not reported and it is unclear if this information is known.

The specific attributes of stroke units in conferring these advantages are less clear and the structure, process, outcome evaluative framework (Donabedian 1969) was adopted to guide the development of the clinical questions addressed by this systematic review. Closs and Tierney (1993) comment that the name Donabedian has become synonymous with the structure-process-outcome framework in nursing and further note that the vogue for outcomes research has led to a concentration on the third element rather than the totality of the framework. Whilst Donabedian (1969) offers some advice on the selection of approaches to evaluation, and some definitions as to what variables may be considered to be classified in each of the categories of his framework, others have found difficulty in applying the principles. Donabedian (1969) acknowledges that differences in opinion exist in terms of selection of approach and concludes that there appear to be two camps; those who favour process and those who favour outcomes. In essence the selection of a category or

categories from the framework depends on the question or questions being addressed. In this study all three categories, that is structure-process and outcome were selected as it was not known what effect, in any, each had on the effectiveness of stroke unit care.

The search of the literature identified 46 papers which go some way to address the clinical questions posed but it is noteworthy that most papers evaluated the effectiveness of stroke units in terms of patient characteristics in outcome studies and regard the stroke unit as a "black box" (Gladman, Barer & Langhorne 1996) through which the patient passes. Characteristics of stroke units are not generally reported and contextual differences are difficult to determine. Despite these difficulties it is possible to extrapolate some information and draw some tentative conclusions.

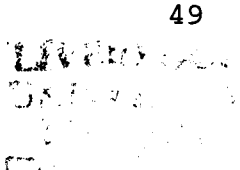
Evaluation studies concerning the effectiveness of stroke units and or interventions have been undertaken since the 1960's with an increase in research activity during the 1980's and 1990's. One consequence of this research activity has been the publication of numerous review papers and these will be considered where appropriate alongside reports of studies in the systematic review.

Structural Variables

Introduction

Expressed at its simplest 'organised care works'. This rather brief and simplistic conclusion can be drawn by review of the literature concerning the effectiveness of stroke rehabilitation studies. Of the 46 papers included in this systematic review thirty papers contained information from which issues pertaining to structural variables could be extrapolated. It is noteworthy that none of the identified papers were published specifically to address the structural variables influencing stroke rehabilitation. All too frequently commentators appeared content to make this statement without offering the reader any details about what is meant by 'organised care'. There also appears to be an implicit assumption that the nature and extent of stroke units in terms of size and staffing levels are known. For example, Alexander (1994) refers to intervention in a stroke unit in terms of the "standard multidisciplinary structure" but contextual differences alone render this description meaningless other than stating that stroke rehabilitation is organised around multiprofessional intervention. Dromerick and Reding (1994) acknowledge the contextual differences and note that the characteristics of a particular unit might influence a raft of issues including complication rates.

In a paper pre-dating the now generally accepted finding that stroke units are effective in reducing mortality and improving functional outcome Gibbon (1993) presented a comprehensive, but non-systematic review of the literature concerning the implications for nurses according to the structural approach adapted to stroke rehabilitation. Gibbon (1993) sought to identify three different but



commonly adopted approaches in stroke care namely, stroke units, a peripatetic service and applying the principles of stroke rehabilitation units to general medical wards. In the area of structural variables he concluded that no substantive evidence existed to support one approach over another but that stroke rehabilitation units appeared to have few if any disadvantages when compared to the alternative approaches.

Although providing no support for his claims Gibbon (1993) contended that stroke rehabilitation units provided an arena where stroke patients do not have to compete with patients with other (more acute) needs and that the team develop expertise, involve the family and provide better care through improved interprofessional communication and group effort.

Stroke rehabilitation appears to be the province of hospital care (Lorish 1993) rather than community care despite some innovative approaches to community based rehabilitation (for example, Forster & Young 1996). Kalra and Crome (1993) define the objective of stroke rehabilitation as being to ensure that patients' achieve their maximum potential and that the best value is being obtained from the money and effort expended. They emphasise the latter notion by references to changes in the British NHS and contend that cost effective rehabilitation is best achieved when patients most likely to benefit from intensive rehabilitation are selected for treatment in a stroke unit. The notion of selection will be discussed in the following section but it is noteworthy that intensive rehabilitation is perceived as the domain of in-patient services.

It is estimated that about 50% of all people with stroke in the UK are admitted to hospital with the balance being managed at home, usually by the patient's General Practitioner. The reasons for admission are noted to be as much to do with home circumstances and physician preference as medical condition but there is some suggestion that increasing numbers of stroke patients are referred to hospital as acute interventions develop and the value of stroke rehabilitation becomes more accepted.

Medical Stability

Acute stroke is a medical emergency and requires active management to prevent complications (Dromerick & Reding 1994). It appears that it is at this time when there is most physician involvement. The transition from acute care to rehabilitation is continuous and no discrete characteristics of patient progress were discerned in the literature. Dromerick and Reding (1994) regard it as inappropriate to refer to patients as 'medically stable' and hence fit for rehabilitation interventions. The evidence from their small study (n=100) found a significant number (13%) of patients returned from rehabilitation wards to acute wards because of complications requiring medical intervention and leaving patients unable to engage in rehabilitation activities.

Despite this, medical stability is frequently regarded as the time to arrange transfer from an acute setting to a rehabilitation setting, for example, Kalra, Dale and Crome (1993) reporting a randomised controlled trial referred to transferring patients from acute care to a stroke rehabilitation unit following acute management and making sure the patient was medically stable. Duncan et al.

(1995) also refer to ensuring the patient is medically stable and investigations completed prior to transfer.

Service Provision

The notion of separating acute care from rehabilitation settings appears to be generally accepted despite a lack of clarity as to when the transition should be effected and what criteria should be used. It is not always clear in the literature how the units are separated, for example, different areas of the same ward/unit or different hospital sites nor is there any apparent prerequisite to have stroke care under a particular medical speciality with reports of stroke care being part of general medicine, care of the elderly and neurology.

Jorgensen, Nayayma, Raaschon, Vive-Larsen, Stoier & Olsen (1995) reporting on a large cohort study from Denmark refers to the neurology department as managing all strokes with patients receiving acute treatment and rehabilitation at all stages of the in-patient care but it is not clear if different areas in the department care for patients at different stages of their illness. A report from a study from New Zealand (Eason 1995) makes it clear that the majority of stroke patients are admitted to a general medical ward with only a few (3 from 115 patients presenting with stroke during a 6 month period) being admitted directly to an assessment and rehabilitation unit. Patients remained on the general medical ward for 0-14 days with a median of 4 days, prior to assessment for selection to the assessment and rehabilitation unit.

A 3 month review of stroke management in Scotland (Duncan et al. 1995) noted that a 6 bedded acute stroke unit and 15 bedded stroke rehabilitation unit was established in

1993. The acute stroke unit directly admitted 45.6% of the patients with 47% being admitted to general medical wards. Transfer of 91% of these patients to the acute stroke unit whilst still in the acute phase was possible suggesting high turn over of patients in the unit. No significant differences in outcome was noted between those admitted directly to the acute stroke unit and those transferred in after an initial admission to a general medical ward but it would appear that to provide the same standard of care to all stroke patients that an increase in establishment of beds in the acute stroke unit was required. The numbers in this study are small (n=58) and whilst the establishment of stroke services over general care was demonstrated in terms of reduced length of stay, improved functional outcome, reduced complications and lower mortality the study is not large enough to demonstrate the effects of acute stroke unit/stroke rehabilitation unit patients over general medical ward/acute stroke unit/stroke rehabilitation unit and insufficient data is presented to evaluate this. Furthermore the study did not report any follow up of patients and hence the duration of effect is unknown. It is however noteworthy that a patient initially admitted to a general medical ward then transferred to an acute stroke unit and subsequently to a stroke rehabilitation unit is likely to feel unsettled and previous studies in other areas, for example, Mayberry and Kent (1983) in Coronary Care settings have suggested that patients dislike being relocated. Furthermore it appears antithetical to patient centred care as the patient has to fit the services rather than the services meeting the needs of the patient.

Kalra and Eade (1995) describe the stroke environment as a 13 bedded stroke rehabilitation unit with dedicated therapy areas on the ward. Patients are admitted to a

general medical ward prior to assessment and transfer to the stroke rehabilitation unit. The problems of caring for stroke patients in general medical wards has been highlighted by Gibbon and Little (1995) in a report of an action research project aimed at improving stroke care in a general medical ward. They reported that stroke patients frequently became the poor relation in a system designed for acute short term care and noted that nurses in a general medical ward openly referred to the needs of the acutely ill as taking precedence over the non acute needs of patients. They also reported that interprofessional working was at a level of co-operation rather than collaboration with therapy occurring outside of the ward area. This contrasts with the organisation described by Kalra and Eade (1995) where there were dedicated therapists (i.e. not treating other patients) and 'on ward' therapy provision.

The Kings Fund Consensus statement (1988) derived following a conference of experts in stroke management acknowledged that it was difficult to implement high quality care for stroke survivors on general medical wards (Langton-Hewer 1990) and Wade (1993) suggested that there was great scope for uncoordinated action given the many individuals who are involved in the care of stroke patients. An attempt has been made to determine if shorter lengths of stays in hospital are due to quicker functional recovery or to better organisation and co-ordination (Kalra 1994). This study found that once patients functional ability had peaked the stroke rehabilitation unit effected discharge of the patient quicker than the general medical ward. This might be attributable to better discharge planning and better organisation but equally it might be attributable to greater confidence and knowledge

in those who have developed expertise through working on a stroke unit.

Selection/Admission

As has previously been noted selection of patients for treatment in stroke units is common practice with a propensity for selecting "middle band" patients. This is especially so for stroke rehabilitation units rather than acute stroke units. It appears self evident to select those patients for treatment who can profit by it and this rule should apply equally to stroke patients as to other diagnostic groups in other areas. One of the key difficulties in stroke management is identifying those patients who will gain by stroke unit care.

Nine papers were identified which addressed the issue of selection and the associated issues of timing and development of criteria for selection. The identification of patients who may have a poor outcome is frequently possible at the time of admission when clinical signs, such as, loss of consciousness, conjugate deviation and urinary incontinence are found but recovery in seemingly unfavourable patients are reported and any selection procedures must be flexible (Kalra 1993). It may well be that selection of patients for rehabilitation can be judged more accurately over the days following stroke when a clearer picture becomes evident.

Acute stroke unit care is targeted at comprehensive assessment, completion of investigations, management of complications and achieving 'medically stability' in patients. Rehabilitation can also be commenced at this time. Assessment in acute stroke units frequently involves accurate diagnosis through detailed clinical examination

and computerised axial tomography scanning of the brain. Patient progress is often monitored by objective measures of functional ability such as the Barthel Index. This form of assessment can influence the decision to transfer the patient from the acute stroke unit to the stroke rehabilitation unit.

Delay of commencing rehabilitation is negatively evaluated with early outcome studies, for example, Garraway et al. (1982) concluding that improvements in functional ability are less to do with the amount of therapy and more to do with early post stroke interventions. Although not yet demonstrated by research it is likely that there are 'critical periods' for re-learning particular tasks just as there are 'critical periods' for learning in normal development (Speach & Dombovy 1995).

Determining precisely when the 'critical period' is would clearly be of clinical significance but until such understanding is reached the decision to transfer a patient to a stroke rehabilitation unit remains one of clinical judgement. Just how clinical decisions are derived is not clear and it is likely to be dependent upon clinical experience and intuition. Falconer, Haughton, Dunlop, Roth, Strasser & Sinacore (1994) in the USA regard the decision to transfer a patient to rehabilitation as based on clinical judgement and require that the patient is medically stable and that the patient requires the services of 2 or more of the rehabilitation disciplines, usually including nursing. The clinical judgement for admission to the unit is that of the evaluating physician which differs from discharge from the unit when the decision is team based. The admission policy is likely to reflect prospective payment and third party reimbursement rather than medical domination. That being said physicians

are the discipline most frequently cited as making the judgement to admit the patient even in health care systems which are free at the point of delivery (for example Kalra & Crome 1993 in the UK and Ee, Kwan & Tan 1991 in Singapore).

No details of how patients are selected for the rehabilitation unit in Singapore (Ee et al. 1991) are given though it would appear that "middle band" patients are being selected by the rehabilitation physician. The selection does however occur prior to admission to the rehabilitation unit. The delay between stroke and admission in this study is however great (5.01 +/- 5.28 weeks) when compared to Eason's (1995) study in New Zealand where the interval was 0-14 days with a median of 4 days. The studies conducted by Kalra (Kalra & Crome 1993, Kalra, Smith & Crome 1993 and Kalra & Eade 1995) considered that two weeks post stroke was the most appropriate time. Evaluation at this point in time showed significant correlation with eventual outcome. Endres et al. (1990) however found no significant difference between those admitted to the stroke unit before 5 weeks and those admitted greater than 5 weeks post stroke. It is noteworthy however that the patients recruited to the Hungarian study (Endres et al. 1990) were all aged below 65 years which is atypical when compared to age ranges in other studies.

Clinical judgement was however augmented by the use of the Orpington Prognostic Score (Kalra 1993) in Kalra's studies which includes assessment of functional ability (Barthel Index) and cognitive ability (Mental test score). Those with low prognostic scores were not however dismissed from rehabilitation and patients considered to have rehabilitation potential irrespective of a low Orpington

Prognostic Score were admitted on the clinical judgement of the assessor. Just how this judgement was made is not clear but it does weaken the prognostic value of the Orpington prognostic score tool as an instrument to select patients most likely to benefit by stroke rehabilitation interventions. Kalra's latter study (Kalra & Eade 1995) extended the assessor beyond the physician to include the judgement of the physiotherapist. Whilst in reality the views of other members of the rehabilitation team are sought no studies were identified which specifically explored the effect of this. Admission selection of patients for stroke unit care using an assessment tool, a modified version of the Barthel Index was studied by Eason (1994). He demonstrated that this was effective in selecting "middle band" patients. Not all studies reported the patient selection process and in some instances, for example, Jorgensen et al. (1995) and Duncan et al. (1995) imply that all patients progressed into rehabilitation.

Staff Attitudes

Staff attitudes have been considered in this review to be structural variables but it is acknowledged that attitudes can and do change. Seven papers were identified as addressing the clinical question "do staff attitudes influence the effectiveness of stroke rehabilitation?"

Some caution has to be exercised in associating attitudes with behaviour as previous studies have demonstrated that attitudes do not always correlate with behaviour (for example, the classic study of racial attitudes, LaPiere 1934). It is however asserted that health care professionals must have an appropriate attitude to working with specific groups of patients. Although not specific in its meaning Kalra (Kalra, Dale & Crome 1993) refers to his

'interest' in stroke rehabilitation whereas Duncan et al. (1995) express the view that staff working in stroke units need to be 'sympathetic' to the issues of "good quality basic medical and nursing care".

The notion of 'interest' is imputed to have some bearing on attitude as it is unlikely that a physician with no interest in a particular clinical condition would elect to care for that specific diagnostic related group and additionally would be unlikely to pursue academic enquiry into the effectiveness of clinical interventions. As such Kalra and colleagues could be regarded as holding positive attitudes towards stroke rehabilitation.

It would not be unreasonable to assume that all those who care for stroke patients hold positive attitudes, that is they are favourably disposed to working with this group of patients. Few studies have specifically examined staff attitudes towards particular client groups and stroke patients are no exception. As previously noted stroke patients are cared for in a variety of hospital settings most frequently general medical wards and care of the elderly wards in addition to rehabilitation and stroke units.

Friedman (1990) and Eason (1995) suggest that nurses and doctors prefer treating other patient groups who are less dependent and whom they perceive as more responsive to treatment. The comparatively prolonged duration of in-patient stay, especially in the elderly, further lead staff to hold negative attitudes and regard stroke patients as 'bed blockers'. That is, preventing other acute (and thus more 'exciting') patients from being admitted. Friedman (1990) likened caring for stroke patients to caring for patients with fractured neck of

femur in that the majority of "subjects are elderly and have other medical and social problems". It is noteworthy that patients with perceived social problems may not be admitted to a stroke unit (Alexander 1994) which serves as an overt reminder of the power of attitudes on behaviour.

A survey of nurses attitudes (Gibbon 1991) drew similarities between caring for stroke patients and caring for cancer patients in that both groups are frequently seen as having high mortality, an absence of cure and a period of incapacity/dependence. These factors perhaps contribute to the development of negative attitudes or ambivalence and may be associated with the 'acute care mind set' (Wade 1993). That is, the focus of hospitals, and thus a major part of health care professionals training, is in acute care of short term illness and staff can develop a sense of helplessness when dealing with patients who do not fit this stereotype. Developments in the treatment of fractured neck of femur and cancers, reducing length of stay and dependence, have not been paralleled in stroke management and leave this group exposed to the negative attitudes held towards "heavy" patients.

Kalra, Dale and Crome (1993) suggested that improved outcomes observed in patients managed in a stroke unit may be in part due to a positive attitude amongst nurses. (Just why nurses are singled out from other professional groups is not clear). Whilst not offering any evidence for the claim of positive attitudes amongst the nurses they do report that nurses on the stroke unit act as informal therapists and it could be that the additional therapy and not the nurses attitudes which is the factor which is positively influencing patient outcomes.

A survey of nurses attitudes towards stroke patients in general medical wards was undertaken by Gibbon (1991) using a modified attitude questionnaire previously developed by Hamrin (1982). The questionnaire had reasonable internal consistency (Cronbach's coefficient alpha >0.60) and achieved a 90% response rate. Using the previously generated bandings (Hamrin 1982) he was able to place respondents into one of three scoring bandings. Most nurses fell into the medium scoring group (n=58,69%) with a few in the high scoring group (n=13,15.47%) and a few in the low scoring group (n=5,5.95%). These findings suggested that the majority of nurses responding from the general medical wards are ambivalent towards stroke rehabilitation as they exhibited low intensity of expression. Whilst not reaching statistical significance, probably due to small sample size, there was a tendency for the higher qualified nurses to hold more positive attitudes that the lesser qualified nurses.

Gibbon in a further study (Gibbon & Little 1995) demonstrated an improvement in attitude score following an educational programme though again this did not achieve statistical significance. These studies focused on nurses attitudes rather than the attitudes of all professional staff and were conducted in general medical ward areas and not stroke units. Lewinter and Mikkelsen (1995) commented that little research on staff attitudes toward stroke rehabilitation has been undertaken and cited Kaufman and Becker (1986) as concluding that stroke rehabilitation is not a priority area for medicine.

In brief the recurring theme in the literature making reference to staff attitudes towards stroke rehabilitation is that it is important to create the "right climate" for rehabilitation. Stroke patients are however seen as having

protracted periods of hospitalisation and not being particularly responsive to treatments resulting in them being negatively evaluated by staff. This is especially so in general medical ward settings where it is acknowledged as difficult to provide rehabilitation (Langton-Hewer 1990) when the stroke patients are competing for the attention of professional staff who are prioritising their interventions according to acuity of need. No studies were identified which have measured the attitudes of nurses towards stroke rehabilitation in stroke units although Kalra, Dale and Crome (1993) suggest that nurses in stroke units have positive attitudes.

Process Variables

Introduction

As previously indicated the majority of published papers evaluating the clinical effectiveness of stroke interventions have concentrated on reporting the outcomes of interventions rather than either structural or process aspects. From the 46 papers included in this review 23 papers presented information from which process variables could be extrapolated. Speach and Dombovy (1995) and Gladman, Barer and Langhorne (1996) refer to this omission as the "black box" through which patients pass on the stroke unit, hopefully towards a better outcome. The process variables that have been identified in the literature are issues of communication and collaboration and to a lesser extent collaborative 'goal setting'. In some ways the overarching issue of work environment or team climate is related to staff attitudes but as team climate is dependent upon interaction amongst professionals these issues are considered as process components in this study.

No specific definitions of team climate were evident in the published papers and the following working definition is proposed based on that of Reichers and Schneider (1990):-

> "climate is widely defined as the shared perception of 'the way things are around here'. More precisely, climate is shared perceptions of organisational policies, practices and procedures both formal and informal."

Anderson and West (1994) suggest that team climate has several different aspects including:

- communication patterns
- participation
- safety
- norms
- cohesiveness
- task style
- vision
- innovativeness

which are amenable to documentation or measurement though no studies were identified in this search which utilised this approach. The underlying issues of communication, collaboration and goal setting were however identified in the stroke literature, albeit in only a few papers.

The notion of the team climate influencing the effectiveness of stroke intervention can be gleaned from Duncan et al. (1995) when they refer to "dedicated stroke unit staff ..." suggesting that it is not just a case of managerial organisation to have these staff not only care for this specific group of patients but that the staff

selected have a willingness to care for a unidiagnostic group albeit with individualised and challenging needs.

The staff members of individual stroke teams are referred to in some papers, for example, Kalra and Eade (1995), Falconer et al. (1994) and Lorish (1993) and a core team of professional staff can be identified, that is the doctor, nurses, physiotherapists and occupational therapists. In addition to this core, a range of other professional staff drawn from health and social services are identified. These include the speech and language therapist, clinical psychologist, pharmacist and support staff as appropriate and social workers and stroke family support workers supported by the stroke association. The number of professional staff involved with any one particular patient can therefore vary considerably. As Wade (1993) has suggested, with such a range of professions involved in the care of one patient a lot can go wrong in terms of organisation.

The Kings' Fund Consensus statement (Kings Fund Forum 1988) whilst pre dating the inclusion dates for this systematic review by 2 years drew attention to the lack of co-ordination between disciplines, the lack of planning consistent with patients' needs or abilities and the breakdown of communication between professionals, carers and patients. It would appear that there was general agreement with these sentiments but few studies reported specifically the nature and extent of the problems. This lack of baseline data makes it difficult to evaluate the effectiveness of stroke units in providing "value added" organisation over that which perhaps could have been achieved in other organisational approaches. There is scope for measuring team climate in a before/after design where stroke units are planned but not yet established.

Given that some of the problems identified in the Kings Fund Consensus statement were attributable to interprofessional jealousies it seems difficult to identify just how the creation of stroke units overcomes some of these issues. The challenge to the traditional supremacy of doctors, the increased assertiveness of nurses and creation of new professional roles are some of the issues likely to give rise to interprofessional jealousies. The consequence of these factors can give rise to role overlap, rivalry and poor communication. The negative perception that one group holds towards another is exacerbated when they are in a competition over a field of specialism, a treatment or a particular client group. Rehabilitation, especially when this is focused on one diagnostic related group e.g. stroke, would appear to be exactly right for a climate of conflict.

The importance of the context of health care cannot be underestimated and the current situation of evidenced based practice, value for money, down sizing of health care provision, job insecurity, decreased duration of in-patient stay are all likely to militate against interprofessional collaboration just at a time when such collaboration may have acted to demonstrate the need to maintain or strengthen the need for a multidisciplinary team.

The absence of studies to suggest that interprofessional communication improves in stroke units suggests an area for research. It is open to question whether stroke units have created a climate where an enhanced exposure to the working practices of other professional groups leads to a greater understanding of the contribution which other professionals make but Kalra and Eade (1995) have drawn

attention to "on ward" therapy and therapists as improving the total amount of therapy time and improving the functional outcome of patients.

Nurses as Therapists

The specific contribution of the nurse in stroke rehabilitation is discussed in the following section but for the sake of completeness the issue of nurses acting as therapists is discussed here. Increasing therapy input in the form of nurses acting as therapists is referred to by, for example, Lorish (1993), Kalra and Eade (1995) and it appears that nurses require additional training to do this suggesting that basic nurse preparation fails to adequately prepare nurses to undertake this activity in clinical practice. It is not clear how nurses acting in a therapist role is achieved in practice as no reference is made to enhanced staffing establishment or re-deployment of duties to other health care professionals. It is of course possible that the re-focusing of nursing activity on therapy input leads to a decrease in patient dependency and hence time gained by not attending to highly dependent patients can be used for "on ward" rehabilitation activity.

Patient Assessments

One of the key process components identified in the literature is the comprehensive assessment of the patient by members of the multidisciplinary team which allows for subsequent identification of patient problems and goal setting. It is not clear in the literature how the assessment by various members of the team convey this information to professional colleagues or the patient or

arrive at common problems or goal. It has been traditional practice for each discipline to hold their own records for patients leading to some criticism that goals are those of the various professionals and not the patient (Gibbon, Watkins, Downes-Grainger & Barer 1993, McGrath & Davies 1992). Kalra and Fowle (1994) devised a computer based integrated system for multidisciplinary assessments in stroke rehabilitation which overcame some of the problems of uniprofessional records in that all professions were aware of information and plans of the other professional groups. Initial resistance to the innovation was reported to have been overcome and the system was regarded as not requiring "significant extra resources". Despite this there is little evidence of wholesale adoption of this approach.

Communication

Interprofessional communication is deemed to be a further key process variable influencing the effectiveness of stroke units and the weekly team meeting of the "entire rehabilitation team" to "discuss the progress of each patient" is advocated, for example, Gibbon and Little (1995), Jorgensen et al. (1995) Kalra and Eade (1995). Little detail of the nature of these meetings is reported and the use of the terms 'case conference' and 'team conference' do little to clarify the processes involved.

Kalra and Eade (1995) provide the clearest indication of the purpose of the meeting as they comment that the weekly meetings result in decisions concerning the establishment of individualised, realistic and time framed objectives. Gibbon and Little (1995) refer to the weekly meetings as providing the opportunity for the "sharing of

rehabilitation targets" which suggests that patient goals may be decided out with the meeting by individual professionals or coalitions within the entire team.

No details are reported regarding the conduct of these meetings in terms of who 'chairs' or leads the meeting. Informal communication, a likely feature where ward based therapy and therapists have been established, is not reported despite the likely value of such exchanges.

Communication with patients regarding progress and goals appears to be vague with Kalra and Eade (1995) suggesting that information is communicated by the "relevant member of the multidisciplinary team". A potential care gap is evident here as one professional assumes that another has undertaken the task. A similar situation can occur with communication to relatives. Lorish (1993) however suggests that it is the nurse who interacts with the family because of the presence of the nurse in the evenings. In situations of open visiting by relatives it may well be that other or all professions interact with the patients' relatives.

Goal Setting

Whilst part of interprofessional communication is the establishment of individualised, realistic goals. This is central to the process activity of rehabilitation. A problem solving approach is common practice in nursing, medicine and therapy professions though the semantics differ from one profession to another. Wade (1993) suggested that rehabilitation is a reiterative problem solving process and it may well be that the indisputable nature of this results in it being unstated in reports. Additionally the individualised nature of goal setting

means that few studies, if any, report the process of goal setting as most studies are concerned with groups of patients and not individuals. For the purpose of this review rehabilitation targets, objectives, goals, and aims were all considered to be goal setting.

Lewinter and Mikkelsen (1995) in a qualitative study reported that therapists saw goal setting as considering 'stroke related factors' (e.g. severity) and 'person related factors' (e.g. social situation) and felt that goals should not be imposed on patients but negotiated with them. Therapists in this study discriminated between short term practical goals and long term goals and the researchers suggested that goal setting was influenced by a number of underlying implicit assumptions. Firstly was the assumption of the patient returning to community living as opposed to nursing home care, secondly was the assumption of achievement of maximum physical function and thirdly the resumption of a social life. The post stroke patients quality of life is often neglected in reports of studies with a tendency to report functional outcome only. This is illustrated by Oczkowski and Barreca (1993) who suggests using the Functional Independence Measure (Keith, Granger, Hamilton & Sherwin 1987) as a prognostic tool to predict the obtainable level of functional recovery and set realistic goals.

There appears to be some inherent tensions in goal setting if they are to a) be generated on assumptions (Lewinter & Mikkelsen 1995), b) be realistic (Kalra & Eade 1995), c) be specific to individual patients (Jorgensen et al. 1994) and negotiated with patients (Lewinter & Mikkelsen 1995). Folden (1993) utilised a guided decision-making intervention with stroke patients to assist them make decisions regarding their self care goals. The subjects

(n=68) in this study had all been admitted to a rehabilitation centre but it is not clear what the interval between stroke event and admission to the centre was but it is clear that they were all middle band patients and self selected to be in the study. All expected to make rehabilitation gains towards self care and independence. The intervention was found to be statistically significant (MANOVA F=33.36, p=0.000) supporting the hypothesis that those who received guided decision-making intervention after stroke would perceive themselves as more capable self care agents. This study lends support to the notion of generating patient centred, rather than professional centred, goals which are specific and realistic.

Outcome Variables

Introduction

As has been previously stated the majority of published papers have considered patient outcomes as the variable to demonstrate the effectiveness of stroke units or post stroke interventions. The review identified twenty eight papers which addressed the issues of outcome following stroke. The primary purpose of these reports was to disseminate findings about factors which influenced stroke outcome. As a consequence, unlike process factors the outcome variables are reported overtly rather than requiring extrapolation. Despite the plethora of papers published in this area over the past 30 years the results of trials have been controversial with almost as many studies reporting improved outcomes as studies reporting no significant difference. One noteworthy feature of these reports is the absence of reporting patients' subjective experiences of stroke rehabilitation (Lewinter and

Mikkelsen 1995). Anderson (1992) has however published a comprehensive text which gives a considered account of the aftermath of stroke and examines the patients experiences and patterns of coping after stroke. The instruments used in Anderson's study could be utilised in further research to consider the value of stroke units from patients' perspectives.

Stroke units have been noted to be selective in admitting patients, in particular policies are often in place to ensure that "middle band" patients are admitted. That is those patients in whom it is considered will benefit from the interventions. Speach and Dombovy (1995) have suggested that severely affected patients may have pre-determined outcomes which are not modified by intervention but Kalra, Dale and Crome (1993) have suggested that admission policies need to remain flexible.

Given the aim of stroke rehabilitation, and hence stroke units, is to maximise self care and independence it would appear self evident not to admit those who appear to be making a spontaneous recovery and those who appear highly likely to die imminently. Selection, as previously discussed, is not however without its difficulties as prognostic indicators apply less to individuals than groups. Maximising self care and independence is frequently translated into functional ability and discharge disposition.

Discharge disposition relates to whether the patient is able to return to their own (pre stroke) home or require admission to a skilled nursing facility, a nursing home, which can meet the patients' needs in activities of daily living. A discharge to a nursing home is negatively evaluated and patients are perceived as failing the

rehabilitation programme(Osberg et al. 1990). Those returning to their pre stroke domicile are positively evaluated irrespective of how much assistance from other family members is required. This information is frequently omitted from reports with a measure of functional ability standing as proxy. Early studies have however shown that what a patient does and what they are capable of doing can differ (Andrews & Stewart 1979). Patients returning to live alone clearly require to be more independent that those with a primary carer but the attitudes of primary carers as to how much they are prepared to undertake to keep the person at home is variable (Evans, Hendricks, Haselkorn, Bishop & Baldwin 1992). Whilst stroke units have demonstrated a reduced duration of in-patient stay there is an absence of reporting of duration of effect of specialist stroke rehabilitation and hence it remains uncertain if stroke units confer long term advantages.

A broad question therefore is "who goes home?" and a number of studies have tried to determine answers to this question and attempts to derive predictive models, based on the information known at the time of admission, have been made (Alexander 1994). It is worth reiterating that informed decisions can only be made on available information and information that is known at the time of admission may be different from that known after a period of hospitalisation. A number of variables have been examined which include "stroke related" factors and "person related" factors. For example, age, sex, severity, home circumstances, and on-set admission interval.

Age

An association between outcome and age is reported often with increasing age being associated with longer periods

of rehabilitation and less improvement in functional ability (Alexander 1994). It may well be however that age is a proxy for a raft of other issues, such as general infirmity, home circumstances and co-morbidity. As the incidence of stroke increases with age greater numbers of elderly people have stroke than younger people. The increase in life expectancy has resulted in increasing numbers of elderly people in the population and concern has been expressed over the burgeoning costs of health care with the expected incidence of stroke (Kalra, Smith & Crome 1993).

Some distinction between "young elderly" (65-75 years) and old elderly (>75 years) has been made in some studies e.g. Ee, Kwan and Tan (1990) in an attempt to evaluate the effectiveness of stroke interventions in relation to age stratification. Ee, Kwan and Tan (1990) found no significant difference between the young elderly and the old elderly in activities of daily living scale scores or mobility scale scores and concluded that age should not be an important criterion in selecting patients for rehabilitation. Kalra, Smith and Crome (1993) similarly found that elderly patients could be selected for stroke unit admission and once managed in a stroke unit had outcomes comparable to younger patients. Dromerick and Reding (1994) found no significant correlation between the patients age and the number of complications experienced post stroke. Whilst there is a correlation between poor outcomes and age (Granger, Hamilton & Fiedler 1992, Alexander 1994) it is not clear how this fact can be used to predict outcome for individual patients and it is not clear in the Orpington study (Kalra & Eade 1995) as to which factors influenced 'case finding' for patients failing to achieve a "middle band" score but subsequently securing admission to a stroke unit.

Wilson, Houle and Keith (1991) reporting a study which aimed to enhance understanding of the factors influencing discharge disposition found that age independently did not make a contribution to the prediction of discharge disposition and age was not related to discharge status. Kalra, Smith and Crome (1993) suggest that elderly patients have lower levels of expectation of well being and as such suggest that it might have been possible to discharge elderly patients home with higher levels of disability. They also suggest that the community support systems for the elderly (N.B. this paper pre dates the Care in the Community Act, DoH 1991) facilitate discharging higher dependent elderly patients. Just why the elderly do less well in terms of rehabilitation gains is not clear. Granger, Hamilton and Fiedler (1992) suggest that it might be attributable to lower cognitive/learning capacity, but equally it may be due to co-morbidity or motivation due to lower expectations and depression.

Sex

Less association between sex and outcome is reported with some papers suggesting no difference in outcome between males and females (e.g. Ee,Kwan & Tan 1990, Shah, Vanclay & Cooper 1991). Others suggest that for males the importance of having a primary carer at home is greater than for females (Wilson, Houle & Keith 1991). Slight increases in incidence are reported for females which is probably explained by greater longevity in females and greater risk of stroke with increasing age. This can act as a confounding variable in stroke effectiveness trials.

Severity

The severity of the initial stroke is strongly associated with outcome with those patients who are severely affected having poorer outcome than those who are less severely affected. As has been previously noted stroke units frequently operate a policy which excludes the admission of the severely and less severely affected, admitting only "middle band" patients. The net effect of this admission policy is a less heterogeneous group of patients but the nature of stroke prevents the resultant group being considered as truly homogenous.

In the Danish outcome study (Jorgensen et al. 1995) all stroke patients were admitted to the neurological department irrespective of age and severity where they each received acute treatment as well as rehabilitation. This study illustrates the association between severity and outcome as identified by discharge disposition. All patients were graded into one of four categories on admission (very severe, severe, moderate and mild) using the Scandinavian Stroke Scale. Of the 1,197 patients recruited into the study 223(19%) were graded as very severe, 171(14%) severe, 316(26%) moderate and 487(41%) mild at the time of admission. Two hundred and fifty patients (21%) died during hospital stay and 177(15%) were discharged to nursing homes and 770(64%) were discharged to their own homes. The rate of patients discharged to their own home increased gradually with decreasing initial stroke severity from 14% of the 'very severe' group to 34% 'severe', 74% 'moderate' to 93% with 'mild' strokes.

The association between functional status, as measured by the Barthel Index, and initial stroke severity mirrored the relationship between severity and discharge

disposition. Eighteen per cent of the patients in the initial 'very severe' group were discharged to their own home and this rose to 78% of the 'severe' to 91% of the 'moderate' and to 96% of the patients with initially 'mild' disability. Patients with no initial disability did better than patients with moderate disability ($p=0.0002$) and patients with 'moderate' disability did better than patients with 'severe' disability ($p=0.02$) and patients with 'severe disability' did better than patients with 'very severe' disability ($p=0.00001$). Similar findings were reported by Alexander (1994) where patients admitted with 'modest' functional disability were almost always discharged home (96%) irrespective of age. It was contended though not supported that discharge home of elderly people (>75 years) was dependent on home circumstances and the health of the spouse.

Home Circumstances

Variables such as pre stroke living arrangements, marital arrangements and occupation have been considered in outcome studies in stroke rehabilitation. Lorish (1993) in a review paper summarised the non stroke factors of low pre morbid intelligence, lack of spouse or other family members and low socio-economic class as possible negative predictors of outcome. Shah, Vanclay and Cooper (1990) found that married patients achieved greater levels of rehabilitation over single (not married and widowed) patients ($n=258$, $p=<0.05$) but found no significant differences in outcome according to occupation. Wilson, Houle and Keith (1991) found no significant difference for marital status but suggested that this may be due to sampling error. Wilson et al (1991) reported that their stroke unit selected patients who had a spouse or other family members which suggests that the unit considered

these as valuable factors in predicting those likely to return home.

Family Involvement

Nine papers were identified which referred to the effect of family involvement on the effectiveness of stroke rehabilitation. None of the papers offered any objective evidence of a positive family influence. Evans, Hendricks, Haselkorn, Bishop and Baldwin (1992) in a review paper suggested that few studies had yielded a positive influence but that a negative influence on family functioning had been documented. These included marital relations, family members health, and social functioning. This review paper (Evans et al. 1992) specifically focused on the quality of life and well being of patients' families rather than on the patient themselves.

The majority of stroke survivors reside at home and the alterations in family lifestyle can be remarkable with the problems most reported including role changes and social disability (Smith 1990). Anderson (1990) in a review of stroke rehabilitation outcome studies up to 1980 suggested that family income and involvement in support of the patient predicted the outcome of whether a patient went home or to an institution (nursing home). Discharge to a nursing home is considered to be a negative post stroke outcome indicator (Evans et al. 1992) and Eason (1995) suggests that patients discharged to their own home may benefit by the informal contribution to rehabilitation provided by family members and experience an enhanced quality of life by being in their own home environment.

It was contended by Evans et al. (1992) that the principal benefactors of a good outcome following rehabilitation was

the family as the greater the independence of the patient then the less personal care they will have to provide. In their review they considered their previous empirical research (Evans, Bishop & Haselkorn 1991) which found that patients who reported unsatisfactory home care tended to have dysfunctional families. The origin of family dysfunction after stroke is suggested to lie in the discrepancy between 'what the person can do versus what is expected of them'. This notion has been alluded to in other reports and it is suggested that the rehabilitation gains made in stroke units are lost once the patient returns home because of the over protectiveness of the family (for example, Anderson 1990).

This argument has been used to support family members being involved in stroke rehabilitation activities whilst the patient is still in hospital as it provides opportunity for family members to observe the abilities of the patient, allows the staff to educate family members and can lead to involving family members in reinforcing appropriate patient behaviours (Kalra & Eade 1995).

Kalra, Dale and Crome (1993) suggested that the traditional approach to stroke rehabilitation, that is non stroke unit care, led to a breakdown of communication between professional staff and family members and by inference are perhaps suggesting that family involvement is just one of a raft of organisational issues addressed in stroke unit care which positively influences the effectiveness.

Wilson, Houle and Keith (1991) suggest that the presence of a spouse is positively related to discharge home and Alexander (1994) precluded stroke patients without identified families able to care for the patient post

rehabilitation from admission to the unit. Although no attempt to exclude 'familyless' patients from admission was reported by Wilson, Houle and Keith (1991) it remains open to question what influence this has on staff approaches to the patient and the setting of rehabilitation goals. The decision by Alexander (1994) to exclude 'familyless' patients appears to be pre-judging the possible rehabilitation gains that can be made by this sub group of patients and further studies are required before such a decision could be recommended for stroke unit admission and care.

This is particularly important for those patients who choose to return home despite moderate to high levels of disability in activities of daily living as identified by the Barthel Index (Watkins, Gibbon, Downes-Grainger, & Barer 1993). Many of these patients are elderly and may have lower expectations of well being (Kalra, Smith & Crome 1993) but there is little evidence that they receive rehabilitation in the community. Gibbon (1994) in a survey of district nurses in one health district found that district nurses did not have a major role in the rehabilitation of stroke patients in the community but valued their contribution in caring for the needs of the chronically ill and in situations where family members were unable to cope. This study was small and restricted to one health district and though it is likely that different patterns of service have developed in different districts, there is no evidence to suggest that rehabilitation of stroke patients in the community is an active area of activity. A further interesting finding was the symbolism that was attached to hospitals by district nurses in that they saw it as the arena for providing rehabilitation and as such this acted to negate their

responsibility for providing rehabilitation nursing in the community.

This reactive form of health care may be cost effective (Speach & Dombovy 1995) in the short term but it is probably sacrifices the maximum level of recovery and independence. Little research if any appears to have been undertaken in regard to the patients expectations of rehabilitation and who rehabilitants regard as contributing significantly to their recovery.

The contribution of the nurse in stroke rehabilitation

Introduction

In addition to the structure, process and outcome variables influencing the effectiveness of stroke unit care, the researcher, as a nurse, was particularly interested in gaining insight into the nurses' particular contribution to stroke care. Myco (1984) had previously contended that the role of the nurse was unclear and furthermore suggested that nurses needed to develop confidence through knowledge and skills to structure a role in stroke patient care. Gibbon (1993) concluded a review by claiming that the contribution of the nurse to the rehabilitation of stroke patients was understated and hence nurses were undervalued and under used.

In this systematic review sixteen papers were identified which gave some insights into the nurses contribution or perceived contribution (10 from electronic databases, 6 from the hand search). The reference to nurses in these papers did little more than provide either a passing reference to rehabilitation nursing or describe (briefly) what nurses did or others expected them to do. This review was particularly concerned with the contribution of the nurse in 'post stroke care'. Care was considered to be activity which maintains the status quo whereas treatment was concerned with a situation of change (Wade 1993). This distinction between care and treatment is likely to do little to enhance the nurses contribution to stroke rehabilitation. Nurses pride themselves on being the caring profession, that is, "doing" things for and too

patients, but this understates the educative, independence promoting interventions nurses deploy.

Some reference is made in the literature to rehabilitation nursing but no operational definition of this is provided. Rehabilitation nursing can be considered to be a "broad church" with client groups including for example, chronic mental illness, substance abusers and chronic physical illnesses. Whilst the overall aim may be consistent the objectives for clients in each of these very different groups will differ as will the skill and knowledge base of the nurses. Currently rehabilitation nursing is not considered in the United Kingdom to be a branch of nursing but an integral part of each of the branches. Additionally few nurses have been formally prepared through post registration education and training to be rehabilitation nurses and only a few courses are currently validated to equip nurses with the theory and practice for rehabilitation nursing. Many post registration or post graduate courses in rehabilitation are multiprofessional in nature and a nurse undertaking such a course would be expected to transfer the principles of rehabilitation to the context of nursing. It could therefore be argued that if nurses have acquired the necessary knowledge and skills as advocated by Myco (1984) to develop a specific role in stroke patient care then it has been done so largely through clinical experience and not through formal preparation.

The issues which can be identified in the literature pertaining to the contribution of the nurse are:

- Rehabilitation Nursing — Ee, Kwan and Tan (1990), Falconer et al. (1994)

		Ottenbacher and Jannell (1993),
■	Co-operative working	Duncan et al. (1995), Gibbon and Little (1995), Henderson, Morris, Young and Pentland (1990), Kalra, Dale and Crome (1993), Kalra, Smith and Crome (1993),
■	Guided decision making	Folden (1993)
■	Assessment of Function	Alexander (1994), Kalra and Fowle (1994)
■	Therapy/Activation	Gibbon and Little (1995), Henderson et al. (1990), Jorgensen et al. (1995)
■	"Carrying on"	Gibbon (1993), Lorish (1993), O'Connor (1993)
■	Managerial (1993)	Gibbon (1993), O'Connor
■	Family Communication Hendricks (1993)	Evans, Connis, Bishop, & Haselkorn (1994), Lorish
■	Community Services	Gibbon (1995), Ray and Nair (1991)

These 9 areas of activity can be grouped into 2 categories:-

Team Working including, co-operative working, rehabilitation nursing, therapy, guided decision making and "carrying on"

and

Management including, family communication and assessment of function, community services.

This categorisation is consistent with the conclusions of an earlier review (non systematic) of the literature conducted by O'Connor (1993).

Rehabilitation Nursing

The papers identified in this systematic review of the literature did not set out to consider 'rehabilitation nursing' and it therefore is not surprising that no attention is given to it in the literature. The absence of operational definitions and contextual differences as to what constitutes rehabilitation nursing makes it difficult if not impossible to draw conclusions regarding the influence of this activity on stroke rehabilitation patient outcomes.

It is suggested that 'rehabilitation nursing' in addition to working in co-operation with other professionals also involves or implies some form of specific therapeutic role. O'Connor (1993) in his review of the literature suggested that the role of the nurse was therapeutically non-specific. He further contended that the nursing contribution to stroke rehabilitation as 'understudy' to other professionals. A view previously articulated by Waters (1986) in general rehabilitation, rather than stroke rehabilitation settings.

The nurse patient relationship purports to be a vehicle for therapy and it may be that this relationship leads to patient motivation but no specific evidence was found in the literature.

Team Working

Teamwork as a category of activities suggests that nurses in stroke units work co-operatively with other professional groups and with each other. On first sight it is difficult to see how this co-operative working differs from other health care situations. One key difference is the number of different health care professions who intervene in the patients care. Routinely stroke patients receive care and treatment from doctors, nurses, physiotherapists and occupational therapists, and where necessary speech and language therapists, clinical psychologists and dieticians. Each of these professional groups have separate educational preparation and hence different occupational socialisation. This is considered to give rise to "professional goals" rather than "patient centred goals" when planning care and rehabilitation (Henderson et al. 1990). Professional goals can cause conflict amongst team members as they vie to champion "their" particular goal for the patient. Establishing patient centred goals was suggested by Henderson et al. (1990) to be the first step to interdisciplinary collaboration.

Little evidence of the extent of interdisciplinary collaboration can be obtained from the literature with no objective information reported. Duncan et al. (1995) simply contend that high quality management is dependent on close co-operation between the disciplines involved in stroke care. Kalra, Dale and Crome (1993) suggest that the better patient outcomes observed in their stroke unit trial may be influenced by better multidisciplinary collaboration but offer no insights into the data on which this claim was based. In their study of stroke unit care for the elderly (Kalra, Smith & Crome 1993) they contend

that the multidisciplinary team approach to care improves patient outcomes because of improved communication and better planned discharges. They further contend that elderly care wards, where multidisciplinary team working is normal practice, result in similar patient outcomes to stroke units which suggests that stroke units expedite appropriate discharges through team working. Whilst no firm conclusions can be drawn it may well be that nurses have developed the knowledge and skills to plan and execute patient discharges. That is, if a team are not confident that a patient has reached a point of recovery compatible with a return to a pre stroke domicile then the patient may not be discharged home.

Gibbon and Little (1995) went some way to providing objective criteria of enhanced interdisciplinary collaboration by referring to the establishment of weekly team meetings but provided no information as to the processes occurring during these meetings. For their particular study this was a development but weekly team meetings for members of the rehabilitation team appear to be commonplace and they appear to be symbolised as the event where the team meets to discuss team issues. It is not clear however whether these meetings are convened to establish the patients rehabilitation goals or to share the goals established outside the meeting by an individual or a coalition. Additionally it is not clear as to whether the meetings are concerned with reporting past patient progress or future potential.

Carrying on Role

It might therefore be suggested that whilst the nurse is acting as an understudy for other professionals that she is providing therapy or monitoring the medical condition

of the patient. In terms of providing the therapy Waters and Luker (1996) reported that nurses saw themselves as having a secondary function in rehabilitation whilst carrying on the therapy interventions in the absence of the therapists. The policy of ward based therapy appears to facilitate this. Little appears to be known about 'how much' or 'how often' therapy is 'carried on' by nurses and what influence this has on the effectiveness of rehabilitation. Waters and Luker (1996) suggested that it was of value and Wade (1993) emphasises the reiterative nature of interventions necessary for successful rehabilitation.

Although some studies reported the amounts of therapy time provided by physiotherapists and occupational therapists no attempt appears to have been made to quantify the time nurses spend in 'carrying on' therapy or promoting independence. To a great extent this is a method problem as insufficient is known about what specifically constitutes therapeutic endeavour and therefore how to measure it either in quantity or quality. The contribution of the nurse to motivating the patient or encouraging self exercise or mental rehearsal is invisible and appears to be unreported.

Guided Decision Making

The study by Folden (1993) in the United States of America suggests that guided decision making can assist patients to increase their perceptions of self care ability after stroke. The intervention is based on Orem's theory of nursing system (Orem 1971) which suggests three modes of intervention. The supportive educative mode is used for guided decision making and the nurse works with an individual patient focusing on their unique self care

needs. By using a mixture of supporting, guiding and teaching the nurse encourages the patient to learn new skills and adapt to their new health status. Whilst elaborate in procedure the nub of the intervention is the development of agreed unique patient centred goal. Given that it is specific to the patient and behavioural in its terminology the nurse can work with the patient to reach the goal or revise the goal to be more realistic.

Folden (1993) using a quasi experimental design reported significant differences between the experimental group (guided decision making) and the control group (standard intervention)($f=33.36$, $p=0.000$) in terms of patient perception of their self care ability. The influence this had on patient outcomes in terms of duration of in-patient stay, discharge disposition and functional ability is not reported. This type of intervention may therefore be useful for establishing patient centred goals but further research is needed to determine if patients with enhanced perceptions of self care agency have improved outcomes.

Management

The contribution of the nurse to stroke rehabilitation in terms of managerial/administrative function has its origins in the 24 hour responsibility that nurses assume, and is strengthened by the nurse usually being in the ward/unit manager position. The importance of co-ordinating care appears to be regarded as self evident in the literature. The 'key worker' system, where a member of the professional staff (not necessarily a nurse) of the rehabilitation team takes the lead for an individual patient or group of patients, can be perceived as both an opportunity and a threat to the 'traditional' role of the

nurse in rehabilitation settings. It provides an opportunity for nurses to develop a specific therapeutic function in keeping with the aspirations of O'Connor (1993) but is a threat to co-ordinator role where nurses have traditionally valued their contribution. As with the notion of rehabilitation nursing this issue did not gain prominence in the literature retrieved for this study.

A management approach, e.g. case management, for the care of groups of patients, usually referred to as Diagnostic Related Groups (DRGs) is becoming increasingly common as cost containment becomes paramount. This is especially so in the USA but there is some empirical evidence of the use of the case management system in the UK. Case management, with its attendant critical path method (CPM) prescribes the events in terms of sequence which best facilitate the patient through an increasingly complex health care system. An experimental study (Falconer, Haughton, Dunlop, Roth, Strasser & Sinacore 1993) tested the effects of CPM on the costs and outcomes of inpatient team stroke rehabilitation. Patients admitted to a large in-patient rehabilitation hospital were randomly assigned to either a rehabilitation team trained in CPM (n=53) or the standard care team (n=68). Results showed no significant difference between groups in length of stay, hospital costs, or functional status on discharge. The researchers concluded that CPM was not effective with this DRG and suggested that the unpredictable outcomes associated with stroke patients may have militated against the system of CPM. They also suggested that stroke rehabilitation is influenced by specialisation, professional issues and fragmented medical care.

This study had a small sample and whilst the results are not in favour of CPM it has not discouraged the Centre for

Case Management (Boston USA) from pursuing the development of critical care paths for stroke patients.

Family Communication

The nurses contribution to family communication is more than providing 'progress reports' to relatives when they visit. Evans et al. (1994) describes the nurses contribution to the preparation of families of persons suffering stroke. The notion of the nurse liaising with the patient's family was the subject of the review paper by Evans et al (1994) who see stroke as a family dilemma. They identify the need for family assessment, education, advocacy and counselling to foster treatment compliance and social support. The over protectiveness of family members towards stroke patients has been identified as one of the leading causes of decline in functional ability, (Andrews & Stewart 1979) and prolonging the gain of early functional recovery requires patients families to be involved in the rehabilitation programme. Outcomes following stroke are recognised to be influenced by non-medical factors such as family support (for example, Speach and Dombovy 1995, Anderson 1990).

A randomised controlled trial undertaken in Sweden (Indredavik, Bakke, Solberg, Rokseth, Haaheim & Holme 1991) found considerable benefits to the Stroke Unit when outcome measures were compared to general medical wards. The stroke unit had a rehabilitation programme and a nursing programme and a Stroke Nurse had responsibility for liaising with the family giving some insights into the role(s) of the nurse. It is noteworthy that this report refers to the 'rehabilitation and nursing programme' giving the impression that the two are different. The

nurses in this study acted to liaise with all other members of the multidisciplinary team in addition to the patient's relatives thus ensuring the compatibility of the nursing and therapeutic team goals. Kalra, Dale and Crome (1993) suggested that breakdown of communication between professional staff and carers was responsible for some of the failings of general medical ward care suggesting that at least in part the nurse acting to liaise with other professionals and family members is making a contribution to the effectiveness of stroke units.

Nurses are frequently cited as the occupational group that are with the patients the most, expected to reinforce the rehabilitation programme (Henderson et al 1990) and liaise with the patient's family. More recently the therapeutic nature of nursing has been receiving attention (McMahon & Pearson 1991) and the importance of establishing the appropriate organisational framework is emphasised (Wright 1991). The therapeutic nature of nursing has been suggested to be influenced by 'presencing', that is the presence of the nurse with the patient appears to improve patient outcomes as well as patient satisfaction (Benner & Wrubel 1989).

Assessment of Function

Although not widely reported there is some evidence that nurses in stroke rehabilitation settings are contributing to the assessment of patients' functional ability. Alexander (1994) reports that nurses rated patients on admission to and discharge from the stroke unit using the Functional Independence Measure; a scale to measure functional independence. It is not clear from this report whether the measurement of patients functional independence was routine practice or introduced for the

duration of the study. Similarly it is not clear how the nurses used the information or what influence it had on their practice.

Kalra and Fowle (1994) in a report of the introduction of computer held records reported that nurses were asked to enter assessment data into the computer records and nurses claimed that this was an additional burden upon them. Initially they were dubious about the value of such information. Nurses were responsible for the assessment of patients pre-morbid functional abilities using the Frenchay Activities Index (Holbrook & Skilbeck 1983). Once admitted however the assessment of functional ability was the responsibility of therapists. This study did demonstrate that it was possible to introduce a computerised multidisciplinary assessment system but it did not demonstrate how such information improved patient care, especially nursing care. The improvements in data sets for audit purposes is not challenged.

Community Services

One of the prime goals of rehabilitation is to return the patient to the community, preferably to their pre-stroke domicile (Anderson 1994). It is axiomatic that the patient needs therefore to be independent in activities of daily living or to be able to cope with the services provided. The hospital is therefore seen as the place to provide rehabilitation services rather than the community. This might be considered appropriate for the post acute phase but even in this phase concern has been expressed about undertaking rehabilitation activities in an environment unfamiliar to the patient and not representative of the home circumstances (Speach & Dombovy 1995). A further complicating factor is the gradual loss of functional

ability over time and uncertainty as to duration of effect of rehabilitation interventions.

Ray and Nair (1991) tested the effectiveness of a community rehabilitation programme. The approach was to select 'middle band' stroke patients from a cohort of 244 stroke patients admitted to an acute hospital in Singapore following stroke. The classification of patients' rehabilitation potential was based on age, sex, level of motivation to go through rehabilitation, and level of family support. Those with 'good and fair' rehabilitation potential (n=139) as measured by the return of sitting and standing balance were referred directly to the Senior Citizens Health Care Centres, the standard management, and those with poor rehabilitation potential (n=22) were provided with nursing home care, again the standard management. The balance, 83 patients, were discharged home with follow up care from specially trained staff nurses who undertook home visits to promote independence in mobility. Ten areas of patient activity were studied namely, concentration, head control, return of tone, sitting balance, standing balance, mobility, power of upper and lower limbs, co-ordination and continence and improvement by 12 weeks had occurred in 84% of the patients.

These findings suggest that a community rehabilitation programme confers advantages to 'middle band ' patients but it is not clear as to how they would have normally been managed outside the experiment. In essence these patients exhibited the 'normal' pattern of recovery following stroke, that is, sitting balance comes before standing balance which comes before mobilising, and that most stroke patients get better and do so within 3 to 6 months post stroke. Additionally return of continence is a

useful prognostic indicator. Barer (1989) found that patients who regain control over continence usually go on to make a good recovery, just how this relationship works is not fully understood. A psychosocial explanation has been suggested in that those who regain continence are more motivated to reach independence than those who remain incontinent. It may also be explained by sociobiological primacy. The sociobiological view claims that skills are regained in reverse order to those lost. Hence continence is a marker of higher levels of functioning indicating that recovery is more likely. Given the nature of nursing and the amount of time, effort and knowledge spent dealing with continence it is surprising that further studies exploring the relationship between continence, recovery from stroke and nurses role have not been undertaken. Restoration of continence may be a useful goal of therapy in which nurses could have a major input.

The absence of a control group in Ray and Nair's study makes drawing conclusions difficult and the return to independence seen in a high proportion of patients may be attributable to being in their own homes as much as the nurses visits. Alternatively the nurses visits may have a had a 'Hawthorn' effect. It might be suggested that these 'middle band' patients would have been given further rehabilitation whilst hospitalised and that this programme simply brought the discharge home date forward. What is not clear from this report however is nature and extent of the normal domiciliary rehabilitation service or community nursing service in Singapore. Given that the nurses in this study were specially trained it may be inferred that nurses in the community do not routinely provide this level of service, nor does their training routinely equip them to meet the self care demands of stroke patients. It is noteworthy that the special training was given by

physiotherapists suggesting that the knowledge and skills required to meet these patients needs was within the domain of the therapists. Why the therapists were not utilised to provide the domiciliary service is unclear. It is not known if a domiciliary therapy service operates in Singapore or if there is a short fall of therapists to provide the care for the number of patients in need.

Ray and Nair (1991) do not report on how the nurses reacted to assuming this new knowledge and skill base nor do they report on how the physiotherapists reacted to sharing their knowledge and skills with another professional group. Further it is not clear whether these staff nurses were dedicated to stroke rehabilitation patients or whether they had a mixed case load. The findings of this study, whilst encouraging in terms of patient outcomes, lack practical application unless the context of the study is more fully reported.

In the UK Gibbon (1994) reported a qualitative study exploring the District Nurses perceived contribution to the care and management of stroke patients in the community. This study was conducted in one health district only and hence the generalisability of the findings are limited. This study however suggested that District Nurses did not have a major role in the rehabilitation of stroke patients in the community and generally became involved in their care once the patient's chronicity had reached a point of inability to meet self care demand. Community nurses considered that rehabilitation was the province of hospital services and had unrealistic perceptions of the intensity of rehabilitation undertaken in hospital. The notion of 'top up' rehabilitation to maintain the independence of the patient in their own home was not evident in the literature.

Whilst the studies of are few in number it suggests that rehabilitation of stroke patients by nurses in the community is not routinely undertaken. When and where it is undertaken it appears to require additional preparation of the nurse.

Limitations to the Systematic Review

The inclusion and exclusion criteria adopted in this review of the literature resulted in contemporary research based papers being reviewed to address the clinical question and associated objectives. They operated to reduce the volume of papers to be considered to a manageable number but at a cost of excluding 'classic' papers and of adopting the more conventional cascade mechanism for paper identification.

The electronic databases whilst providing an ease of access to material do not contain all the relevant papers, or search terms used in electronic databases are not applied to all appropriate papers. One consequence of this is a failure to identify and retrieve appropriate papers. An attempt to overcome some of these omissions was made by hand searching identified journals. The journals hand searched in this study included the *Journal of Advanced Nursing*, *International Journal of Nursing Studies*, and *Journal of Clinical Nursing* on the basis that these are United Kingdom based periodicals which contain robust peer reviewed primary research papers about nursing. It is accepted as a limitation of this study that further journals, which may have contained appropriate papers, were not subject to hand searching.

Identified papers invariably referred to previously published research which frequently fell outside the inclusion year for this review. Not only does this lead to the exclusion of evidence it can result in a lack of logical flow to the review. To overcome some of these difficulties appropriate papers were referred to which fell out with the inclusion criteria.

The reliance on electronic databases as the initial search point allows the reviewer to select English language papers but 'grey material (i.e. that not published or not published in indexed journals) is not identified. English language papers include studies conducted in countries other then the UK but contextual and cultural differences are not readily identifiable unless the reviewer has a sound working knowledge of these other countries health care systems.

A primary limitation to the systematic review is the generation of a clinical question which is tangential to the primary research. In this review, for example, answers to the question "why are stroke units effective?" were sought and the search terms generated a wealth of papers. The published papers were however addressing the question of "are stroke units effective?" and as a consequence there was limited reporting of the interventions or other factors which could have an influence on the effectiveness of stroke units. This aspect of systematic reviews has been referred to in the literature, for example, Gladman, Barer and Langhorne (1996) who suggest that the attributes of a stroke unit conferring advantages in terms of patient outcomes are not known as the trials did not systematically measure the interventions.

An attempt to elicit the structure and process variables form research reports which are primarily considering the effectiveness in terms of patient outcomes runs into danger or trading depth for breadth.

Conclusions to the Systematic Review

The search protocol identified 46 papers which went some way to address the clinical question and associated objectives. In brief the clinical question sought to identify why stroke units are more effective than general medical wards in improving patient outcomes following stroke.

The objectives were to identify the structure, process and outcome variables which were influential in conferring advantages to patients cared for in stroke units. In additional there was the specific question relating to the contribution of the nurse to stroke rehabilitation.

The nature and extent of stroke rehabilitation was discussed first. Stroke rehabilitation was defined as an educative problem solving process which seeks to minimise or resolve the disability and handicap which result from the impairment associated with cerebral damage. It was acknowledged that recovery can be both spontaneous and facilitated. The aim of stroke rehabilitation is to maximise the patients independence in daily living activities which include psychosocial adjustments as well as physical recovery.

Stroke rehabilitation takes place in a variety of settings but there is an increasing tendency to manage stroke patients in stroke units. These have been shown to reduce mortality, improve functional outcome and decrease the

duration of in-patient stay but the characteristics of stroke units which confer these advantages are not clearly identified. It was however possible to draw some tentative conclusions and these have been used to guide this study.

The structural variables identified as having a possible positive influence are organised stroke services. Managing stroke patients in acute stroke units and subsequently, especially "middle band" stroke patients, in stroke rehabilitation units have been shown to increase functional ability and decrease mortality. The organised service is in part dependent upon the appropriate selection of patients for admission to the stroke unit and prognostic indicators have been identified. These include stroke and non-stroke factors. The therapeutic approach adopted by the rehabilitation team and the amount of therapy appears to have less influence than the early commencement of rehabilitation.

The attitudes of professional staff working in stroke rehabilitation teams do not appear to have been systematically studied, the exception being nurses attitudes towards stroke rehabilitation in general medical wards. These were however found to be largely ambivalent. Despite this there are claims in published papers that suggest that staff attitudes influence patient outcomes.

The process of rehabilitation is reiterative and the influence of the rehabilitation team working in close co-operation is suggested to have a positive influence though no studies were identified which explored team working in stroke units. Comprehensive identification of patients' problems and patient centred goal setting had some support in the literature but a number of inherent tensions were

identified and no studies were identified which explored rehabilitation team goal setting.

Interprofessional communication was suggested to enhance multi professional team working and a weekly team meeting was the most frequently cited method of operationalising this factor. It was not however clear what processes occurred during these weekly team meetings.

Patient outcome variables have been used to demonstrate the effectiveness of stroke units especially discharge destination and functional ability. The influence of non-stroke factors such as family support is however understated. The major influence on patient outcomes appears to be age and severity of stroke. The greater the persons age the longer the period of rehabilitation and the less the functional improvement. Similarly the more severe the initial stroke then the poorer the patient outcome. Patients experiences of rehabilitation have been under reported and hence 'key contributors' to rehabilitation in the perception of the patient is unknown. Waters (1991) interviewed elderly patients who had undergone rehabilitation, some of whom had had a stroke, but she noted that it was difficult to get the patient to share their experiences of rehabilitation.

The contribution of the nurse to stroke rehabilitation appears to be concerned with 'team working' and 'management'. In terms of team working there was little evidence to support the influence this has with no studies identifying the therapeutic nature of nursing or the time spent in 'carrying on' therapeutic endeavour. The lack of understanding about what interventions influence patient outcome leads to methodological difficulties in pursuing studies in this area. It is suggested that understanding

what patients consider to have helped them in their recovery is an essential first step to understanding the contribution of the nurse.

The weight of evidence is that stroke units confer "value added" benefits to stroke patients and care providers alike but there is little evidence to support those factors which have been suggested to confer these advantages. The factors suggested include:

- team working
- team culture
- professional staffs' attitudes
- rehabilitation goal setting.

There is a need for further study of these aspects of stroke unit care. The most promising approach to such study would require the application of multiple research methods, in a process of methodological triangulation. The theoretical underpinnings and methodological principles are discussed in the following chapter.

Section II

Chapter 3

Theory and Methodological Principles of the Study

Introduction

The purpose of this chapter is to explain the theory and the methodological principles which informed the design and execution of the study. The study design draws upon Orem's Self Care Deficit Theory of Nursing (Orem 1971, 1991) and this is discussed first. The methodological underpinnings are presented which include a brief overview of the philosophies of quantitative and qualitative research, triangulation and practitioner research. The approach taken is broadly descriptive, and in keeping with the principles of practitioner research. The study sought to provide insights into the nurses' contribution to the multi-disciplinary team in a stroke unit.

Aims of the study

This study arose out of concern about the care and rehabilitation of stroke patients in hospital, in particular the contribution of the nurse to stroke patient rehabilitation. A variety of managerial organisational approaches have been, and are, deployed in different hospitals and whilst differences can be expected between one provider unit and another, little is known about the aspects of stroke patient care which confer advantages to patients in terms of their recovery.

The aims of this study are therefore:

- To describe the context within which stroke rehabilitation occurs with particular emphasis on the contribution of the nurse

- To explore the existence and extent of collaboration between the professional staff involved in stroke rehabilitation.

To explore service users perceptions of the key contributors to their rehabilitation.

Selection of Theoretical Framework

Theory development in nursing has appeared to have attracted more critics than proponents and much of this can be explained as an inherent scepticism of all things theoretical in a practice based discipline. Much theory development in nursing has its roots in North America and this has done little to make it relevant to nurses in the UK as the language used is inaccessible and not related to practice. Indeed nursing has been practised for centuries apparently devoid of a clearly articulated theory and in a sense this is both cause and an effect of the lack of development of nursing as a profession (Walsh 1991).

One theory which does appear to have philosophical integrity and a goodness of fit with stroke patients is Orem's Self Care Deficit Theory of Nursing (Orem 1971, 1991). This theory, originally developed in the USA, has been used in the UK and British nurses are able to identify with its concepts. Although conceived to be applicable to a variety of, if not all, nursing situations, it appears promising as a theory to explore the structure, process and outcome variables influencing the care of stroke patients.

Description of Orem's Model.

Orem's Theory or the Self Care Deficit Theory of nursing evolved over four decades from individual work and through collaboration with colleagues and began with a search for the uniqueness of nursing within health care (Hartweg 1991). Three interrelating theories underpin Orem's general theory of nursing namely

- the theory of self care,
- theory of self care deficit and
- the theory of nursing systems.

A number of assumptions underpin the theory though Orem now refers to them as premises (Orem 1991) these are:

- Human beings require continuous deliberate inputs to themselves and their environments in order to remain alive and function in accord with natural human endowments.

- Human agency, the power to act deliberately, is exercised in the form of care of self and others in identifying needs for and in making needed inputs.

- Mature human beings experience privations in the form of limitations for action in care of self and others involving the making of life sustaining and function-regulating inputs.

- Human agency is exercised in discovering, developing, and transmitting to others ways and means to identify needs for and make inputs to self and others.

- Groups of human beings with structured relationships cluster tasks and allocate responsibilities for providing care to group members who experience privations for making required deliberate input to self and others.

The three interrelated theories each have a central idea and a set of propositions. The central idea describes the focus of the proposition and the propositions serve as principles (Orem 1991).

The theory of Self Care explains that self care is seen as learned behaviour, that is, purposeful in action, it is culturally derived and varies by the social experience of the individual. Orem (1991) contends that self care is not instinctive or reflexive but performed rationally in response to a known need. It is noted that having the ability or potential does not necessarily mean that an individual will seek knowledge or take action. This implies that some motivational aspects of human behaviour are not yet fully understood.

The central idea to 'the theory of self care deficit' is that individuals are from time to time affected by limitations which prevent them meeting their self care needs. The limitations may be health related or due to factors internal or external to the individual. For example, a health condition may be a road traffic accident, an internal factor may be age and an external factor may be poverty. A person suffering a stroke is likely to suffer a self care deficit as a consequence of the health condition, which may be exacerbated by age and poor housing.

Orem's 'theory of nursing system' is key to understanding her general theory of nursing as she incorporates into it the theories of self care and self care deficits. It is therefore referred to as the Unifying Theory, it is through this theory that the relationship between nursing actions and role and patient actions and role are explained. The theory proposes an answer to the 3 key questions:-

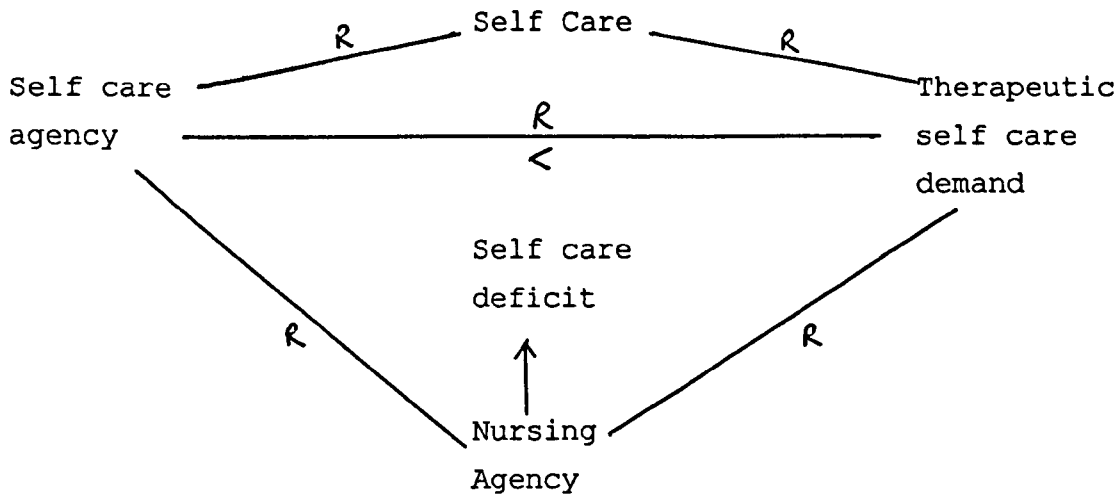
- What do nurses do when they nurse?
- What is the product made by nurses?
- What results are sought by nurses?

The first of these 3 questions can be conceptualised as process variables and the latter two as outcome variables. One of Orem's insightful observations was to highlight the ability of nurses to do nursing, but their inability to talk about nursing (Hartweg 1991). This observation, perhaps true still today, reinforces the 'doing' nature of nursing but fails to deliver the explanation for nursing interventions so crucial in today's health care market and so crucial for understanding the contribution of nursing.

The central idea underpinning the 'theory of nursing system' is that the nurse has the abilities to determine if nursing intervention is necessary. There is no valid basis for nursing service if the nurses' abilities are no greater than, or only equal to those of the individual (patient) or his/her family (Johnson 1989). This process involves the nurse determining if there is a deficit or potential deficit between the abilities of the person (self care agency) and the demands in the area of the health of the person. Where a deficit relationship is identified the nurse is responsible for designing a plan of care which clearly identifies what is to be done and by whom, for example, the nurse , the patient and his/her family. The combined actions are collectively called the nursing system. The goal of the nursing system therefore, is to increase the patient's capabilities to meet a need, or requisite, or to decrease the demand(s).

This theoretical framework can be illustrated :-

Figure 6 Orem's Theoretical Framework (Orem 1971)



R = relationship
R< = self care deficit exists in that self care agency is less than therapeutic self care demand.

Self care agency and therapeutic self care agency demand are influenced by a number of factors which Orem refers to as Basic Conditioning Factors, these include age, gender, developmental state, sociocultural orientation, health state, family system factors, patterns of living, environmental factors and resources available. These basic conditioning factors also influence the development of the nurse (nursing agency) but additionally the nurse is also influenced by a number of other specific factors such as nurse training and nursing experience.

Self care requirements are grouped into three types; universal, developmental, and health deviation. Universal self care requirements are those which all human beings require throughout the lifespan, but can be adjusted for age, environment and other factors.

Universal Self Care Requirements

Maintenance of:-

- Sufficient intake of air
- Sufficient intake of water
- Sufficient intake of food
- Provision of care associated with elimination
- Balance between activity and rest
- Balance between solitude and interaction
- Prevent hazards to human life, human functioning and well being

These universal self care requirements can be conceptualised as activities of (daily) living as referred to in the nursing literature, for example, Henderson (1966) and Roper, Logan & Tierney (1985). The *Development Self Care Demands* are of two types, firstly maturational and related to universals and secondly situational and related to self care that prevents or overcomes effects of life events that can impact on human development.

The final group of self care demands are *Health Deviation Self Care Demands* which include

- Seeking and securing appropriate medical assistance
- Being aware of and attending to effects of ill health
- Effectively carrying out medically prescribed diagnostic, therapeutic and rehabilitative measures
- Being aware of and attending to effects of intervention
- Modifying the self concept in accepting ones health status and the need for health care
- Learning to live with the effects of ill health and treatment measures in lifestyle that promotes continued personal development.

Orem (1991) additionally identified 6 factors which constitute the nursing focus:

1 The patient's health state
2 The physician's perspective of his/her health state
3 The patient's perspective of his/her health state
4 The health results sought for the patient and their relationship to the patient's health and his/her effective living
5 The patient's requirement for therapeutic self care
6 The patient's abilities and inabilities to perform therapeutic self care.

These factors tend to focus on holism, and whilst nurses lay claim to this approach there are other disciplines which also make overt claims to be holistic in their approach including physiotherapy and occupational therapy. This could give rise to some difficulty in isolating the nursing contribution to care from the care provided by the therapy disciplines.

Orem (1991) proposes that the delivery of nursing care is by one of three systems of nursing which are implemented according to the needs of the patient and are in some ways associated with the dependency of the patient on the nurse and the acuity of the illness. The *wholly compensatory system of nursing* is assumed when the patient is unable to engage in any self care activities and supports and protects the patient whilst accomplishing the patient's therapeutic self care. The *partly compensatory system of care* is implemented when a partnership can be engaged in to meet self care demand. Actions are performed by both the nurse and the patient. The final system is that of *supportive educative* where the patient accomplishes self care through the nurses action of education and encouragement.

There are five general methods of nursing intervention:

- acting or doing for another
- guiding another
- supporting another physically or psychologically
- providing a developmental environment
- teaching another

which can be used in each of the nursing systems. In a rehabilitation setting the emphasis is in facilitating the transition from wholly compensatory to supportive educative care.

The systems of nursing are not necessary linear but in the case of the stroke patients a linear pattern may be discerned. The immediate post stroke patient may loose consciousness and be dependent upon wholly compensatory care. Given that stroke patients tend to get worse before they get better (Barer 1990) wholly compensatory care may be required for all stroke patients as the nursing interventions may place the patient in a dependent position. As the patient stabilises and a more accurate assessment of the self care deficits emerge there follows a period of partly compensatory care. This will of necessity vary from patient to patient in terms of inputs and duration. The supportive educative system will be required in two broad areas. Firstly those actions concerned with adapting to self care with residual disabilities following stroke and secondly those actions to be taken to prevent a recurrence of stroke where a stroke prevention measure can be undertaken.

A theory in nursing provides for a useful frame of reference in which to practice nursing or provide a framework within which research findings might be

interpreted (Stevens Barnum 1994). Clarifying the meaning of nursing, and justifying the nurses contribution to practice in a multidisciplinary team are just two of the benefits of theories of nursing in nursing practice (Pearson & Vaughan 1989).

These two interrelated points have particular significance for this study. The contribution of nursing to rehabilitation activities and settings is not fully known, especially in physical rehabilitation settings and the apparent separation of therapeutic activity from nursing activity does little to clarify the issue. The justification for nurses in a multidisciplinary team has taken on new significance in the climate of the 'new' NHS.

It is within the climate of the 'new' NHS that this study is undertaken. The focus of the study is on the rehabilitation of stroke patients and the contribution of and interrelationships between the various key members of the rehabilitation team. In essence the person following stroke can be conceptualised as fitting into one of three post stroke categories:

a) Those who will get better spontaneously
b) Those who will have residual deficits affecting their ability to self care
c) Those who die.

All three 'groups' of patients will require some form of health care, at least initially, but it is the 'middle band' of stroke patients, those who have self care deficits that are the focus of this study. It is this group of patients, constituting about one third of those who suffer stroke, that are usually recipients of rehabilitation interventions. Rehabilitation can therefore be

conceptualised as sitting between the stroke affected person and the self caring 'recovered' post stroke person.

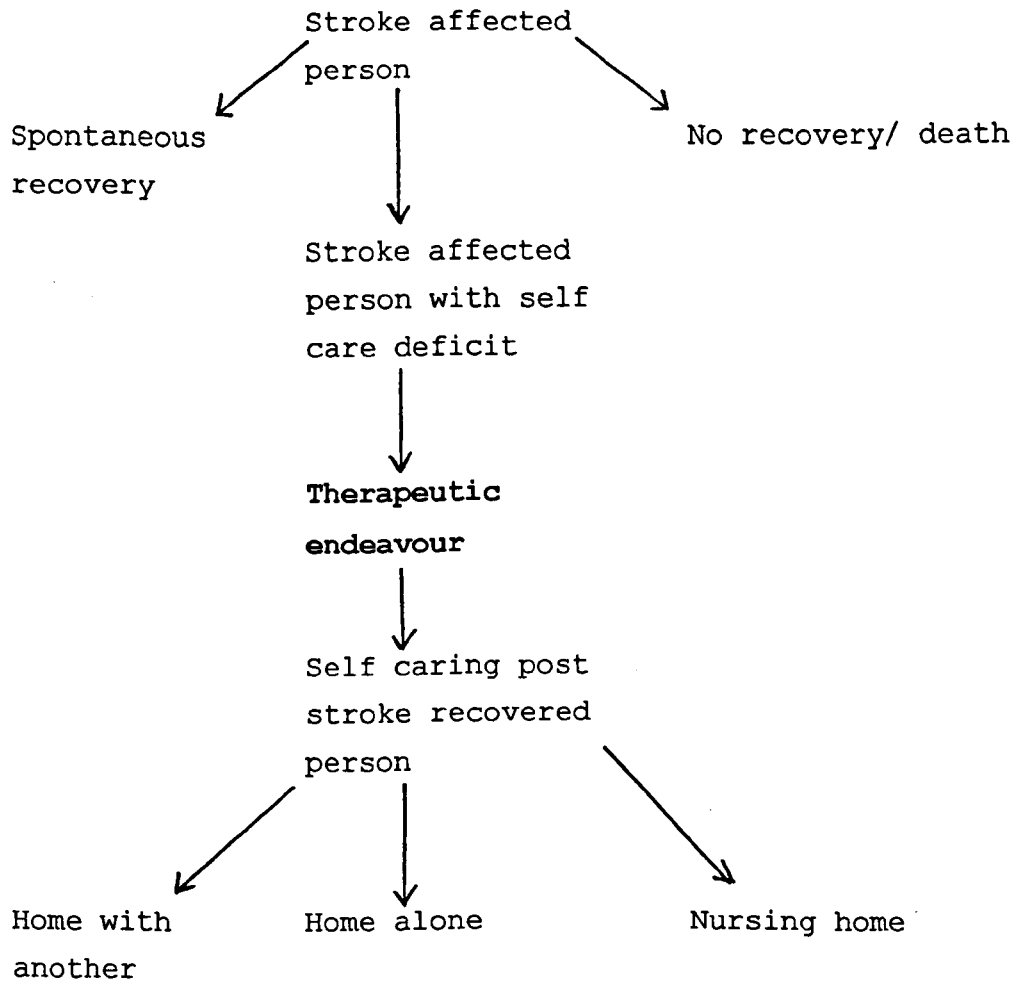
Rehabilitation can be conceptualised as a therapeutic endeavour carried out by a range of different health care professionals who have skills unique to their professional group and skills common to health care professionals. It can be hypothesised that working towards common patient centred goals will result in better patient outcomes. Agreement of patient centred goals can only be achieved through communication and collaboration but professional goals, those considered by individual professional groups to be important but not shared by other members of the team or the patient, may be set and disrupt the total therapeutic endeavour.

The therapeutic agency, including the abilities and motivation of the patient, is a further concept that can be hypothesised as influencing the outcome of rehabilitation. Little is known about how much, by whom or what brings about positive changes in the stroke patient. There is now strong evidence supporting the suggestion that patients cared for in Stroke Units have more favourable outcomes than those managed in general medical wards (Stroke Unit Trialist's Collaboration 1995). The structural variables or context in which rehabilitation takes place is therefore conceptualised as influencing rehabilitation.

The outcome of rehabilitation is conceptualised as maximising the patients potential for self care allowing them to return to their home in the community either alone or with the help of a significant other, or where the residual deficits are too great for independent living that the person is cared for in community setting such as a nursing home.

This conceptual framework can be illustrated :-

Figure 7. **Conceptual Framework guiding study**



This rudimentary conceptual framework gives guidance to the design of the study and sets parameters for the variables under consideration (Miles and Huberman 1994). The principles underpinning the methodology are discussed next.

Methodological underpinnings

A variety of approaches can be employed to address research questions in nursing and there has been considerable debate about whether quantitative or qualitative approaches are

more appropriate for studying nursing (e.g. Melia 1982, Corner 1991, Rolfe 1994, Carr 1994). In order to consider the so called quantitative-qualitative debate the philosophies underpinning each of these standpoints will be briefly discussed.

Quantitative research

The philosophy underpinning quantitative research is that of a logical deductive approach associated with positivism. Positivism has its origins in the physical and natural sciences. There are three key elements in the basis of this scientific method; scepticism, determinism and empiricism (Polgar and Thomas, 1995). Scepticism is the notion that any proposition or statement is open to doubt and analysis irrespective of the proponent. Determinism is the notion that in the world events occur according to regular laws and causes, and empiricism is the notion that enquiries ought to be undertaken through observation and verified through experience. It follows then that these approaches employ a systematic and objective approach to data collection and analysis. The positivist approach is essentially reductionist and methods are concerned with the definition and control of variables under investigation.

Observations and measurements are quantified and subjected to statistical testing. The types of theories generated by quantitative research approaches are normative, suggesting propositions to explain the nature of the relationship between variables (Polgar and Thomas, 1995). Hypotheses are deduced logically from the statements which specify the causal relationships postulated by a theory. Theory testing is through empirical support or refutation of deduced hypotheses.

Qualitative research

Qualitative approaches can be contrasted to the positivist position and they are essentially interpretivist in philosophy. They are seen to be more appropriate for the study of phenomena in their social contexts (Silverman, 1993). In qualitative approaches the researcher is not seen as external to the process but a participant in the research process and the nature of the relationship established with subjects becomes part of the data (Strauss and Corbin, 1990). Unlike the quantitative researcher the qualitative researcher does not seek to impose control on the research situation but rather to explore and understand behaviour and attitudes from the subject's perspective (Gilbert, 1993). The procedures for analysing qualitative data do not rely on numerical reductionism but seek to interpret meanings of observed behaviours and data contained in field notes or transcripts (Strauss and Corbin, 1990, Silverman, 1993). That is analytical categories *emerge* from the data by an inductive process of categorisation and comparison. Theories are individually built giving insights into the social contexts and personalised meanings (Polgar and Thomas, 1995). In this respect it has been suggested by Melia (1984) that the inherent holism of qualitative research that makes them a more appropriate strategy for nursing research.

In brief the limitations of quantitative research is that the inherent reductionism diminishes the phenomenon under study by studying it out of context, whereas the limitations of qualitative research refer to the situation, in-depth nature precluding duplication and generalisation of results.

Expressed in this manner it might be concluded that a forced choice exists. That is, that the adoption of one

approach excludes the other. Quantitative and qualitative approaches are not however mutually exclusive. Both approaches have their utility and multiple methods can be complementary leading to an increase in understanding. It is also recognised that all research methods have their limitations and Cormack (1991) suggests that it has become fashionable in nursing to suggest the compromise of triangulation.

Triangulation

Triangulation as the name suggests involves the use of multiple methods to address the same research question by using a variety of research techniques (Polgar and Thomas, 1995). This is not the same as using three methods together, but looking at the same question from different angles so that a 'full picture' can be built up. In one instance more than one different method may be used to cross check on data, for example a questionnaire used in conjunction with direct observations. In another situation different research subjects may be observed in different situations to compare their behaviour.

Triangulation has its roots in the natural science, positivist frame of reference and hence has been argued by some to have been adopted by the qualitative proponents as a reaction to the criticism that qualitative research lacks scientific rigour (Reed and Proctor 1995). Triangulation therefore does not sit comfortably in qualitative paradigms which emphasise the situational with notions of dynamism.

Not withstanding the polar extremes it can be concluded that quantitative and qualitative approaches are not mutually exclusive and can be used simultaneously (Fielding and Morse 1994). Both have their utility in nursing investigations. The utility of any research approach can

only be assessed in relation to the stated purpose of the study and the nature of the research question the study is trying to address. It is noteworthy however that this implies value free research, which is not the case since in asking a question one is implicitly or explicitly detailing what is important and what is not.

Implicit in the aims of this study are notions of identifying good practice and establishing ways of improving practice. This declaration militates against the traditional perspective of research being viewed as 'neutral' and undertaken from a value free perspective (Carr and Kemmis, 1986). The declaration further suggests an inbuilt inherent bias towards good practice (Reed and Proctor, 1995). This tension is especially evident if the research is to be carried out by a practitioner from the field of enquiry e.g. in Griffiths' study (1996) of a district nurse investigating district nursing or as in this study of a researcher with a background in stroke patient nursing investigating stroke unit care. This position has been recognised by, for example Reed and Proctor (1995) who suggest that it is impossible to adopt a scientific stance which excludes and forgets any understanding that has been developed experientially as a practitioner when engaging as a researcher. They term such a research approach 'practitioner research'. The culture of research-based practice with the attendant 'research knowledge is best' attitude ignores the advantages of research design being influenced by prior experience. Reed (1995) articulates a key principle of practitioner research when she states that

> "research is done by people and to understand it, it is necessary to understand the people who create or construct it" (p46).

Practitioner Research

A perspective frequently taken is that research is highly valued in that it adds to our knowledge and understanding. It leads to theory formulation and testing and leads to a more certain future. That is, research is about knowledge. Whilst this might be the goal for the academic community the concerns of practitioners in the field are not well addressed by this singular goal. Practitioners look to research to inform their practice. That is, practitioners want to know what is good practice and how to improve practice. This may be viewed as an extension of the status debate in research where pure research has high status and applied research low status. Much health care research is applied research in that it draws on pure theory and methodology, thus highlighting the importance of this type of work, but the focus in practitioner research is on developing practice and not theory. A 'spin off' of practitioner research is that it **does** result in contributions to knowledge.

Perhaps more specifically the practitioner is interested in understanding good practice in the field in which they directly work. This places them in somewhat of a dilemma. The exposure to the field of practice with the attendant experiential learning can be viewed as placing the 'would be' researcher too close to the field of enquiry. The principle of objectivity, such that meaningful interpretations can be made which are not simply journalism or tainted by biased views, is compromised by proximity. There is a risk of the practitioner researcher being viewed as subjective. Reed and Proctor (1995) suggest that many practitioner researchers appear to have either ignored or failed to reveal their experience in order to make their research scientifically respectable. The view of Reed and Proctor (1995) appears to be that practitioner researchers

do this consciously as they note researchers fail to reveal their experiences yet defend their research decisions by reference to the methodological literature. They go further in suggesting that researchers view experientially gained knowledge as an embarrassment rather than a resource.

It is worthy of note that if practitioner researchers do reveal their experiential learning they appear to put themselves in jeopardy, that is they are frequently using qualitative methods which in themselves are criticised for being subjective, especially from the quantitative research community and secondly practitioner research implicitly means that the practitioner researcher is close to the field of enquiry. It would appear that recognising this dilemma is at least one way forward. That is instead of failing to reveal experiential learning the researcher is exhorted to declare their experiences and to articulate how this influenced research decisions such that the reader of the final text can make an informed judgement about the relevance of the and possible wider application of the study. The absence of such information from many published research reports may not be a deliberate attempt to camouflage experiential learning but it may reflect the evolution of research methodologies and in particular the presentation and dissemination of research.

Principles of Practitioner Research

A number of principles underpinning practitioner research can be identified from the literature. As previously stated practitioner research refers to the case where health care professionals carry out research into their practice. In essence the practitioner researcher is an 'insider' and this raises concerns about objectivity and bias. This position can be contrasted with the traditional approach to research where the researcher is an 'outsider'. That is, a

researcher is undertaking research into practice with no professional experience e.g. a social scientist researching nursing. Whilst such a researcher can be viewed as a outsider and hence at a greater distance from the field of enquiry it is unlikely that they do not have some knowledge or preconceived notion about the area of research. As such this challenges the alleged objectivity of outsider research with notions of a neutral and a value free perspective.

An intermediate position can also be articulated. This is referred to by Reed and Proctor (1995) as the 'hybrid' position. They define this as a practitioner undertaking research into the practice of other practitioners. In the event these positions are points on a continuum and various positions can be adopted on this continuum.

Objectivity

A central concern in social science research focuses on the relationship between the researcher and their data. Objective analysis is presumed only possible by adopting a disinterested involvement in the research. Rendering the data as 'anthropologically strange' has been the traditional manner of dealing with this tension but this is not possible in practitioner research where the researcher is socialised into the culture under study.

Practitioner research is seen to be closer to new paradigm research and feminist research. In these approaches the aims of the research, in terms of its moral worth have to declared. Additionally new paradigm and feminist research share a view that the research subjects should have an equal opportunity to control the dialogue as the interviewer. This is promoted to compensate for the lack of recognition that has been given to research subjects and

allows for the experiential base of practice to be articulated in research data. This raises a tension in the method of analysis because it becomes somewhat difficult to argue that analytical categories emerge from the data by an inductive process of categorisation and comparison if the declared aim is to improve practice. Reed and Proctor (1995) reinforce the principle of declaring the stand taken to enable the reader to judge the subsequent analysis in the context of the stand taken.

A key element of qualitative analysis has been to articulate the voice of the researcher rather than the research subject's voice. This has been noted by Silverman (1985) who suggests that to do otherwise would be to forfeit the responsibility of the researcher. This perspective appears to have its origins in defending qualitative analysis as greater than story telling or journalism. The method of data analysis employed is also of importance in practitioner research and analytical induction as a method which tries to formulate generalisations that hold across all the collected data has been advocated by Silverman (1985). This is achieved by actively searching for negative cases which if found will necessitate redrawing the boundaries or reformulating the theoretical framework.

Using this notion of analytic induction theory can be used deductively or inductively. The applicability of a theory (e.g. Orem's Self care deficit theory) can be tested in a given area of practice (Stroke Unit care) deductively. It is also possible to use theory inductively to identify the boundaries to the application of knowledge or situations (nursing interventions) which do not conform to the assumptions underlying theory (e.g. Orem's self care deficit theory).

The position on the insider/outsider continuum will also influence other principles underpinning practitioner research. The insider researcher is limited in their choice of setting as they are part of the research process, that is personalised research. They have a history in the area of practice and a future, as such there is a principle of 'permanency'. Outsider researchers have a single role in relation to the research study which is temporary. Once the research is completed the researcher disappears from the practice area. Additionally the outsider researcher is not concerned with everyday use of the research but the contribution this makes to academic knowledge. The insider researcher is concerned with the contribution to practice and additionally to the academic community. Practitioner research is concerned with the way in which the research is used in practice and in the broader application of this practice in other practice settings. Whilst the choice of setting may be limited this is compensated by the depth of contact with the research setting. The application of the principles of practitioner research to this study will be discussed in the following chapter, working methods.

Validity of data

One of the most problematic questions in qualitative research is how to assess the validity of the analysis. The established procedures utilized in quantitative methods, placing strong emphasis on the measurement of reliability do not sit comfortably with qualitative methods. It is unrealistic to demand that an observation or interview in the social world could be replicated by other researchers so that the result could be predicted. Reliability is less of an issue in qualitative research. Qualitative research is necessarily temporal due to the period in time when it was collected and the many conditions that were operant then which might not be at some time in the future. It

makes no claim for generalisability because it is highly specific and the extent to which contextual issues assume importance is regarded as a strength.

The validity of a piece of research is determined by the extent to which it measures what it purports to measure. In qualitative research the question is whether the detailed description derived from the data accurately represents what was there, albeit temporally. Some authors have argued that we should use qualitative criteria to evaluate qualitative research (Leininger, 1994) and reject the term 'validity' which has its origins in quantitative methods. Strauss and Corbin (1994) for example, prefer to use the term 'verification'.

Verification of interview data is achieved through analytic induction or constant comparative analysis. That is concepts derived from the data are tested out at subsequent interviews and as such serve as a constant validity check. Explication of the strengths and weaknesses of the research design and details of the relevant biography of the researcher also go some way to demonstrate the verification of the findings.

Other ways to secure validity include secondary analysis by another researcher or respondent validation. Both of these methods were rejected in this study. Secondary validity relies on engaging a second analyst to repeat the analysis and check for agreement between the two. This approach rests on the assumption that there is only one correct analysis of the data and that each analyst would arrive at the same result. This is an unlikely scenario where complex data are analysed and done so within the context of an overall picture of the data. In order to ensure agreement it would be necessary to reduce the level of inference drawn and require manifest evidence for the coding of a

piece of data with the result that only the most superficial analysis could be agreed upon.

Respondent validation was similarly rejected as a method to validate the qualitative data in this study. This approach requires the researcher to return to the respondents to ask them to review and comment on the account in order to seek their validation. A methodological problem is that respondents know only their own view of the world and do not have a whole set of data to assess. If respondents had a whole set of data and were able to judge whether an analysis was correct there would be no need for the research in the first place, respondents would simply need to record the truth that they already know. The purpose of analysis is that the analyst seeks to understand the world in a new way.

Explanations or findings should 'ring true' and should seem to the reader to make sense as an explanation of the data that is presented. The task of the reader is to read the text critically in order to assess the evidence provided for the interpretations made and to judge whether context has been taken into account.

Principles of Case Study Method

Stroke units are as yet relatively few in number and each can be conceptualised as a distinct entity or a single case. A decision was made to go for 'depth' rather than 'breadth' and hence, in keeping with the principles of practitioner research, a single study site was selected. This study follows the principles of case study design suggested by Yin (1989). He contends that the case study is the method of choice when the phenomenon under study is not readily distinguishable from its context. The case study

method was considered appropriate as the researcher wished to define the topics broadly and cover contextual conditions in addition to the phenomenon of study and utilise multiple sources of evidence. Case study method can be used as an evaluation tool in an evaluation study such as a project or programme. The development of stroke units can be seen as a programme of intervention designed to improve outcomes in patients following stroke.

Yin (1993) cautions against regarding the case study method as a "let's collect information about everything" approach as this fails to produce answers to questions. He highlights the importance of theory in the selection of cases to be studied and in defining a complete and appropriate description. The use of theory can also assist in the generalising of results to other cases.

Firstly the 'Unit of Analysis' was identified in response to the question "what is the case?" The unit of analysis was a *stroke unit* and included the structure of the unit, the professional staff working on the unit, the philosophy of care, the processes employed on the unit and service users experiences of intervention on the unit, that is, patient outcomes.

The second issue of whether to select a single case or multiple cases was considered next. Time constraints prevented the researcher from accessing more than one unit. It is accepted that had the study been conducted in more than one unit then greater confidence could have been placed in the overall results.

Thirdly the selection of the unit of analysis was based upon the relevance to the topic. The stroke unit studied had been established as a stroke unit for 2 years and is one of a few such units in the UK and as such could be

regarded as a strong positive example of the phenomenon under study. Additionally there was a willingness of the staff of the stroke unit to be studied which is essential.

The final design issue of case studies is that of data collection strategies. Whilst there was a willingness of the staff on the stroke unit to participate in the study the researcher was mindful of the need to ensure that data collection did not interfere with delivery of care. An action plan was therefore devised that would allow the multiple data collection methods to be administered over a period of time.

Summary

The theory and methodological underpinnings of this study have been discussed. This study is a descriptive study that employs multiple methods within the spirit of practitioner research. A single case method is used in this study to provide for depth rather than breadth. The use of multiple methods is to allow for triangulation of data such that a 'full picture' can be built up of stroke unit care. The application of these methodological principles are discussed in the next chapter.

Chapter 4

Working Methods

Introduction

Following the aims, this chapter describes the application of the principles of practitioner research to the study. The chapter then introduces the reader to the development and testing of the instruments used in this study. It provides details of the main study including access a description of the study site and details of the sample. The purpose of the study was to examine the context within which stroke rehabilitation occurs and to explore the existence and extent of collaboration between professional staff involved in stroke rehabilitation. The aims of the study have been grouped into three areas which reflect the conceptual framework guiding the study.

Aims

The aims of this study are therefore:

- To describe the context within which stroke rehabilitation occurs with particular emphasis on the contribution of the nurse

- To explore the existence and extent of collaboration between the professional staff involved in stroke rehabilitation.

- To explore service users perceptions of the key contributors to their rehabilitation.

Application of principles of practitioner research to this study

The principles of practitioner research will now be related to this study. Firstly the study was undertaken by an 'insider' but it is better to conceptualise the position of the researcher as a 'hybrid' in that he was engaged in researching the practice of other practitioners in a setting in which he didn't ordinarily work. The researcher is a nurse with a background in medical nursing and care of the elderly nursing. This study arose out of his concern about the care and rehabilitation of stroke patients in hospital, in particular the contribution of the nurse to stroke patient rehabilitation. Whilst aware that a variety of managerial organisational approaches have been, and are, deployed in different hospitals and whilst differences can be expected between one provider unit and another, little is known about the aspects of stroke patient care which confer advantages to patients in terms of their recovery. He was aware that patients following stroke tend to have greater than average lengths of in-patient stay and that these patients are often seen to languish especially when competing for care in an acute environment.

He was aware of a sense of frustration amongst health care professionals in caring for these patients. This was not limited to nurses but to other health care workers as well. All too often these patients were perceived as 'bed blockers' or 'heavies'. That is negative connotations were expressed about this client group. Additionally the language used to describe these patients had assumed a jargonistic code. 'Bed blockers' implies that the patient would derive less benefit than another from being in hospital and additionally their presence in hospital was preventing others from receiving much needed care. The change of health status of the patient was such that

frequently they were unable to return to their pre admission domicile and this, the 'social' consequences of their illness was delaying their discharge, which served to reinforce their 'bed blocking' label. The high proportion of elderly patients represented in this client group did little to enhance their status and although not openly spoken about elderly patients were less positively valued by staff. The bed blocking status of these patients for nurses manifested itself as them being seen as 'heavies'. This jargon implies that the patient is physically dependent upon nurses and likely to remain so. A paradox exits in that the more nursing interventions that are put in then the more dependent the patient would become but the increased effort that would be required to engage in rehabilitation, especially in the early stages of each patients trajectory, meant that it was easier to do 'for' the patient than to get the patient to do it for themselves. Hence patients become more dependent, 'heavier' and 'less exciting'.

There is no cure, no specific pill or surgical procedure, no specific intervention which is going to change the circumstance a perception of 'a slog' was evident. The researcher was also aware that whilst undertaking this study great interest was being expressed in the notion of stroke units conferring advantages to patients in terms of their outcomes, especially amongst medical staff. The publication of the Stroke Unit Trialist's Collaboration (Langhorne, 1997) conclusions from a systematic review of the literature was not only timely but appeared to confirm the perspective of stroke physicians and added impetus to their aspiration for greater recognition amongst the medical community. That is, patient outcomes following stroke could be influenced by intervention. The nature of these interventions appeared to be extremely vague and the demonstrated patient outcomes rather narrow in terms of

rehabilitation. The improved patient outcomes centred on improved functional ability, that is in the area of disability rather than handicap; the social consequences of impairment. Given that patients tend to measure their improvement in terms of the social consequences of illness the discovered improved patient outcomes fit more closely the biomedical model of rehabilitation than a more patient centred approach.

The bed blocking status of this client group manifests itself amongst the medical staff as being an uninteresting speciality to engage in. Medical cover for this client group was limited to a weekly 'doctor's round' where the consultant may spend a few minutes with the patient. This engagement could perhaps be best described as 'social' as the consultation tends to be superficial and focused on discharge plans. Other medical cover in the form of junior doctors was almost as a by-product of attending the (acute) needs of other patients. In areas where there is a high proportion of patients in this diagnostic group this results in the area not being approved for medical training and hence house officers are not routinely attached to the wards, with day to day medical cover being provided by an intermediate grade doctor such as a senior house officer or registrar. This cover is usually at an 'arms length', that is a doctor would have to be paged to address a need on the ward.

The therapy professions are perhaps less affected by the bed blocking status of these patients but it is contended that this area of practice is a speciality which attracts a certain type of practitioner. That is there are those members of the therapy professions which would not consider at all working in this clinical area.

Implicit in the aims of the study is a desire to identify good practice and ways of improving practice. This is in keeping with the spirit of practitioner research where the aim is to solve a particular clinical problem. The research is concerned with practice but is also concerned with making a contribution to the theory of nursing. In particular this study was seeking to address the questions posed by Orem (1991) concerning what nurses do and what they hope to achieve as a consequence of their interventions. It was recognised that nurses do not work in isolation and hence the nurses' contribution to the multidisciplinary team was also an area of concern for this study. This was only achievable by understanding the team members, in particular those which played a part in the day to day management and care of the patients. The understanding of team members would only be possible by understanding the biographies of these staff and their perceptions of others. The principle of insider knowledge therefore informed my research decision to engage in interviewing and undertake surveys of particular aspects of practice.

My decision not to interview the clinical director (Consultant Physician) was also influenced by my insider knowledge. I was aware that the decision to develop a stroke unit was primarily the decision of the clinical director and that this was based on the emerging knowledge that stroke units confer advantages to patients in terms of functional outcomes and discharge destination. The clinical director believed that the stroke unit would reduce the 'bed blocker' situation by reducing duration of in-patient stay and hence increase patient turn over. At the same time it would improve the outcomes for patients under his care and hence the picture would be a classical 'win win' situation. This of course negates the situation for the staff who would have to deal with the consequence of this

decision and again this reinforces the principle of insider knowledge which influenced my decision to survey practice and interview staff. It also negates the situation for patients and supports my decision to interview patients who had experienced stroke unit care.

The interview was conducted by a conversational style with broad areas for discussion only. This decision was made in an attempt to allow informants to influence the topics under discussion and hence enjoy some reciprocity. This is a rather idealistic position given the imbalance of power between the researcher and the respondent. Additionally the researcher had to produce a report on the interaction and hence had additional responsibilities over that of the informant.

The decision to interview patients who had experience of stroke unit care was also based on insider knowledge. The researcher was aware that patients evaluated their experiences in terms of the social consequences of their illness. He was also aware that patients are not passive participants in the caring process of care but hold views and expectations in relation to the process of care and their outcomes. Informal contact with patients had found that patients had a view about their care and that they were willing to express it. They could spontaneously identify structural aspects of care provision which they perceived as advantageous to them, for example 'on-ward' therapy provision. They also expressed views about the team working together towards shared goals.

The extent of this 'sharing of goals' amongst staff was not known and hence a decision was made by the researcher to undertake a number of surveys. These surveys were a) to explore rehabilitation goal setting as evidenced in the written plans of care, b) to explore interprofessional

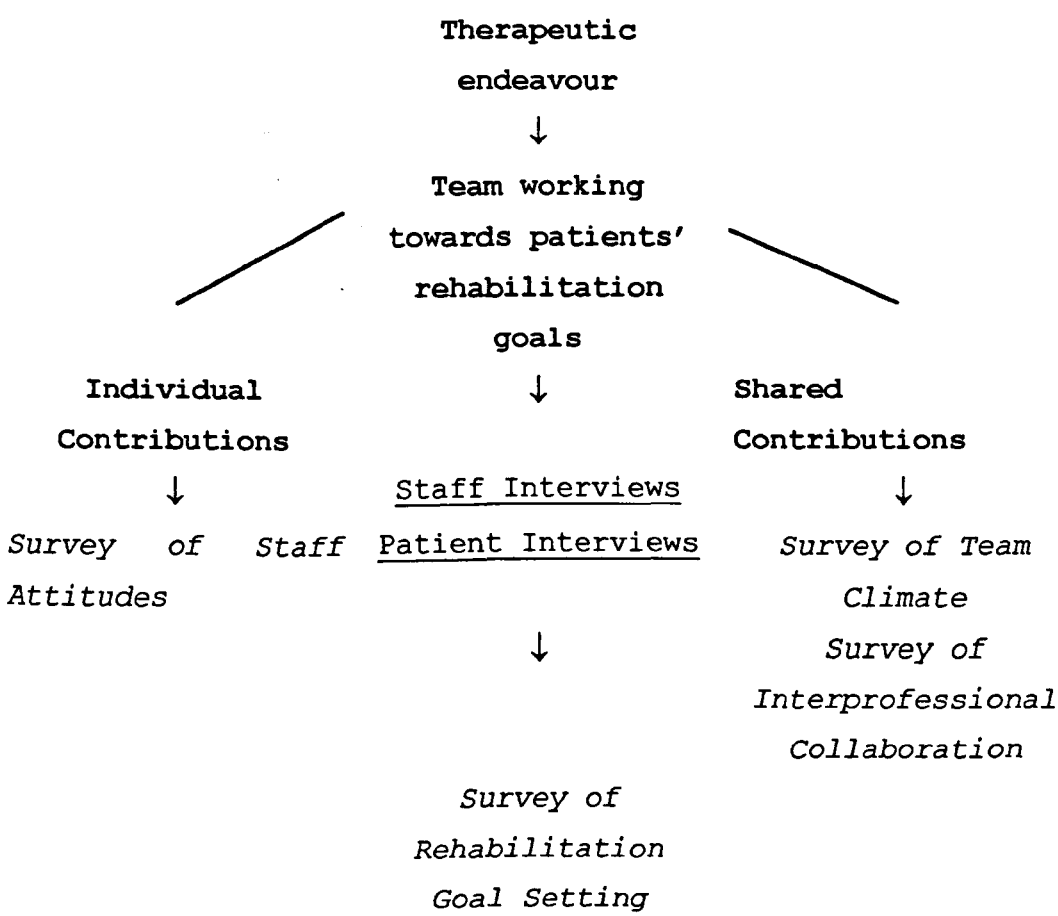
collaboration in team conferences, c) to explore professional staff attitudes towards stroke rehabilitation and d) to explore the climate in which the team working took place.

The rudimentary conceptual framework previously expressed identifies the 'therapeutic endeavour' as the element between the 'stroke affected person with a self care deficit' and a 'self caring post stroke recovered person' and it is this element which is the focus of this study. The use of insider knowledge has therefore influenced the research design and hence the findings and conclusions have to be considered within this context.

Therapeutic endeavour was not the consequence of the action of a single professional group or person but the amalgam of numerous professional groups, practices and patients. At the centre of therapeutic endeavour was team working which in turn was dependent upon individual contributions to the process and shared contributions. The extent of sharing of contributions and shared aspirations for patient outcomes; the goals of the team, which included patient expectations were seen as the activity that galvanised the therapeutic endeavour.

This is illustrated in the following diagram, on which the research methods used have been superimposed to demonstrate the relationship between the methodological principles and the working methods.

Figure 8 Relationship between Concepts under study and research method



(Key: Text in bold refers to concepts, text underlined refers to qualitative methods and text in italics refers to surveys or quantitative methods)

The selection and/or development of these research instruments is now discussed.

Development of Research Instruments

The research design, within the spirit of practitioner research, used multiple methods and required the development of several data collection instruments. The aim of using multiple methods was to gain a 'full picture' of

the phenomenon under study. The primary aim was not to engage in verification of findings by the use of triangulation but this was achieved to some extent as a secondary aim.

Interviewing

The purpose of using interviewing as a data collection method has its origins in this study in the paradigm of practitioner research. The use of insider knowledge influenced the research decisions and the researcher had a desire to engage in some reciprocity in the data collection process. Interviewing relies heavily on the quality of the interaction between interviewer and respondent. In the paradigm of practitioner research it is acknowledged that assumptions are taken for granted in that they are shared by the researcher and the practitioners. It follows therefore that the significance of such may not be recognised. The researcher acknowledged that his experience as a nurse, with a background in medical and elderly care nursing, would have equipped him with sufficient understanding of the clinical issues to conduct interviews with staff and patients. He had been involved in a number of research projects and clinical supervision of students in the stroke unit and hence had undertaken informal participant observation which had allowed him to generate an interview guide.

The purpose of the interviews with staff working in the stroke unit was to uncover their understanding of caring for stroke patients and their views about the practice of rehabilitation on the unit. The purpose of the interviews with patients was to gain some insights into their experiences of rehabilitation and in particular to see if and to what they attributed their outcomes. Interview techniques can overcome some of the limitations of written

questionnaires and a variety of approaches can be adopted ranging from the structured or formal interview to the unstructured or conversational interview (Moser and Kalton 1985). The interaction is usually conducted on a one to one basis but techniques for interviewing groups are available. The selection of a semi structured interview in this study was adopted as being the most appropriate. The highly structured approach was rejected as the researcher wished to leave open the opportunity for respondents to raise issues that they considered important in to them and not to lead the respondents towards socially desirable responses.

The semi structured approach is also referred to as a "guided interview" and the use is described by Field and Morse (1985) when

> "... information is required about a topic, when the structure of the topic is known but the answers cannot be anticipated. It is useful because this technique ensures that the researcher will obtain all information required, whilst at the same time permitting the informant freedom of responses and description to illustrate concepts." (p. 67)

The development of the staff interview guide commenced by informal interactions with staff on the stroke unit concerning the contribution they perceived themselves as making. These interactions were informed by reference to the literature and evolved over time. Initially a 'checklist' approach was used whereby key questions were put to staff during the course of general interaction. The questions raised (see table 8) were introduced into conversation and field notes were made as soon after the interaction as possible. Using this approach it was possible to raise questions in the language of the staff and refine the interview guide. A semi structured interview

guide was devised with topics grouped into 4 sections, about the health care professional themselves, about their professional career, about the rehabilitation team and about the rehabilitation setting. The initial interview guides are included in the appendices (see appendix 1).

Table 8. **Checklist of preliminary questions**

About working on the stroke unit:
enjoy most
enjoy least
advantages and disadvantages
About the patients:
activities
time spent on unit

Patient Interviews

The patient interview guide was developed following informal interviews with patients whilst they were still in hospital but nearly ready for discharge home. Patients were approached as they sat in the day room and they appeared to enjoy the opportunity to interact with staff. Frequently the patient would initiate a conversation about the staff and how much they valued the efforts of staff in helping them to get better. Many general comments were made about the caring nature of staff and a strategy of asking patients about their transfer to the stroke rehabilitation unit was used. This strategy was used to try and focus the patient on those issues which they considered had helped them to get better. The informal style of interview was adopted to allow for reciprocity in the interaction and to help build up trust between me and the patient respondent.

The simple question "Did the move from [name of acute stroke ward] to [name of rehabilitation ward] help you?" was often sufficient to trigger comments about the rehabilitation setting as well as those aspects which the patient considered most important. For example, patients would talk about 'knowing what was going on' taken to mean that the plan of their care was more overt. They also frequently highlighted the on ward rehabilitation activities such as the "physio room" and the "OTs room". Patients also spoke freely about how staff appeared to be working to the same ends, "they all pulled together" was often vocalised, suggesting that some aspect of stroke unit care and team work could be discerned by patients. Field notes were taken and used to inform the development of a semi structured interview for use with patients. (A copy of Patient Interview guide is included as appendix 2).

Survey of Team Conferences

The systematic review of the literature concluded that close co-operation between team members positively influenced the effectiveness of stroke rehabilitation teams and this most frequently symbolised as the weekly team meeting. This together with insider knowledge influenced the research decision to undertake a survey of the team conference. This was named variously as the 'case conference', 'team conference' or 'weekly multidisciplinary team meeting'. A decision was made to focus observations on to the team conferences rather than other activities. This was based on the emphasis given by respondents when gathering material to inform the interview guide to the value of the team conferences. It was considered by all respondents to be the event when interprofessional collaboration was consolidated. Reference was made by respondents to informal interprofessional collaboration based on proximity of the various professional groups, such

as 'bumping into each other' and to on-ward rehabilitation activities, physiotherapy and occupational therapy had designated areas within the ward for specific rehabilitation activities. The nature of the communications was therefore opportunistic rather than planned. It was not considered viable to be present in the stroke unit at all times to either observe the frequency of these interactions or to determine the nature and content.

For clarity the team meetings that were observed in this study was the meeting which was attended by the various members of the multidisciplinary team. At the meetings the focus of discussion was the progress of all current in-patients and not a single patient. This distinction is made to discriminate between the 'team conference' and the more traditional use of the term 'case conference' which is usually convened to discuss a specific patient and may include the patient or their relatives. Patients or their relatives were not invited to the team conference. It should be noted that whilst the rhetoric amongst the stroke unit team was to hold 'case conferences' when the need occurred, that in reality no case conference was convened in the duration of this study. Case conferences for individual patients are seen as the exception rather than the norm and this finding alone suggests that the pattern of working on the unit is such that the need to convene individual case conferences is infrequent. A decision was made to observe a case conference but in the event none occurred.

The purpose of the team conference was purported in the literature to be concerned with the establishment of patient centred goals. Goals that were individualised, realistic and time framed. They were seen as the opportunity to share information.

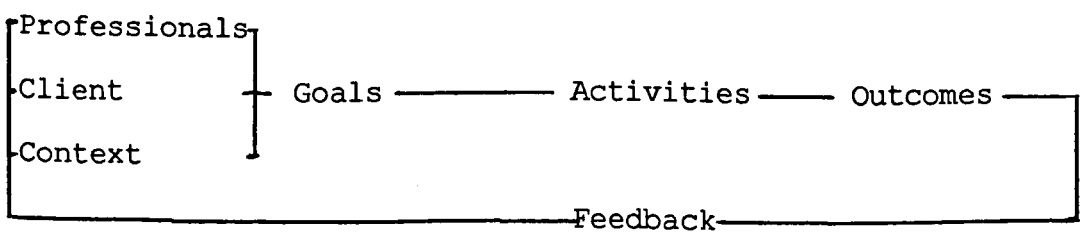
Selection of Data collection instrument for Team Conferences

A number of approaches have been described to examine the processes involved in team meetings , for example, Waters (1991) who utilised a non-participant observation approach of nursing hand over reports and quantified the exchanges in terms of reference to past events or future goals. An alternative approach was described by Ducanis and Golin (1979) who developed a data collection instrument; The Team Observation Protocol (TOP).

Examination of the literature on interdisciplinary care team processes identified that the work of Ducanis and Golin (1979) had been used in a variety of settings, though most commonly in North America. No studies were identified which utilised the TOP in the UK. North American studies had, however, used the instrument in a number of rehabilitation settings and in settings where more than one professional group was represented.

The theoretical framework guiding the development of the TOP was systems theory and the Team System was illustrated:

Figure 9 Theoretical Framework Guiding Development of TOP



Professionals were considered to comprise the team and they brought with them different viewpoints, training and experiences. They also brought different role expectations, status and levels of legal responsibility. The similarities

and differences and areas of overlap between the various professionals provide a source of conflict and misunderstanding that can have considerable impact on team functioning.

The client is considered to be the focus of the services provided by the multidisciplinary team. The client may be active or passive in the teams efforts, but is ultimately the component that is affected by the effectiveness of the team.

The context refers to the organisational setting in which the team operates, the network of services of which it is a part and the social system in which it is located. These factors are considered to affect the operation of the team.

Goals are the aims that give direction to the team and Ducanis and Golin (1979) suggest that there must be team agreement on direction or the team will fall apart. Ducanis and Golin (1979) further contend that each professional member of the team may have their own goals and/or perceptions of the team goals.

Clients also have their own goals which may or may not be congruent with the team goals. Davis, Davis, Moss, Marks, McGrath, Hovard, Axon & Wade (1992) identified this issue in rehabilitation settings and refocused the teams activities towards more patient centred goals based on handicaps rather than professional goals based on disability. Davis et al. (1992) regarded this as a shift from a multidisciplinary team to an interdisciplinary team.

Activities include the task related actions of the team participants such as treatment activities, decision making and case conferences. The actual activities performed by each team member are determined by the professional

involved, the nature of the clients' problems, the organisational context and the goals of the team. In addition to these task orientated activities groups also engage in activities which are designed to improve or maintain the functioning of the team.

Outcomes are defined as those events that occur as a result of the teams' activities and as such are a measure of the teams effectiveness. Additionally this provides feedback that may lead to modification of the teams activities. Outcomes relate not only to clients but to participants and the organisation.

The Team Observation Protocol (TOP) is based on this theory of 'team systems' and is used to categorise the major statements of team members to identify who participates in team discussions and how decisions are reached by teams. Seven categories of statement are used; client, team, questions, information, interpretation, alternatives and decisions. To some extent the categories mirror the components of the 'rationale approach to decision making'. A strategy advocated to ensure that the most appropriate decisions are made. This approach is however constrained by the difficulty of generating all of the possible alternatives and evaluating the outcomes of decisions.

The TOP does not attempt to collect verbatim recordings of participants statements or record non verbal communications. Ducanis and Golin (1979) proposed a set of rules for using the TOP in practice, these are detailed in the following list:

1. Each participant is identified by profession and sex and given a code number
2. Only verbal statements are recorded,
3. Statements are recorded in numerical sequence.

4. Each statement is recorded by category and participant.
5. Each response is recorded only once regardless of length, unless there is a change in category.
6. Each change of category is recorded as a new response.
7. Each change in respondent is recorded as a new response.

In summary two categories were concerned with affective statements (categories 1 and 2) about the client and team members respectively. The remaining five categories are concerned with task function. Based on these rules and a knowledge of those present at a team conference a TOP record sheet was devised (see figure 10)

Figure 10 TOP Record Sheet based on Ducanis and Golin (1979) p99

	Client	Team	Questions	Information	Interpret-ation	Alternatives	Decisions	Total
1								
2								
3								
4								
5								

Key to codes
1= Ward Manager
2= Physiotherapist
3= Occupational Therapist
4= Speech and Language Therapist
5= Nurse

It was recognised that using the Team Observation Protocol would result in a survey of statements made in team

conferences rather than participant observation which would have identified other processes occurring.

Survey of Staff Perceptions of Team Working

The design of this study placed emphasis on the contribution of team working to the process of rehabilitation as illustrated in the conceptual framework. In particular the therapeutic endeavour of the team was considered to be influenced by the way the team worked together and the climate or environment it created. The systematic review of the literature concluded that close co-operation between members of the rehabilitation team has a positive influence on the effectiveness of stroke rehabilitation. No studies were however identified which had systematically examined team work in stroke care.

Selection of Data collection instrument for Team working

Data collection instruments have been developed to examine team processes and a number of these have been used in health care settings. An exploration of the literature using the search term "team climate" on the electronic database 'medline' revealed a number of potentially useful instruments. The most commonly identified instruments were the "Work Environment Scale" developed by Moos (1986) and the "Team Climate Inventory" developed by Anderson and West (1994). An evaluation of these instruments suggested that either tool may have been useful but the Team Climate Inventory (Anderson and West 1994) was selected. The key reasons influencing the selection of this tool were that it was developed in the UK, and had been used in other organisational settings in the British NHS.

The instrument was developed by Anderson and West in the MRC/ESRC Social and Applied Unit at the University of

Sheffield. It is available to purchase through 'ASE' a division of the NFER-NELSON Publishing Company and protected by copyright. An original (coloured to prevent unauthorised photocopying) questionnaire is included in appendix 5).

The instrument has its origins in the four factor theory of climate (West 1990). These factors are; team vision; participant safety; task orientation; and support for innovation. Team vision refers to the extent to which an organisation gives focus and direction to members' energies. Vision for a team should be clear, negotiated and attainable. It encompasses alignment with the organisational objectives and the well being of team members.

Participant safety refers to the extent to which commitment to the organisation, reduction of resistance to change and the development of a human culture are achieved. Participant safety embraces four fundamental concepts; influence over decision making, information sharing, interaction frequency and safety. Anderson and West (1994) suggest that where team members have influence over decision making that they are more likely to contribute their energies and creative ideas to that process. They note that a frequent misconception is that team leaders are considered to be responsible for objectives and processes when ideally all members should take responsibility for all aspects of team functioning. The purpose of leadership within a team is so that individuals can make decisions on behalf of others. True team participation is when the processes of decision making are collectively determined but where particular decisions are placed in the hands of individuals. Failure to operate in this way can lead to paralysis of action. In respect to a stroke unit a physiotherapist may decide that a patient requires to

perform a specific exercise but it is the team decision to decide on the total therapeutic endeavour.

Information sharing is seen as essential. Unless people within teams communicate and share information the team will miss out on opportunities to enhance effectiveness (Anderson and West 1994). The richest form of communication is face to face with written information regarded as an impoverished media for sharing information. This perspective lends support to the weekly team conferences convened in stroke units. The frequency of interaction between team members determines the extent to which they exchange information and ideas.

Safety also influences participation. Where team members feel safe from ridicule and attack they are more willing to try out new ideas. A climate of safety and support engenders creativity.

Task orientation is the third concept in the four factor theory of team climate. This is a necessary component because teams can place more value on consensus than upon achieving the vision they have set themselves, a phenomenon of 'groupthink'. Task orientation is therefore concerned with reflexivity and constructive controversy. Reflexivity ensures the appropriateness of team processes and task outcomes.

Constructive controversy refers to a climate of co-operation and trust where team members feel that their competence is affirmed. Support for innovation is the fourth concept and has two distinct elements; articulated support and enacted support.

Anderson and West (1994) suggest that enacted support, that is practical support in terms of resources, time and co-

operation are necessary to ensure that ideas are accepted and encouraged. Verbal support (articulated) soon loses its currency without practical support.

The four factor theory of team climate (West 1990) guided the generation of questionnaire item generation and the scale was validated in use in a number of settings in health service and commercial companies. These include NHS management teams, nursing teams and oil company teams. Follow up validation studies were subsequently conducted by Anderson and West in Primary health care teams, social services teams and psychiatric care teams. Whilst no studies were identified as using the instrument in rehabilitation settings the similarity between rehabilitation teams and teams where the tool had been validated were noted. That is the teams comprised of multiple professional groups, e.g. psychiatric care teams.

The instrument comprises of 44 items in 5 sub-scales. Each sub-scale reflecting one of the factors of the four factor theory of team climate plus a sub-scale concerned with social desirability. The questionnaire employs a Likert scale with respondents selecting from a 5 point scale ranging from "strongly agree" to "strongly disagree". Copyright release has been obtained to include an original copy in this thesis (see appendix 6).

Staff Attitudes Towards Stroke Rehabilitation

The theoretical framework guiding the design of this study recognised that team work is not just about bringing a team together but recognising that individuals bring with them personal characteristics such as attitudes towards stroke rehabilitation. The systematic review of the literature concluded that measurement of staff attitudes towards stroke rehabilitation had not been systematically

undertaken. The exception to this was a survey of nurses attitudes towards stroke rehabilitation in general medical wards (Gibbon 1991). No survey of attitudes towards stroke patients or stroke rehabilitation for any of the professional groups involved in stroke patient care or rehabilitation in stroke units was identified.

Selection of the Data collection instrument for staff attitudes

Previous studies by the researcher (for example, Gibbon (1991), Gibbon and Little (1995)) had employed an attitude scale originally devised by Hamrin (1982). The Hamrin (1982) questionnaire comprised of a Likert Scale and contained similar attitude statements to those placed into an item pool following informal data gathering. This suggested that the tool was still appropriate for use more than 10 years after its original development. A further benefit of using this scale was the ability to compare the findings of this survey with those of Hamrin and to be able to re-test the reliability and internal consistency of the scale.

The researcher's previous experience of undertaking attitude surveys using the Likert Scale devised by Hamrin (1982) led him to make some minor modifications (Gibbon 1991). The scale although devised for completion by nurses in general medical ward settings appeared to have face validity for use in a stroke unit. Only item 11 "Stroke patients take too much time in nursing work - other patient groups are neglected" (complete questionnaire in appendix 3) did not appear to have face validity. The acute stroke unit comprised of half of a general medical ward and the scale appeared to have face validity for this setting. The stroke rehabilitation unit though did not have other patient groups and hence the item was spurious. In order to

utilise the same scale in each of the settings the scale was used in the same form but the score for this item was corrected to '3' to eliminate any bias. Additionally the purpose of measuring attitudes in this study was attitude patterning and the Likert scale is useful for this activity.

Separate questionnaires were devised for each of the different professional groups to be surveyed. The items remained constant but were headed by reference to a specific professional group e.g. Physiotherapists. The Attitude Scale for physiotherapists, occupational therapists and doctors are reproduced in appendix 4.

In addition to the attitude statements respondents were also asked to indicate their grade, gender and period of service in rehabilitation settings so that any trends associated with these issues could be discerned.

Surveying Documentary Sources of Rehabilitation Goal Setting.

At the centre of the conceptual framework guiding the study design (figure 8) is 'team working towards patient rehabilitation goals'. Rehabilitation was viewed as a goal centred educative process and patient centred goal setting had some support in the literature. No studies were however identified which explored rehabilitation team goal setting. Documentary evidence was however used in a number of retrospective studies, for example, Dromerick and Reding (1994) who examined patients records to determine the number of complications experienced by patients. The use of documentary evidence is frequently considered in historical research but its use is not limited to this approach.

Caution has to be exercised when using documentary sources for research purposes as the survey is entirely dependent upon what is written rather than what is known or what is done. It is, however, unequivocal that measurement of rehabilitation goal attainment can only be undertaken where rehabilitation goals have been set and recorded.

Traditionally goal setting has been an activity undertaken by each of the professional groups in rehabilitation settings but these goals may have been professionally centred rather than patient centred. Whilst there are some examples of 'team goal setting' these are the exception rather than the rule. Requests for collegial assistance through the columns of professional journals often contain pleas for assistance in developing single patient documentation or team notes for example, Marsden (1996) suggesting that the perceived benefits of this approach have yet to be realised in practice.

In situations where the team meets at a weekly team conference and agrees goals for each patient it would be reasonable to expect that the professionals' records reflect these agreed goals. Further whilst the team may have agreed goals it is reasonable to expect that different professional groups might record profession specific actions or generate profession specific goals which are congruent with the agreed overall agreed team goals (Ducanis and Golin 1979).

The increasing emphasis on patient involvement in goal setting was considered as adequate justification for the recording of goals to be written in a language that was acceptable to a non-professional or a member of another professional group.

Development of the Documentary Sources Survey Instrument

The absence of studies surveying rehabilitation goal setting activity meant that no previously developed tool was identified. The first stage in the development of an instrument to survey the patient rehabilitation records was to obtain a copy of each of the different professions' patient documentation records. In the case of the nursing and therapy professions each of the records were unique to the professions but each reflected a problem solving approach. In the case of medical records these employed a conventional blank A4 writing sheet of paper.

The nursing documentation was the most structured and reflected an activities of living framework in keeping with the model of nursing used on the stroke unit. All structured records contained provision for recording biographical information, pre admission health status and assessment on admission. A section specifically for problem identification based on assessment was not evident in any of the records reviewed. Progress entries were recorded either on a separate form (held with the assessment form) or in a clearly defined section.

In order to develop a survey instrument an 'agreed standard' of what should be contained in a patient record to set rehabilitation goals was devised. The 'agreed standard' was developed by a panel of experts including a representative of each of the core professions involved in stroke rehabilitation (i.e. nursing, physiotherapy, occupational therapy and medicine) and by reference to completed patient documentation. The 'agreed standard' was based on a problem solving approach and an activities of living framework. This was acceptable to each of the professional groups involved. The 'agreed standard' is illustrated below (see table 11).

Table 11. **Agreed Standards of Stroke Rehabilitation Documentation**

Stroke Rehabilitation Information required for Goal Setting

Pre-admission Data

1] Social circumstances
- Home circumstances/Primary carer
- Housing (Stairs/toilet)
- Assistance received;
  - e.g. None
  - Shopping only
  - Household/cooking
  - Personal care

2] Functional status
- Previous mobility - Able to use;
  - e.g. public transport
  - Walk to shops
  - Mobile indoors
  - Immobile/needs help to walk
- Previous urinary continence status
  - e.g. Continent
  - Occasional accident
  - Regularly wet
  - Catheterised
- Previous eating and drinking
  - e.g. Able to prepare meals
  - Simple meals only
  - Needs help
  - Dependent on another
- Previous mental status
  - e.g. No problems
  - Vague/forgetful
  - Unsafe to be left alone all day

Current Status Data

To contain evidence of comprehensive assessment and appropriate problem identification.

3] a) Physical problems
b) Psychological problems
c) Social problems

Plan of Care Data

4] Long term goal (Aim)

a) Is there a specific rehabilitation outcome to achieve within a set time frame - agreed by multidisciplinary team and noted in records of each discipline)
b) If Yes, then which disciplines shared the same goal.

5] Short term goals (Objectives)
(Specific objectives set to be achieved in a time frame - should be agreed and noted in all disciplines records)

6] Rehabilitation targets
Shortest term objectives and most precise - may be discipline specific)

The rationale for including this information is as follows:

Pre admission data.

It was considered by the panel imperative to have some understanding of the social and functional status of the patient prior to their stroke. This was frequently referred to as 'base line data' and was valued as providing a backdrop for the establishment of patient centred goals. It was accepted that the primary consultation between each professional group and the patient and his/her relatives may have elicited much of this information, and in fact the range of information collected might exceed that considered as a minimum for a 'gold standard'.

In terms of the social circumstances the minimum data that were considered as essential were the patients home circumstances in terms of pre admission support from others and some indication of facilities in the house such as the need to use stairs and provision of toilet facilities. The rationale for inclusion of these items was that a patient highly dependent upon another for personal care prior to the stroke was unlikely to be independent in personal care following a stroke. The requirement to use stairs would have implications for the level of mobility the patient would have to achieve to enable discharge home as would the need to use an outside toilet. In essence an understanding of the patients pre admission social circumstances would facilitate discharge planning.

An understanding of the patient's pre admission functional status was justified on the same grounds, that is, it is necessary for discharge planning. Four areas were considered indicative of the patient's pre admission functional status as follows, mobility, urinary continence, eating and drinking and mental status. As with the social circumstances an awareness of the patient's pre admission

functional status was deemed necessary for rehabilitation goal setting.

Current Status

In addition to the pre admission data the panel considered that goal setting could not be established without information recording the patients current status in terms of the persons physical, psychological and social problems. It was accepted that this information would be specific to each patient but that there should be a relationship between the assessment record, problem identification and plan of intervention.

Plan of Intervention

It was agreed that the plan of intervention should include the establishment and recording of patient centred goals. There was general agreement amongst the panel that short term and long term goals should be recorded. There was, however, some disagreement between the professional groups as to the terminology used and the nature of goal setting. A working model was used to gain consensus about goal setting.

A goal was agreed to be the aim or long term aim and this was visualised as discharge from hospital. This was seen illustratively as "getting out or getting over the wall". In terms of a time frame goals were considered to be achievable in a period of time greater than one month. Objectives were synonymous with short term goals in some professional groups. Agreement was reached that objectives referred to goals which should achieved in a time frame of 2 to 4 weeks. These were seen illustratively as the sides of a ladder enabling the patient to progress towards achievement of goals.

The shortest term aims were considered as rehabilitation targets by some of the professional groups. These were considered to be largely profession specific rather than reflecting the collective team goals. They were considered to be achievable within days and up to 2 weeks. These were seen illustratively as the rungs of the ladder, that is the most specific and reflecting the smallest levels of increment towards independence.

It was accepted as unlikely that a professional group would record rehabilitation goals in all 3 time frames and that those recording rehabilitation targets would not normally record objectives. As previously stated though the panel members considered that all professions records should state short and long term goals.

In addition to this time frame it was agreed by the panel that goals should be specific to individual patients. Additionally it was agreed that goals should be written in such a way to be measurable. That is goals should be written in behavioural terms allowing for measurement of patient progress. A contentious area in regard to goal setting was the establishment of realistic and achievable goals. It was agreed by the panel in principle that goals should be able to stand the scrutiny of being realistic but anxiety was expressed that it was tantamount to 'crystal ball' gazing to know what the patient was likely to achieve in a specific time frame. Review of existing patient documentation did however reveal that professional judgement was being exercised by members of the professional rehabilitation team and that in many instances professionals were recording goals that peers would have considered as realistic and achievable.

In summary the 'agreed standard' of patient documentation necessary for rehabilitation goal setting was considered by a panel, representing each of the core professional groups, to require information about the patient in the following domains. Pre admission social and functional status, current status in terms of physical, psychological and social problems, and a plan of intervention. The plan of intervention was to be based on rehabilitation goals which were 'SMART' goals, that is, specific, measurable, achievable and relevant, and time framed. The overall goal was to reflect the teams' goals for a specific patient but rehabilitation targets or objectives could be profession specific.

In order to survey the records of patients in regard to rehabilitation goal setting a checklist was devised to reflect the content of the 'agreed standard'. For each item on the 'agreed standard' a 4 point rating scale was placed as follows:

Yes unequivocal	Yes some useful	Yes not useful	None

For items to be placed in the 'Yes, unequivocal' box entries in records had to contain all the information as listed in the 'agreed standard'. The distinction between 'some useful information' and 'not useful information' is more subjective. For an entry to be regarded as useful it had to have information relating to the 'agreed standard' but the entry would have omissions. Not useful information was regarded as information which related to the broad category, e.g. pre admission social status, but which did not contain information which the panel regarded as necessary for rehabilitation goal setting. Where no information was recorded this was rated as 'none'. The questionnaire is detailed in appendix 7.

Exploratory Work

Introduction

Exploratory work commenced in 1994 and was undertaken in a variety of study sites none of which involved respondents used in the main study. Each of these study centres was considered as appropriate for piloting the data collection instruments. It was accepted that stroke units would each have there own culture and working practices but this did not preclude the administration of the instruments.

The aims of the exploratory work were:-

a) to test and refine the instruments
b) to test the suitability of a stroke unit as a location for data collection
c) to increase the researcher's experience in the application of the instruments and in data collection techniques
d) to establish the usefulness of the interview guides
e) to establish the face validity of the documentation survey instrument.

Instruments used are as detailed in appendices 1,2,3,4,5,7,

Testing of Instruments

Exploratory Interviews with Staff and Patient Respondents

The researcher wished to identify staff who had experience of working on a stroke unit and patients who had recently been discharged from the stroke unit, but who would not form part of the main sample. The stroke unit identified for the main study had a team of researchers attached to the unit but not providing direct care to patients or involved in the day to day running of the unit. Many of these researchers had experience of working on the unit prior to taking up research appointments. It was accepted that this group were not typical of the respondents to be approached in the main study but it was considered that the use of this group could fulfil the aims of the exploratory work. The patients selected for the pilot study were considered as typical of those who would be interviewed for the main study.

Sample

The staff sample comprised of two nurses, one physiotherapist and one doctor. All were made aware of the nature of the study and agreed to be interviewed. The patient sample consisted of two patients who were discharged to their own home following a period of in-patient care in the acute stroke unit and subsequently in the stroke rehabilitation unit. One patient respondent was male the other female. Both had other family members living in the same house.

Method

Arrangements were made to interview the staff informants in a quiet office in the administration block of the

hospital which afforded privacy and avoided interruption. Arrangements were made to interview the patients in their own homes at a mutually convenient time. The interviews were audio tape recorded and the interview followed the appropriate interview guide as previously described. Informants were assured of confidentiality.

The staff informants appeared to be at ease but it is noteworthy that they were known to the researcher. The staff semi structured interview guide appeared to work well in that informants had no difficulty in answering questions. The conversations appeared to take a similar form and as such topics seemed to flow logically from one to another. The use of phrases such as, "turning now to the rehabilitation team" seemed not to interrupt the flow and help guide each of the respondents. The use of probing questions was useful and helped keep the respondent from wandering away from the topic.

The informants were able to talk about themselves including their professional training and their professional career. They spoke freely about the rehabilitation team and the rehabilitation setting. Progressing the interview from the general to the specific and from factual information to information than would require a more considered response appeared to be successful.

I had introduced myself, in the presence of the ward manager, to the patient interviewees whilst they were still in hospital. The patient interviews were less successful with the informants appearing eager to express their gratitude at the care they had received and their thanks that they got home again. This was especially so with the first respondent interviewed. He was not particularly discerning as to what had been of help to him and seemed

eager not to express any negative comments. When conducting the second interview the use of probing questions produced more insightful views of the respondents experience of rehabilitation. On the positive side the patient interviewees did not appear uncomfortable or threatened by the questioning and appeared to welcome the visit from somebody from the hospital.

In the event the interview guide was left more widely open than the staff interview guide. The small number of respondents identified for the exploratory work made it difficult to determine if the responses were attributable to the interview technique or differences between individual patients and this is accepted as a limitation.

Analysis of Exploratory Interviews

In order to test the usefulness of the interview guides the interview audio tapes were transcribed and the tapes then listened to and notes appended to the transcription. The purpose of undertaking this exercise was not to generate findings but to determine if modifications were needed.

Modifications to Interview Guide

The purpose of the staff interview was to focus on the context of stroke rehabilitation and to give some insight into the attributes of those working in this area. The interview guide was organised into 4 sections. The first section was concerned with eliciting information about the professional themselves (structural components) including some basic biographical data and data concerning the respondents profession, academic level of professional training, professional and academic qualifications and length of experience. This section was omitted as interview questions and made into a questionnaire for self completion

as respondents in the exploratory work were self conscious reporting this type of factual information. As a consequence an opening rubric was needed.

The first section of the interview was concerned with the respondent's professional career and included items about career choice, rehabilitation experience and professional activities. The second section was concerned with the rehabilitation team and focused on the structure and processes occurring within the team as perceived by the respondent. Additionally information about the outcomes they sought and goals they worked to was sought.

The final section was concerned with the rehabilitation setting and sought to elicit information about the specific arrangements within the particular stroke unit.

The principle of progressing the interview from the general to the specific and from factual information to information that would require a more considered response (Smith 1975) was followed and provided a platform for introduction to the interview for both the interviewee and interviewer. The interview guide was devised such that the major questions could be asked the same way each time but allow the interviewer to alter the sequence and probe for further information (Field & Morse 1985).

The patient interview guide was left in a more unstructured form but additional probing questions were noted to give guidance during an interview. It was anticipated that patient informants were likely to be more variable than staff informants.

The staff and patient interview schedules were revised and prepared for use in the main study.

Survey of Interprofessional collaboration using the Team Observation Protocol

Permission was granted by the Clinical Services Manager and Ward Manager to attend a team conference to observe the processes that were involved. The team conference was held on a stroke rehabilitation unit and the meeting convened in a ward office. The position of the team members present is illustrated in the following diagram (see figure 1)

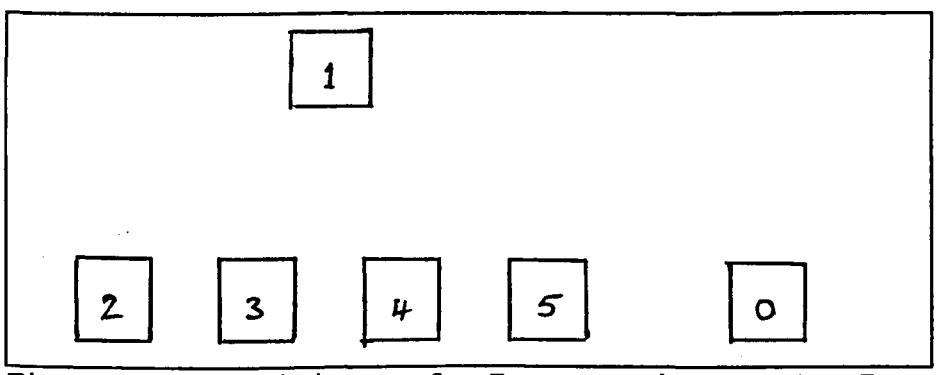


Figure 1 Position of Team members at Team Conference

Key: 1=Ward Manager
2=Physiotherapist
3=Occupational Therapist
4=Speech and Language Therapist
5=Nurse
O=Researcher

N.B. The doctor did not routinely attend these team meetings.

Collection of Exploratory Data

The office was not big enough for all team members to sit around a conference table or desk. The ward manager assumed the position at the front of the other team members and sat in an elevated position on a desk. The other team members sat around at the edge of the room on chairs. The observer

sat amongst the team members (mark 'O' in the above illustration).

The TOP record was completed using the 'rules' suggested by Ducanis and Golin (1979). The TOP proved reasonably straight forward to complete in a situation of 5 team members present. The recording sheet did however become rapidly cluttered with the numerical sequencing of statements. A separate record sheet was used for each patient discussed at the team conference. A further problem was noted when more than one team member spoke at the same time. In this event a judgement was made as to 'whom had the floor' and the statement 'logged' to that particular team member. This was considered to equate with Ducanis and Golin's (1979) claim to record only major statements.

When brief statements were made, such as 'yes' it was noted that a number of other team members may also have been nodding in agreement but the TOP excludes systematic recording of non verbal behaviour. An attempt to note these actions anecdotally was abandoned due to the difficulty of maintaining a record of verbal statements concurrently with major statements.

In total 23 patients were discussed at the team conference in a period of 48 minutes. An average of 2 minutes per patient but some patients appeared to require very little discussion, for example, a patient new to the unit who had not had a full assessment completed. In situations of patients with complex problems there was universal agreement to hold a case conference specifically for that individual patient. It was possible to discern a pattern to the processes of communication in the team conference after a few patients which eased the task of completing the TOP record.

The TOP appeared to be a useful tool for understanding the processes occurring in the team conference. Analysis of the exploratory work showed that it was possible to use the tool, that it gave useful insights to the processes involved and that team conferences were concerned with more than task functions.

Survey of team working using the Team Climate Inventory

The Team Climate Inventory was piloted on a stroke unit in the North of England. The sample comprised of 10 members of the rehabilitation team (2 doctors, 2 physiotherapists, 1 occupational therapist and 5 nurses). The questionnaire was administered as a postal survey with a self addressed return envelope. Additionally respondents were asked to comment on the completion of the questionnaire itself and to identify how long it took to complete and if they encountered any specific problems.

Collection of Exploratory data

Ten questionnaires were returned from 12 despatched. The raw data was entered onto the Team Climate Inventory software and the analysis undertaken. The instrument revealed the team "personality" via the team profile sheet.

The exploratory work suggested that the scale could be administered to members of the multi professional stroke team and that team members did not find any difficulty in completing the questionnaire. Respondents took about 15 minutes to complete the questionnaire. The instrument was considered as valuable in eliciting the team climate. The use of multiple methods allowed for checking the veracity of responses. The use of semi structured interviews with participants concerning their perceived contribution to stroke rehabilitation and the expectations they held of

others was considered appropriate to check the veracity of responses.

Survey of Staff Attitudes to stroke rehabilitation questionnaire

The attitude scales modified from the original devised by Hamrin (1982) were administered to a sample of each of the professional groups as follows: doctors (n=2) (Senior House Officers on completion of their rotation to the Care of the Elderly Directorate and hence not to be included in the main study). Physiotherapists (n=2), Occupational Therapists (n=1) (Basic grade on rotation to the Stroke Unit and hence not included in the main study).

Collection of Exploratory Data

The prime purpose of the exploratory work with this data collection instrument was to ensure that it could be completed by professional groups other than nurses. The instrument had been used by the researcher previously in surveys of nurses (Gibbon 1991, Gibbon and Little 1995) and found to be acceptable and useful. The completion by the other occupational groups in the exploratory work presented no difficulties to these professionals in terms of completing the questionnaire.

Survey of Documentary Sources

A random sample of patients' records were selected from a stroke patient database in a hospital setting. In total 6 complete sets of records were requested. For each patient a complete set of records were medical notes, nursing documentation, physiotherapy records and occupational therapy records. A panel of professional staff comprising of core members of the multiprofessional stroke team agreed

to review the records. In addition a clinical psychologist agreed to review the records concurrently with the core members. Patients' records were considered one at a time and each member of the review team rated the contents on a separate questionnaire independently.

Interrater reliability was checked by measuring levels of agreement between the raters. High levels of interrater reliability were found at 80% agreement. Question number 1 was reworded to more accurately reflect the nature of the information being surveyed. This was changed from "pre-admission health status" to "normal living pattern". In terms of the current documentation it was agreed that some of the material recorded would be of necessity professional group specific. Further clarification was required in regard to psychological problems. The panel considered that psychological problems noted should include mood, cognitive impairment and motivation.

Whilst the purpose of the exploratory work was to test the suitability of the instrument rather than generate findings it was noted that much relevant information was not recorded. One interpretation placed on this was that omission equated to an absence of a problem. That is, a system of 'management by exception' was being deployed. It was not possible to verify this interpretation and it was considered that patient documentation should be comprehensive.

The tool with the modifications was considered appropriate for the nature of the study.

Conclusions

The results of the exploratory work suggested that the instruments selected were acceptable and appropriate to the topic of study. All of the instruments used in the exploratory work were therefore retained for use in the main study.

In summary the data collection instruments were:

- Semi structured interview schedule for staff
- Semi structured interview schedule for patients
- Team Observation Protocol
- Team Climate Inventory
- Staff Attitudes questionnaire
- Rehabilitation Goal Setting questionnaire.

MAIN STUDY

Sample

Within the spirit of case study method a single stroke unit in the North West was selected. The selection criterion was simply a willingness to participate in the research. The sample in this study consisted of 26 members of staff comprised of 16 nurses, 5 physiotherapists, 3 occupational therapists and 2 doctors. Additionally twelve patients provided in depth interviews for the main study.

Structure of the Stroke Unit

The stroke unit is situated in a large District General Hospital on the outskirts of a city in the North West of England. It serves a population of ~300,000 people. The development of the stroke unit has taken place within the original architecture of the hospital building. Each ward was designed to accommodate 36 in-patients in units of 6 'five bedded' bays and 6 single rooms. All the wards admit patients of either sex but 5 bedded bays within the ward are retained for single sex occupation.

The Acute Stroke Unit

The acute stroke unit was housed in a general medical ward and comprised of an 18 bedded Acute Stroke Unit. This is half the complement of beds on a medical ward. The remaining eighteen beds are used for acute medical admissions (medical beds). The eighteen acute stroke unit beds and the eighteen medical patient beds share the same ward manager but the nursing staff are allocated to work either with patients on the acute stroke unit or with patients in general medical beds. Rotation of nursing staff from acute stroke unit to medical beds does take place at

periodic intervals. Deployment of physiotherapists and occupational therapists is specific to the acute stroke unit. The patients on the acute stroke unit are managed by one of two Consultant Physician/Geriatricians.

Stroke Rehabilitation Unit

The Stroke Rehabilitation Unit is comprised of 25 in-patient beds. No other patient diagnostic groups are routinely cared for on this ward. The patient complement is reduced from the standard 36 patients to 25. Two '5 bedded bays' are not used for in-patient beds but have been re-designated as treatment rooms. One is devoted to physiotherapy treatments and one to occupational therapy treatments. The designation of these rooms for therapy allows for ward therapy based rehabilitation to take place. A single room has been re-designated for speech and language therapy and for interviewing patients' relatives.

Access

Since the research project involved the collection of data from the hospital staff and patients, it was necessary to seek approval from the Clinical Director and Clinical Services Manager. A full explanation of the purposes of the study and the proposed methods of data collection was given and comments of the methods and instruments invited. The study appeared to be received positively. Permission to undertake the study was granted by the Clinical Services Manager and Clinical Director (see appendix 8).

Ethical Considerations

The project involved collection of data from hospital patients and from staff. It was therefore necessary to seek approval from the Local Research Ethics Committee. A

submission to the ethics committee was made and following clarification of sample size the study approved (see appendix 9).

An explanatory letter and consent form for potential respondents was devised and may be found in Appendix 10.

DATA ANALYSIS -

Interview Data

Recording Interviews

The advantages and disadvantages of audio recording interviews as compared to note taking in interviews have been well articulated in the literature (for example, Melia 1984). Previous experience had demonstrated the advantage of audio tape recording over note taking and this method was adopted in this study. In particular audio recording allows for the recording of rich data and overcomes the difficulty of maintaining the flow of the interview when writing notes is undertaken.

Respondents were interviewed on one occasion only and it was anticipated that the interview would be conducted in less than 45 minutes. In the event all interviews were completed between 33 minutes and 40 minutes with the exception of one interview which lasted one hour and 5 minutes.

Processing of Interview Data

Tape recorded interviews were transcribed by a professional secretary with experience of dealing with confidential material for analysis. In order to maintain close attention to the data each tape recording was replayed by the

researcher and the accuracy of transcriptions checked and corrected where necessary. Notes were added to indicate non-verbal behaviour, for example, tone or other noteworthy attributes, such as, "nervous laugh". This is a necessary pre requisite of the analysis process (Field and Morse 1985).

The analysis approach taken in this study was content analysis which is a method of categorising and organising verbal data for the purposes of classifying and summarising data (Fox 1982). There are two forms of content analysis; manifest; and latent (Field and Morse 1985). Manifest content analysis involves identifying significant words, phrases or descriptions which are related to the research topic. These can then be tabulated and subjected to descriptive statistical analysis. Latent content analysis differs in that a review of passages or paragraphs within the context of the entire interview are coded according to the major thrust of intent of the section and significant meanings within the passage.

In essence latent content analysis gives attention to the underlying meaning of the data. The methods are not mutually exclusive and can be used to complement each other.

Schatzmann and Strauss (1973) suggested a useful framework to guide the analysis process and this was adopted by the researcher. They suggest that the audio-tape be listened to and preliminary notes made. The notes are then divided into 3 categories:-

1) methodological notes which record details about the conduct of the interview

2) transcriptions of interviews which constitute

observational notes

3) theoretical notes of interpretations, inferences and emerging categories.

A similar process is described by other authors, for example, Miles and Huberman (1994). A mechanism for coding the interview data was needed to identify themes or phenomena and to enable data retrieval. A code is a way of labelling the data and it can take the form of either an abbreviation or actual words used by the respondents. The researcher can then identify similarities and differences and look for common themes in the data.

The initial coding allowed the data to be fractured and tentatively placed within one or more open codes where firm conclusions were deliberately avoided. The analysis of early interviews provided opportunities to improve the quality of interviewing technique because effective and ineffective techniques could be identified and the lessons learnt used in subsequent interviews. One consequence of this was for interviews to become slightly longer as the study proceeded. As the analysis proceeded items of data were grouped into smaller, more specific, categories. Using the principles of analytic induction categories were formulated which held across all the data collected. This was achieved by actively seeking negative cases and when found redrawing the boundaries.

Analysis of Team Observation Protocol

Ducanis and Golin (1979) provide a category of descriptions of the TOP these are detailed in the following table (see table 10)

Table 10 Category Descriptions of the TOP from Ducanis and Golin (1979) p97

Category	Description
1. Client	All affective statements (+/-) regarding the client. Neutral statements about the client are coded in categories 3-7;category 1 includes only statements revealing an emotional reaction to the client, such as hostile or joking references to the client.
2. Team	All affective statements (+/-) about the team or team members. Neutral statements about the team would be coded in categories 3-7; category 1 includes emotional reactions to the team itself or to another team member. It included joking, laughing or hostile remarks.
3. Questions	All statements asking for information, suggestions, or opinions, or requesting reports.
4. Information	All statements giving factual information, dealing only with what is observed, without interpretation.
5. Interpretation	All statements which give an opinion or interpretation, going beyond empirical data to make inferences about what has been observes.
6. Alternatives	All statements which suggest alternatives, explore or compare possible courses of action.
7. Decisions	All statements which deal directly with the final decision -expressing, clarifying or elaborating the decision reached.

In summary two categories were concerned with affective statements (categories 1 and 2) about the client and team members respectively. The remaining five categories are concerned with task function.

The recording sheet previously described in the development of the instrument allowed for the recording and classification of statements and the subsequent summation of statements in each category according to profession. The recording sheet also allowed for recording the sequence of statements made. A separate recording sheet was used for each patient discussed at the team conference.

The data were then amenable to analysis of frequency of statements according to category and according to professional staff member making the statement. It was also possible to determine the sequence of statements and to determine if there was any pattern to the statements made.

Consideration was given to determining if there was any difference between the professionals making statements and any differences between the categories of statement by statistical analysis. Analysis at this level was rejected on the grounds that each professional had discipline specific information to impart which would influence the nature and number of statements they were likely to make in a team conference and that descriptive statistics would adequately report this. Additionally each profession could have been represented by one of a number of staff at each team conference which would complicate the findings in that the number of statements may be attributable to the characteristics of the individual rather than the professional group. The use of inferential statistics were not considered to add any useful interpretation to the data.

Validity and Reliability

In terms of validity and reliability the authors (Ducanis and Golin 1979) have not presented any evidence of reliability or validity of the data collection instrument. Furthermore they suggested that norms are best developed by agencies using the TOP as these will reflect the particular population at hand. Ducanis and Golin (1979) did however report summaries of the statements made in each of the 7 categories in their observation of 9 different teams. These studies were however conducted in a United States context. The TOP did however have face validity.

Whilst frequent reference is made in the literature to the work of Ducanis and Golin (1979), for example, Mariano (1989), Forbes & Fitzsimmons (1993), Strasser, Falconer & Martino-Saltzmann (1994); no studies were identified that had specifically used the TOP. Despite this the instrument appeared to be useful for the topic under investigation in this study.

Analysis of the Team Climate Inventory

The instrument is purchased with its own computer software for data analysis. Raw data are entered directly onto the software via a personal computer from responses and the programme produces a team profile together with a textual interpretation of the data in each of the subscales. The team profile sheets can then be compared to a set of norms produced by the Anderson and West (1994).

The data are analysed and presented in four scales, according to the four factor theory of climate, plus a social desirability scale. For each scale there are a number of subscales and sten scores are presented for each of these. A sten score represents the range of all team scores on a 10 point range where 1 represents a low score. At each end of the range is a polar descriptor and the further a score moves from the mid point (5) towards the pole then the more it tends towards the descriptor.

Validity and Reliability

The TCI was developed to measure the team climate in organisations and not the attributes of individuals. The TCI has been subject to numerous psychometric tests for reliability and validity.

The TCI scale shows high levels of reliability (internal homogeneity). Scale reliabilities range from 0.84 to 0.94 whilst sub-scale reliabilities range from 0.64 to 0.91 (Anderson and West 1994) using Cronbach's coefficient alpha.

Construct validity was measured by correlating subjects self reported ratings of group climate and content analysis of team meetings. Inter rater reliability ranged from 0.77 to 0.88 suggesting adequate levels of agreement.

To ensure that the TCI was capturing shared perceptions of the climate rather than aggregating diverse individual perceptions Anderson and West applied the James, Demaaree and Wolf (1984) formulae. The inter rater reliability groups coefficient ranged from 0.67 to 0.98 confirming that the TCI is consistently tapping shared climate perceptions (Anderson and West 1994).

Processing of Staff Attitudes Data

Each of the 14 items on the scale has a 5 point rating with 5 indicating a positive attitude (scoring for negative items is reversed) the total score is the score of the respondent on the scale. The completed attitude scale was scored by overlaying the questionnaire with a template and hand scoring the responses. The responses to each item were then summated. A maximum score for the scale is 70 and the minimum score 14. The item scores and total scores were then entered onto a personal computer and analysed using the SPSSX pc version 5.0.1 computer programme.

In the original work by Hamrin (1982) three bands of scores were proposed representing high(>56), medium (44-56 inclusive) and low (<44) scoring bands. Each respondent is assigned a score which indicates a position on a continuum

with the highest score representing a positive attitude towards stroke rehabilitation.

Hamrin (1982) demonstrated the reliability of the scale using an inter-item analysis. The internal consistency of the scale was demonstrated by Hamrin (1982) to be 0.77 using Cronbach's alpha coefficient.

Statistical Analysis

Descriptive statistics were used to express the proportion of respondents in each scoring band according to unit of employment and profession. Inferential statistics were used to determine if there were any significant differences between respondents according to unit of employment, experience of respondent, profession, age, and sex.

The statistical analysis used non-parametric statistics which assume that the distribution of the variable in the population from which the sample is drawn is not normally distributed. The Mann Whitney U test was used to assess any significant differences between two sets of data from independent groups e.g. unit of employment, and the Kruskal-Wallis test used with three or more independent groups. These tests are used to determine if two or more independent samples come from the same underlying population. They are the most powerful of the non-parametric tests, and the Mann-Whitney U Test is a useful alternative to the parametric t test (Siegel and Castellan 1988). In the tests, the scores from each group are ranked together in order of increasing values, and the rank sums compared for each group. The probability that the distribution has occurred by chance is given by the p value. In this study the probability level of $p=0.05$ was taken as the value of p below which any differences were

accepted a significant. This means that the probability of the observed differences occurring by chance was 5 in 100.

Data Analysis of Documentary Sources Questionnaire

A panel of professional staff agreed to assist in the data analysis which consisted of reading patient records and determining if specific information had been recorded. A recording sheet was devised as follows. Whilst the exploratory work had shown acceptable levels of interrater agreement and hence removed the requirement to have more than one rater there were very real practical benefits to using a panel of professional staff. Document retrieval and scrutiny is time consuming and tedious. When approached by more than one person, working towards the same goal via the questionnaire and guidelines, the practical difficulties of isolating the appropriate sections of the patient records are resolved. Cross checking amongst raters eliminated the risk of inappropriate classification of entries.
Descriptive statistics were used to report the proportion of notes containing useful information in each of the categories of assessment. The initial plan to report the proportion of records containing information in each of the four categories of usefulness was abandoned in favour of grouping information as either useful or not useful. In part this overcame the difficulties of subjective interpretation as to the degree of 'usefulness' as a consequence the interrater agreement improved to 100%. Consultation with a statistician suggested that this was the most appropriate level of statistical analysis.

Summary

This chapter has introduced the reader to the application of the principles of practitioner research to this study. This included a description of the factors which influenced the decisions made in regard to the selection

and development of research instruments and the selection of respondents. The declaration of these influencing factors is a necessary pre-requisite in practitioner research to allow the reader of the final text to judge the analyses in the context of the stand taken. The rudimentary conceptual framework guiding the study (figure 7, chapter 3) was developed to illustrate the concepts under study and matched against the research method (figure 8, chapter 4). Having decided on the concepts under study the development of the research instruments are described.

The chapter went on to describe the testing of the instruments through exploratory work and concluded that the chosen research instruments were appropriate to the research question. Details of the main study were given including the case study site, the sample, access and ethics committee approval. Data analysis was then discussed in terms of the processing of the data and in terms of the validity and reliability. The following chapters report the findings of the main study.

Section III

Findings

Chapter 5

Findings of in-depth interviews with staff and patients.

Introduction

This chapter addresses structural, process and outcome aspects of the research study from data collected by in-depth interviews with staff and patients. It describes the context within which the care and rehabilitation of stroke patients occurs by

- describing the structure of the stroke unit

- uncovering the team members understanding of their role in the process of rehabilitation and their expectation of others

- exploring service users perceptions of the key contributors to their rehabilitation.

The data collection method of in-depth interviewing is set in the qualitative tradition and as such the findings are presented within the context of the discussion.

Structural Components

Profile of Respondents

All professional staff working in the stroke unit were invited to participate in the study. Bank and agency staff were excluded. A summary of the respondent biographical characteristics are detailed in appendix 10. Summaries of biographical data are presented in the following table. (see table 11)

Table 11 Summary of Profile of Respondents

		Doctor	Nurse	Physio	OT
Sex	Male	1	5		
	Female	1	11	5	3
Age	21-30 yrs	2	7	4	3
	31-40 yrs		5		
	>41 yrs		4	1	
Experience	1-3 yrs	2	6	2	1
	4-6 yrs		2	1	2
	7-9 yrs		3	1	
	>10yrs		5	1	

Predictably the profession with the highest number of staff working on the stroke unit was nursing. The therapy staff were present in the next highest numbers with slightly more physiotherapists than occupational therapists. The majority of respondents were female (n=20) and males were not represented in any of the therapy professions. Most of the respondents were below the age of 30 years (n=17). Those over the age of 30 years had the greatest length of experience, more than 10 years, suggesting that although each of the professions recruited mature entrants the experienced staff were those who had entered their chosen profession early.

A range of years of experience was evident. The medical staff included in this study were at the Senior House Officer grade and hence were in the early stages of their career. All of the other professions had a range of experience.

Differences were noted in terms of the academic level of preparation of each of the professional groups which to a large extent reflects the history of education for each of the professions. The academic level of basic training was diploma or degree level for all professions except nursing where the majority undertook training at certificate level (n=13).

Post registered professional training was undertaken by a number of respondents. Five had completed the post registration English National Board approved course in 'Care of the Elderly' (ENB 941) (n=5) a number had also undertaken the ENB approved 'Teaching and Assessing' course (ENB 998) (n=5). Whilst the focus of this course is towards the assessment and teaching of student nurses the principles of teaching and assessing should be transferable to other populations including patients. Physiotherapists (n=2) had undertaken specific training in Bobath techniques for the rehabilitation of stroke patients. The nurses and the physiotherapists who had undertaken post registration courses could be seen as pursuing courses appropriate to their practice, albeit the Bobath course for physiotherapists is more focused and hence specialised for stroke care than the care of the elderly course for nurses. One occupational therapist had pursued further professional/academic study by completing the certificate in NHS management studies.

Two nurses were at the time of data collection undertaking further academic studies by pursuing a post registration Bachelor degree in either nursing or health studies and one physiotherapist had completed a Master of Science degree in movement science.

The medical staff included in this study were both in junior hospital doctor grades and as such the very nature of the post was a training post. Post registration training for medical staff is organised by a college system whereby doctors pursue membership of a College of a branch of medicine appropriate to their intended area of practice, for example a doctor wishing to follow a career in medicine and care of the elderly would pursue studies appropriate to membership of the Royal College of Physicians.

Professional career

The researcher was interested to determine if factors influencing the respondents entry into their chosen profession in general carried through to influence their employment in a stroke unit. It was accepted that for many on entry to their chosen profession the notion of electing to work in a stroke unit would not have been an option given the fairly recent establishment of such units. All of the professions included in this study offer a wealth of career routes which would have some bearing on the amount of contact and depth of contact with stroke patients. For example, a nurse choosing a career in surgical nursing is likely to nurse a stroke patient from time to time whereas a nurse electing a career in care of the elderly is likely to have much more frequent contact. A physiotherapist electing to work in sports medicine is much less likely to work with stroke patients than a physiotherapist who had chosen a career in hospital physiotherapy, similarly an occupational therapist choosing a general hospital or

social services career is more likely to work with stroke patients than an occupational therapist working in mental health care.

Factors therefore likely to indicate a choice in working in a stroke unit were considered to be, in increasing order of specialisation; a career in general hospital work, care of the elderly, and rehabilitation.

Respondents were asked about the factors influencing their entry into their chosen profession and three categories of response emerged from the data; direct entrants, incremental entrants and external others.

'Direct entrants' referred to those who had made a conscious career choice and had selected this whilst in full time school education and prior to employment. They either cannot recall wishing to pursue any other form of employment/profession or had considered alternatives and made an considered choice.

'Incremental entrants' referred to those who were in their current profession following another hospital appointment. They did not select the profession they were now employed in whilst at school/college but either expressed a desire to assist people and/or took a hospital appointment which gave them some exposure to the health care professions.

'External other' referred to those who had commenced employment in an unrelated field to health care. They did not select their chosen profession whilst at school/college and were mature entrants to their chosen profession.

Respondents were also asked about the factors influencing their original career choice and three categories of

response emerged from the data; active seekers, passive recipients and victims of circumstance.

'Active seekers' were identified as those who took charge of their career moves, they made conscious choices and were prepared to move to get what they wanted from a job.

'Passive recipients' were identified as those who's career had been shaped by others, they yielded to suggestions of management and appeared unable or unwilling to move to get what they wanted from a job.

'Victims of circumstance' were identified as those who were either in a rotational post as a consequence of their grade at the time of the data collection, (for example, a junior hospital doctor or a basic grade therapist) or were working on a ward which changed its designation as a consequence of a managerial decision (for example, a nurse working on a general medical ward which became redesignated as an acute stroke unit).

It was possible to enter respondents on a matrix of professional entry by career choice:-

Table 12 Matrix of Professional Entry by Career Choice

	Direct entrants	Incremental entrants	External other
Active seekers	Nurses n=2 Physio n=4 OT n=3		
Passive recipients			Nurses n=6
Victims of circumstance	Nurses n=3 Doctors n=2 Physio n=1	Nurses n=5	

Key
Physio = Physiotherapist
OT = Occupational Therapist

A notable finding is that the only professional group not to rely on direct entrants is nursing. In the case of nursing those entrants who now work in the stroke unit are more likely to have had internal or external employment prior to undertaking nurse training than entered directly.

Professional entry

NURSES

Direct Entrants

Few nurses identified on the stroke unit had entered nursing directly, where they had, they had aspirations to help people and wanted particularly to work with and help sick people to get better. This perhaps time worn cliché was recognised by the respondents themselves, for example,

NR19 "...I know it sounds 'corny' but I always wanted to do ... to work with people and care for people and to see people get better, very idealistic ..."

but it does indicate that an acute care mind set acted to guide the person to enter nursing. The notion of working with people appears to apply to working in a team alongside others as well as applying to working in a people oriented profession. The above quotation also explicitly illuminates the desire to be active and doing things for people rather than creating the environment for people to be able to do for themselves, now recognised as a pre-requisite for rehabilitation. Additionally the notion of 'cure' expressed through the term of seeing people get better is evident, and although recognised by this respondent as idealistic, tends to fit more closely with nursing people with acute illnesses than those which lead to chronicity and disability.

The direct entrants to nursing appeared not to have considered other health care professions as a career and felt that they wanted to do a practical job which would not be beyond their academic abilities, for example,

NR10 "...I flumped 'A' levels .... and knew I wasn't academically very good .... so physio and that ... I knew you'd need some more qualifications."

It was not part of this study to examine individuals general education qualifications and therefore no assessment of whether these respondents could have met the then entry criteria to other health care professions was undertaken. It is however noteworthy that the perception of these direct entrants to nursing is that they would need to be more academically gifted in their view than they

perceived themselves to be to undertake preparation for another profession.

Incremental Entry

In the event of those having an incremental entry into nursing they frequently had internal employment within a hospital but not necessarily a direct health care appointment. For a number (3) they had entered nursing by firstly becoming a nursing auxiliary and then undertaking professional training, for some (2) this had been in two stages, firstly enrolled nurse training and then conversion to first level registration. An influencing factor of career choice appeared to be exposure to hospital and nursing services sometimes as a recipient of care, for example, maternity services. This is illuminated by the following extract;

NR3 "...when I went into hospital to have my little boy I thought I could do this job, I could do this, this looks like a really good job, so I just applied and that was that."

and sometimes as a consequence of interaction between staff groups, for example;

NR7 "...actually I was working in the kitchens downstairs ... and got to talk to nurses. They seemed to be enjoying it and so I applied and was surprisingly accepted ...."

As with the direct entrants perceived academic abilities were influential in career choice to those entering incrementally, for example;

NR6 "... I had no qualifications and I was looking for something to do, I had no 'O' levels and a friend suggested nursing... I started as an auxiliary, did EN and then converted...."

which illustrates the incremental stages. Another respondent entered nursing after another form of hospital work,

NR7 "... I had the qualifications to get into nursing ... nothing else except as a porter .... but I preferred to be a nurse."

The orientation of respondents in this category like those in the direct entrant category appeared to be towards doing things for others, for example;

NR7 "...[I] liked helping people, doing things for them and the like. It is rewarding."

External Other

Nurses in this category (6) had all worked in other industries prior to entering nursing. Some of these were 'people' oriented such as,

NR2 "....I was working in a housing department, and very often the needs [of the elderly] were not being met in the community. I wanted to deal with it in a caring profession in some way."

whereas others seemed to drift into nursing, for example,

NR5 "I started off ... when I left school ... just getting nowhere really, just 'dogsbodying' around, so I wanted a career. I didn't have any qualifications

so I wanted a career where there was a bit of promotion every now and again. I was too short for the police, I wouldn't join the army .... so nursing was just about the only thing."

This extract illuminates the academic abilities perception as found in the previous two categories and illustrates the wide entry gate that operates in the recruitment of nurses. Nursing would appear to be accessible to people who do not have formal qualifications and is seen as a career that can deliver rewards with promotion. The reform of nurse education and its re-location in the higher education sector with a greater emphasis on theory than the previous certificate level training is likely to influence the recruitment into nursing. Not least all entrants into nursing are required to possess evidence of academic achievement. In order to maximise the potential to recruit people who do not have the traditional school leaving qualifications access courses have been developed in the further education sector for such people who wish to pursue a career in a health related profession. It is noteworthy that this study was conducted in a district general hospital and the picture may be different in a university teaching hospital.

DOCTORS, PHYSIOTHERAPISTS, and OCCUPATIONAL THERAPISTS

For those working in a stroke unit entrants to each of these professional groups is direct, that is, the respondents made a conscious career choice whilst at school/college and considered alternative careers. Influencing career choice factors included early exposure to health care, for example, one doctor commented that;

DR1 "Mum and Dad are both psychiatric nurses and from a young age I became aware of hospitals. ... I did

voluntary work and developed an interest in psychiatry. That is why I chose to do medicine, to become a psychiatrist."

A consideration of alternative careers was also evident but these were notably all health care careers for example one physiotherapist said;

PT2 "I considered being a doctor or a nurse but they weren't for me. I looked at the therapies and thought physical therapy ... as I was interested in human biology...."

Medicine was the career choice most frequently considered by therapists and then rejected. To some extent the notion of academic abilities appeared to be influential in deciding between one profession and another, for example one physiotherapist said;

PT5 "I didn't think I was clever enough to do medicine"

and they were influenced by the level of commitment they perceived they would require to be successful, for example,

PT4 "I wanted to be committed to my career.. the training is so long... and then there is the housemanships with long hours, I thought I couldn't be doing with that, I've got a life outside and I don't want to make work my life...."

(physiotherapist)

Nursing was considered by the other professional groups especially the therapy professions but was discounted because of its image of low status, for example,

PT2 "Nurses are quite underrated, I know they have degrees in nursing now but even with a degree they are very underrated."

(physiotherapist)

and because of some of the activities that nurse engage in as part of their professional role, for example,

OT4 "I didn't think I was cut out for [nursing] in terms of blood and gore and the rest of it..."

(occupational therapist)

The therapists and doctors in this sample appeared to explore career options prior to making firm choices by undertaking visits to departments and seeking information from careers officers. The range of post qualifying opportunities appeared to be influential and careers seeming to offer variety had enhanced attraction. This was especially so for occupational therapists. Physiotherapists tended to choose physiotherapy because it appeared to be a practical application of a science.

The absence of categories other than direct entrants in each of the professional groups other than nursing is not explained in this study and may be attributed to the small sample as a consequence of case study method. It may be explained by the wide entry gate into nursing or perhaps a more 'purist' approach of entry into the other health care professions.

Nursing is the largest single occupational group and there have been numerous reports into the recruitment and retention of nursing staff (for example, Athlone 1938, Platt 1959, Briggs 1972, Project 2000) which have been interlaced with training requirements and approaches. The diversity of nursing and the need to maintain large numbers

to meet the needs of patients has led to reports such as "manpower solutions" (Dean 1987) and previously to studies examining the properties of nurses in terms of their recruitment and retention (Birch 1975). In addition to the shortage of nurses other occupational groups have similarly suffered recruitment and retention difficulties. This is most noticeable in the professions reliant on a largely female workforce where career aspirations and domestic aspirations compete. It does however appear that nursing is seen as a route out of employment with few if any prospects and into a professional career.

Career choice

NURSES

Nurses were identified in each of the three categories of career choice identified. Few nurses (2) were categorised as 'active seekers', whereas almost equal numbers were identified as 'passive recipients' (6) and 'victims of circumstance' (8). A number of nurses were categorised as 'victims of circumstance' because they were working on an acute medical ward which was redesignated as a mixed ward, half general medical ward, and half acute stroke unit. Whilst they would have been nursing acute stroke patients prior to this managerial decision a consequence of the decision was an increase in the number of acute stroke patients in their care. This gave rise to two key issues, firstly that of imposition. The nurses working in this unit expressed disquiet at the redesignation, for example;

NR15 "...I didn't actively go out to seek to work with strokes, because at the time I didn't particularly like working with strokes, it's not a field I would have chosen to do - I have to be honest about that

.... it was just decided that we were going to become a stroke ward, none of us were asked."

Secondly was the issue of expectation. The nurses perceived that they should have been prepared with the appropriate knowledge skills and attitudes to become a specialised stroke unit. They felt that whilst they were previously caring for stroke patients the notion of a 'specialised unit' designation would demand more of them in the eyes of patients, their relatives and other health care workers. At the time of the redesignation no additional training was provided. They felt insecure and unsafe, for example,

NR17 "...none of us knew what we were doing."

In addition to this ward redesignation a number of the 'victims of circumstance' were so classified as they took the only job available at the time, for example;

NR7 "I didn't actually choose to be honest, it was what was available at the time."

NR18 "It was the first job I was offered."

NR17 "It was the first permanent job, better than bank work."

The notion of availability of post extended beyond first appointments and into the area of promotion. At least one 'victim of circumstance' was working in elderly care because promotion was easier to secure,

NR1 "Promotion came in the rehabilitation ward and I went to Charge Nurse from a staff nurse."

The 'passive recipients' were characterised by their lack of involvement in the decisions relating to their careers. For example one respondent remarked,

NR2 "Obviously my career has been planned for me by my managers".

whereas another commented that

NR5 "...[my career] was basically chosen for me."

The managers were also responsible for the career decisions of others by giving them short contracts only, for example,

NR3 "I am on my fourth three month contract on the unit now"

The mechanism by which managers selected nursing staff to work on the stroke unit was unclear and to what extent this facilitates or thwarts the purpose of the stroke unit is also unclear. The nurses were distinctly different from each of the other professions in regard to career choices.

DOCTORS, PHYSIOTHERAPISTS, and OCCUPATIONAL THERAPISTS

Respondents in each of these disciplines were either 'active seekers' (8) or 'victims of circumstance' (3). The 'victims of circumstance' were each in basic grades and working on the unit as part of the rotational nature of their post. The majority were 'active seekers' who had made conscious choices to work in rehabilitation. The findings also suggest that 'active seekers' were 'direct entrants' in each of these professions.

The reason for actively seeking rehabilitation seemed to be grounded in the challenge of the position and it is notable

that the respondents set the rehabilitation of stroke patients within science and in particular neuroscience. They explained their interest in terms of an extension of physiology and in particular expressed interest in movement disorders and neuroplasticity, for example;

PT1 "I thought it was quite a skilled job, I have always been interested in physiology especially neurology..."

OT2 "I am interested in the motor relearning approach to stroke, particularly the upper limb."

The focus of their intervention as a form of treatment is distinct from nurses who expressed their interest in non-specific terms such as 'enjoying working with older people' and 'seeing them get better'. The therapy professions appear to regard their interventions in an active sense whereas the nurses' interventions appear passive at least in rehabilitation settings.

Previous rehabilitation posts

Respondents were asked about their previous experience in rehabilitation posts. No respondents had had previous rehabilitation experience in another institution. Only 2 nurses had worked in another provider institution as had one physiotherapist. The doctors may have worked in other provider units but not in elderly care or rehabilitation. Experience prior to working on the stroke unit had been gained either during training or as a consequence of holding a rotation post in the immediately post qualifying period. All this experience was classified as internal experience, that is, the learning opportunities had all occurred in one institution. Given the absence of formalised in-service training for nurses at the time of

the establishment of the stroke unit it is unsurprising that they felt insecure. The notion of learning occurring as a consequence of experience of working on a unit presupposes that the staff already in post have the knowledge, skills and attitudes to impart to others and the necessary teaching skills.

This finding is consistent with the notion of self sufficiency in training requirements and suggests that the manpower projections had been accurate enough for provider units to "grow their own". That is, hospitals are sufficiently aware of movement of staff in terms of recruitment and retention to ensure that there is a balance between the numbers of health professionals in training and the number of posts becoming vacant. The effect of self sufficiency on innovation and movement of the knowledge base is not understood. There is some anecdotal evidence that movement of staff brings with it not just a new person but a new experience which is stimulating to the existing team.

Professional activity

It was assumed that those who favoured working in a speciality, i.e. a Stroke Unit, would demonstrate a level of interest in the subject matter as evidenced by their professional activity. Professional activity was defined as a commitment to acquiring greater understanding of the processes underlying stroke rehabilitation through independent activities such as reading professional journals and through attendance or membership of professional societies.

NURSES

Respondents were asked about their membership of professional organisations and their involvement in the activities of the organisation(s). About half of the nurses claimed to be in receipt of membership of the Royal College of Nursing (Rcn), which is both a trade union and a professional organisation. The professional activities of the Rcn are organised through a collection of 'special interest groups' which have a national committee and a local group. A review of the Rcn's special interest groups would suggest that the most appropriate group for nurses working in a stroke unit would be 'Rehabilitation in Nursing Group' (RiNG) or 'Association for Care of the Elderly' (ACE). All the Rcn's groups are nursing specific, that is they do not admit persons other than qualified nurses. Membership of a 'special interest group' is a right of membership of the Rcn and does not require any additional fee payment. Special interest groups convene an annual meeting and conference which members must pay to attend.

Of those respondents who indicated that they were in membership of the Rcn no respondent indicated that they were in membership of any special interest group. Two respondents indicated that they were not only aware of the special interest group but they had considered that there were probable advantages, for example,

NR8 "I can see the advantages, update and all that, but I've not got round to it."

Others considered themselves too busy to take an active part, for example,

NR15 "I can see the advantages, but with working full time, a young family and a house to run, I think I am doing enough."

No evidence of the special interest groups meeting locally could be found and no respondents referred to attending local meetings. The exception to this was a group called the 'Northern Stroke Support Network' which claimed affiliated status to the Rcn special interest group but had declined to move into a 'full membership' group status as the group wished to remain a multidisciplinary group. This local group meets twice per year and appears to have been successful in attracting staff working on the stroke unit. The format for the meetings is part networking and part conference. Three nursing respondents reported membership of this group.

Two research societies, the Society for Research in Rehabilitation (SRR) and the British Stroke Research Group (BSRG) are also open to membership by nurses. These are multidisciplinary societies with the SRR attracting therapists and doctors and the BSRG particularly attractive to doctors. Membership is not dependent upon active research status in the area of rehabilitation or stroke but it is a pre-requisite of the SRR to have members nominated and full membership can only be conferred on those presenting a scientific paper which meets the approval of the voting full members. Membership carries a small annual cost as does attendance at the meetings. The recent increase in nurses undertaking research may lead to an increase in nurses represented on the membership of these groups but in the current culture these groups are unlikely to reach nurses working at unit level. There were no nurses identified in this study who were members of these societies but one respondent had attended a meeting of the SRR.

A series of stroke lectures organised by the clinical director of the stroke unit were arranged and open to all of the professions working on the stroke unit. Few nurses reported attending these at all (2) and a further 3 had attended 'one or two'. The low level of attendance was explained by some respondents as, for example,

NR7 "...[being] difficult to get off the ward,.... dinner time is busy with patient lunches, handover, and we've been on since seven .... we just want a break".

In this regard the nurses do differ from each of the other professional groups. Firstly nurse have commenced their day duty some two hours earlier than most other groups and secondly they do have responsibilities to patients over lunch which other professional groups do not have. Medical staff are usually able to fit in their work around professional activity of this nature and carry a paging device if their services are needed. The therapists do not usually see or make appointments for patients over the lunchtime period.

This situation gives rise to two issues, one of mechanics and one of culture. In terms of culture nurses are trained to undertake activities on behalf of patients when they are unable to do so for themselves, that is when they have a self care deficit. Stroke patients commonly have self care deficits in terms of maintenance of universal self care requirements (Orem 1991), that is, in terms of lunch the patients are unlikely to be able to maintain sufficient intake of water and food unless aided by the nurse. The inability to feed themselves is due to impaired motor function of the upper limb and this may or may not be complicated by a swallowing disorder. The nurse, therefore, has to select the most appropriate method of nursing

intervention, this may be "acting or doing for another" or "teaching another" to learn new skills (Orem 1991). This requires a refined level of ability to facilitate the patient to progress from wholly compensatory care to self care. It requires consistency of approach and the patient may require "support physically or psychologically" (Orem 1991) whilst learning new skills. The importance of teaching the patient to acquire the new skills is so that dependency on others is prevented and rehabilitation enhanced. If the issue was simply one of providing sustenance to the person then this could be achieved by requesting the patient's relative to assist at meal times. Orem (1991) suggested that there is no valid basis for nursing service if the abilities are no greater or only equal to those of the individual patient or his or her family.

Many patients find it humiliating having to be fed and embarrassing to have eating problems when in the company of other people. This militates against using meal times as a social interaction between fellow patients and results in meal times being demanding on nurses' time.

In terms of the mechanics of managing meal times the ward manager has therefore to ensure that there are more nurses rather than less nurses available at this time as well as manage the staff such that staff also get the nutrition and rest they need. This will limit the number of nurses available to attend lunchtime seminars.

The culture of lunchtime meetings being appropriate for the development of staff stems from a model with its roots in the medical fraternity and has found some favour with therapists. If however the team as a whole is to develop then some reconsideration of the timing of seminars is necessary. This is especially so given the apparent lack of

culture amongst nurses to engage in updating type professional activity. Concern over nurses lack of updating has been expressed at a national level and attempts to create a culture of updating have been introduced through the creation of a 'live register' of nurses held by the United Kingdom Central Council, periodic re-registration and mandatory recording of post registration education (UKCC 1995).

Respondents were also asked about their professional activity in terms of reading professional journals. Five nurses reported regularly reading professional journals and cited weekly publications as the most frequently read. A further five nurses reported selectively reading articles from weekly nursing journals. No nurses reported reading anything other than weekly publications in particular they did not read any publications aimed at a multi-professional audience or specialising in rehabilitation issues.

Although Orem (1991) appeared to be looking at the process of nursing when she raised the question "what do nurses do when they nurse?" some insightful observations can be made on these structural aspects. Nurses appear to deliver direct care to patients and direct that care towards the maintenance of universal self care requirements.

Care delivery appears to be built on basic R.G.N. training and on experience. Nurses in this unit did not appear to engage in professional activity outside of work though some nurses do engage in independent updating through reading. The reading that these nurses did tended to be general rather than directly related to either rehabilitation or care or people following stroke.

Opportunity to receive updating through in-house seminars tends to be squandered as these seminars are arranged at a

time convenient to all professional groups other than nurses.

OCCUPATIONAL THERAPISTS, and PHYSIOTHERAPISTS

The responses from therapists in the unit was different from nurses. All occupational therapist respondents reported membership of the British Association of Occupational Therapists and the Occupational Therapists Special Interest Group in Neurology (OTSIGN). This is a discipline specific group which acts to promote and support developments and dissemination of innovation in caring for patients with neurological disorder, including stroke. It is noteworthy that 'stroke' is set in the paradigm of neurology rather than in elderly care. This conceptualisation appears to enhance the status of stroke and distinguish it from elderly care, which has low social worth when compared to neurology which enjoys a high social status (Friedson 1975).

The responses of physiotherapists were very similar to occupational therapists. They appeared to value professional activity as evidenced by membership of Association of Chartered Physiotherapists in Neurology (ACPIN) and their independent professional updating through reading. ACPIN, like OTSIGN, is a special interest group for physiotherapists working in neurology, it does however provide for associate status accepting occupational therapists and one occupational therapist had exercised this right. As with OTSIGN stroke rehabilitation is within the remit of ACPIN and again stroke rehabilitation is set within the paradigm of neurology.

OTSIGN is a national body with local groups meeting up to 4 times a year, respondents reported making efforts to attend local meetings which are usually held in an evening. An

annual national meeting is held and although all occupational therapists in this study would have liked to attend a more typical picture of one attending and reporting back was found. As with nurses, therapists were not members of the SRR or BSRG although one occupational therapist and one physiotherapist had attended a SRR meeting.

All therapists attended the in-house lunchtime seminars and reported reading their professional journal (which is sent directly to them with membership of their professional organisation) though two occupational therapists and two physiotherapists reported selective reading only. They also had access to a rehabilitation journal aimed at a multi-professional audience and selectively read appropriate papers from this journal.

Therapists spontaneously referred to the need to update professional knowledge and suggested that developments in health care in general and stroke rehabilitation in particular warranted such activity. They felt they were a group that were few in number and were sensitive to the isolating nature of working in a stroke unit. The physical location of the therapists serving the stroke unit separated them from the therapy service in the hospital and they considered that their degree of specialisation removed them from general work.

DOCTORS

The doctors interviewed as part of this study were at the Senior House Office Grade and as such were on a rotational appointment gaining experience in internal medicine. As yet they had not firmly decided their long term career choice although one expressed an interest in a career in psychiatry and the other in cardiology. The day to day

input by medical staff is therefore provided by doctors are who are "passing through" rather than dedicated to a career in care of the elderly medicine. They were in membership of the British Medical Association and received the British Medical Journal as part of their membership but did not belong to any other professional societies. They did not read any specific rehabilitation journals but attended the in-house series of stroke lecturers.

Structure of the stroke unit

Respondents were asked about the structural arrangements in place on the stroke unit to give some insights into the context in which stroke rehabilitation took place. The stroke unit was now sufficiently established for all patients following diagnosis of stroke requiring admission to hospital to be referred directly to the stroke unit. Patients seen by their own General Practitioner and then referred to hospital were seen on arrival by a Casualty Officer in the Accident and Emergency Department and then examined by the 'on-call' physician. In the event of admission being required the patient was then admitted to the acute stroke unit. (At times this unit was full and patients were admitted to a general medical ward, over 90% of patients with stroke were however admitted directly to the acute stroke unit.)

These arrangements were known to all respondents and were considered to be favourable, for example, one doctor said;

DR1 "It's great being able to admit a stroke directly to [acute stroke unit], you know they will get sorted".

The notion of the stroke patient not having to compete for care with other acutely ill patients, as would be the case when patients were not admitted to a stroke unit, was also

valued. This point has previously been made (Stevens, Ambler & Warren 1984) and whilst no conclusive evidence was put forward it was used as part of the argument to develop specialist stroke services and Wade and Tyler (1989) included this in their recommendations for the establishment of an ideal stroke service. Although the acute stroke unit comprised only half of a general medical ward the managerial arrangements for nursing staff was such that the two 'sides' were run independently of each other.

The nurses also appeared to be comfortable with the arrangements and feel that it gave them recognition for their skills, for example,

NR4 "We admit the majority of stroke patients and have developed a level of expertise such that we know how to handle them, what should be done".

Many of the patients admitted to the acute stroke unit were at the time of their admission critically ill. In this situation the nurses have a clear understanding of their role and know what care to deliver. A comparison to the earlier findings of Kratz (1978) can again be made. In the context of District Nurses Kratz (1978) suggested that when patients were "seriously ill" the nursing care was known and valued. In this situation focused care was delivered to meet a known aim and the care corresponded to the needs of the patients. During the acute phase the contribution of nurses to supporting life is highly valued and this phase of stroke care is consistent with the ethos of hospitals, that is, acute resolving disorders (Wade 1989).

Once admitted to the stroke unit an arrangement of 'blanket referral' to the therapy services resulted in all stroke patients being seen within a few hours of admission. The therapists saw all patients irrespective of the patients

current health status and regarded this as a good use of time, for example,

PT1 "We see them all, conscious or not so that we can check their chests and make sure they are in the right position, that sort of thing ..."

and they were knowledgeable about early intervention being associated with positive patient outcomes.

The occupational therapists tended to be more pragmatic about seeing patients immediately after admission and saw this as a useful opportunity to ensure that they had the patient "on their books". They recognised that some patients would not require their services at this time usually because they were too ill. Early intervention was however a goal of therapy services and the 'blanket referral' arrangements were recognised as facilitating this arrangement.

Early intervention is considered to be the probable cause of better patient outcomes as measured by functional ability and discharge destination following care in a stroke rehabilitation unit. Some of the earliest stroke rehabilitation unit trials, for example, the Edinburgh Stroke Trial (Garraway et al. 1980) found that patients did not receive more therapy, an early hypothesis, but that the therapy was commenced earlier. Stevens and Isaacs (1984) in the Dover stroke trial found that patients managed in a stroke unit had a lower mortality than those cared for in general wards and were more likely to be living independently at home twelve months after their stroke.

The early referral to the therapists in the acute stroke unit did result in early rehabilitation interventions, though some of the early visits were more to do with

assessment than treatment. Patients were taken for rehabilitation treatment once they were "medically stable". It was not clear in this study how this 'label' was attached to patients in the stroke unit. Medical staff tended to think that the patients were given therapy when the therapists considered them ready, for example,

DR2 "Once the physio thinks they are ready she commences the rehab. and then they go on to O.T."

which suggests that the physiotherapist uses some form of criteria to select patients for therapy. Additionally physiotherapy was seen as a forerunner to occupational therapy, by doctors at least. The physiotherapists tended to be more circumspect about their abilities to select patients for rehabilitation and expressed a view that;

PT1 "The nurses check with the medical staff that they are medically stable and then we start them ..."

which did result in patients gaining early rehabilitation interventions.

Frequently patients were transferred from the acute stroke unit to the stroke rehabilitation unit. In keeping with the "rule of thirds" whereby a third get better with little or no rehabilitation and a third die the so called 'middle band' were identified and listed for transfer to the stroke rehabilitation unit. The arrangements for listing patients indicate that doctors and physiotherapists are instrumental in this activity. It appeared to be on open secret that some movement from the acute stroke unit to the stroke rehabilitation unit was necessary to ensure the availability of beds for acute admissions. There appeared to be no contention between doctors and physiotherapists as to whom should be transferred. There was no systematic use

of any measurement tools evident to select patients despite the use of functional measurement scales (Barthel Index - Mahoney & Barthel 1965) in operation. These measurement scales were used for the purpose of monitoring progress rather than predicting it and intuition appeared to be the selection criteria. For example;

Interviewer	"How do you select a patient to be transferred to the stroke rehabilitation unit?"
PT5	"You just know when they are ready"
Interviewer	"How do you know?"
PT5	"You just do"

Nurses and occupational therapists did not appear to play an active part in the selection of patients for transfer but it was the nurses who would arrange the transfer. The notion of the nurse playing a key role in the administration of arrangements in stroke care is in keeping with the role of the nurse as suggested by O'Connor (1993). Developments in nursing have been such that the ward sister position has been replaced by a ward manager position, and frequently a pre-requisite for holding such a post is a nursing qualification, and hence arrangements such as the transfer of patients between wards would be the legitimate business of the ward manager.

Both the acute stroke unit and stroke rehabilitation unit had treatment rooms designated for the provision of physiotherapy and occupational therapy and patients were given their treatment in these rooms. Some respondents associated rehabilitation with treatment and suggested that rehabilitation is what went on in the therapy rooms. Whilst there is no suggestion that the treatments were not rehabilitative they are a part of and not the whole

process. This was recognised by a number of the nurses, for example,

NR2 "... treatment is done in those rooms but then rehabilitation continues after they come out of there .... so most rehabilitation occurs out on the ward".

It was also recognised that a system of communicating the progress of the patient, especially where this had occurred out of sight of the nurses, was needed to ensure continuity of approach. The notion of nurses acting as substitute therapists has been described by Cox (1973) and more recently by Waters (1991) who suggested that the role of the nurse in general rehabilitation settings was one on 'carrying on' those interventions instituted by therapists. A formal system of conveying the necessary interventions such as positioning, and mobilising was in place by the use of a graphic above the patient's bed but this was not maintained reliably. Instead verbal communication was undertaken on an ad hoc basis, for example,

NR4 " ...we find out where they are up to on a daily basis by bumping into the other disciplines".

The location of physiotherapy and occupational therapy treatment rooms on the ward in addition to a doctors office and speech therapy room gave rise to a higher presence of therapy disciplines than would ordinarily be found in a general hospital setting and this facilitated the process of informal communication. An arrangement whereby each of the disciplines reported to the nurse in charge on arrival on the ward had been established, again in keeping with the administrative function of the nurse identified by O'Connor (1993).

In addition to the communication benefits a number of other issues surfaced which gave some insight into the arrangements on the stroke unit. Firstly the location of therapists on the ward gave legitimacy to their presence, secondly it provided opportunity for 'floorwalking' and gave a visibility to the actions of others not normally seen and thirdly provided physical space for each of the professions.

Access may not be legitimately denied to other professions but nurses can make it more or less easy for others to work on the ward. Reed (1993) found that where nurses valued the contribution of physiotherapists then they made them welcome and created an environment where they could assist in the rehabilitation of patients. She also found that where they were not valued, in Reed's study a care of the elderly ward where patients were regarded by nurses as having little or no rehabilitation potential, then nurses found ways to obstruct the interventions of therapists and a such acted as gatekeepers to therapy services.

Great store was placed on 'bumping into' other professionals as they went about their work and therapists in particular gave support for this approach by reference to contemporary management theory which suggests that much can be learnt from the 'shopfloor'. A staunch advocate of this approach is Sir Harvey Jones a reputed management guru, Knighted for his services to industry, who popularised learning from the 'shopfloor' in a television series (The Troubleshooter - BBC-TV). For example, one occupational therapist claimed that much of the success of communication was,

OT1 "...seeing people informally during the course of a day .... an open door is a useful structural thing that keeps things together .... I thought it was

accepted theory to 'walk the floor' to learn what was happening".

The ward is traditionally seen as the domain of the nurses, in the terminology of Forbes and Fitzsimmons (1993) the ward is the "turf" of nurses and others tread warily upon it to avoid conflict. The presence of nurses throughout the ward and at all times of the day gives them supremacy. Additionally the (re)designation of ward sisters to ward managers lends support to wards being the 'nurses patch'. In the case of the stroke unit the therapists not only had legitimacy but had their own "turf" in the form of treatment rooms and the open door policy with informal channels of communication formed a structural arrangement that was greater than the sum of its parts.

A further structural arrangement that was referred to by every respondent irrespective of their profession was the weekly team conference. The processes which occurred in the team conference are discussed more fully in the following section 'Team Conferences' the purpose of referring to it here is to consider the structural arrangements. A regular once weekly timeslot was routine practice and all members of the team were invited to attend and contribute to the meeting. In addition to the professional staff based on the unit social workers were expected to attend and Stroke Family Support Workers were invited. At this meeting all the patients currently in the unit were discussed. About one hour was set aside for this meeting to discuss 25 patients. Unlike conventional case conferences, where an individual patient is discussed in the patient's and or relatives presence, this was deliberately convened to discuss all patients. It was usual practice for only one physiotherapist and one occupational therapist to attend and report on all patients as they treated them all. In the case of nurses one or two primary nurses attended. In the

event of a patient's progress being considered in the absence of that patient's primary nurse because of responsibilities on the ward or because the nurse was off duty then the ward manager deputised for that nurse. The meeting was held in an office off the main corridor in the ward. The ward manager chaired the meeting and acted as secretary entering the conclusion of the discussion in the patient's medical records. In essence the team conference could be conceptualised as a team briefing session, the aim of which was to establish the goals for each of the patients under review. The absence of the doctor at the team conferences challenges the notion that medical staff are inherently part of the team.

Process Components

Staff perceptions of the process of rehabilitation

Respondents were asked to express their understanding of their own role in the process of rehabilitation and their expectation of others in order to gain some insights into the team members meanings of rehabilitation. A number of themes were identified from the data:-

- Unique role
- Core roles
- Team membership
- Communication
- Collaboration

and the issues are discussed below.

Unique roles

Team members were able to articulate the notion of individual professional contribution and that which could be described as core, for example, one physiotherapist suggested that her role was

PT2 "concerned with just the physical management of the patient"

whereas another commented that she looked

PT3 "at things in a holistic way"

but went on to describe her role as primarily concerned with the physical management

PT3 "... we would be looking towards functional .. maximising patient's functional recovery within their period of time here .. looking at regaining sort of motor control...".

The occupational therapists tended to view things more generally

OT4 "providing an overview of the patient in terms of their functional ability, also looking at the psychological aspects .. memory, orientation and cognition. Also social things, we undertake home assessments, to see if people are going to be safe in their own homes".

It is noteworthy that the occupational therapists responses indicated a greater emphasis on assessment than treatment for example,

OT2 "We assess their cognitive abilities, their perception, their physical abilities ... when they go for a home visit .. we have a lot to do with assessments"

Interviewer "Do you feel that you spend more time assessing than doing treatments?"

OT2 "I suppose so but there is always a treatment angle to assessment isn't there?

Another occupational therapist commented on the nature of home assessments,

OT1 "... the home assessment is very important, it takes a lot of our time, we place great emphasis on assessment both when the patient is in hospital and when they are getting ready to go home"

The assessment itself may include a treatment aspect but it appeared to be a secondary consideration. The nurses expressed less focused responses in terms of their contribution to the team effort but a common theme was one of co-ordinator often stated as "bringing things together" and carrying on the interventions of other professions. The doctors saw their role as dealing with medical problems and relied on the nurses to point out what needed doing.

The nurses saw themselves as meeting the patients universal self care requirements where they were unable to do so for themselves and as such placed the patient in the best position for therapists to act upon them, for example,

NR5 "... get them [the patients] sorted, stable from a nursing-wise point of view so that the work of OTs and physios can be done....".

The time nurses spend with the patients also enhance the nurses perception of their unique role, for example,

NR15 "We see the patients at all times of the day and at weekends .. when their visitors are with them..."

which they considered gave them greater insight than any of the other professions into the progress of the patient and the psychosocial adjustment they were making. This gave the nurses a unique knowledge base and placed a dependence of the other professions on the nurse. This unique role was recognised by the other professions who accepted that if they wished to either gain information or impart information that it had to be brokered through the nurse. For example, physiotherapists commented that if they wished to speak with patients' relatives then they would do so through the nurse, for example,

PT1 "The nurses see the patients relatives in the evening, whilst we have open visiting they can't often come in until night, I would get them to ask certain things or get them to tell them certain things you know"

OT4 "If I want to find out what they were like at home I would ask the nurse to ask the relatives."

These findings are congruous with the specialist - generalist debate whereby the nurse would be seen as a generalist and the other professions as specialist.

Another feature of the therapists role appeared to be one of education, in particular they expressed the view that they had to teach nurses things about stroke rehabilitation. There was no expression from any of the

nurses that they had a role to teach therapy staff. The 'one way' teaching was done on an individual basis according to patient need and not on first principles and hence much time could be spent in this way. For example, one physiotherapist commented that nurses had been trained to nurse and that

PT1 " they haven't been trained in rehab. ..."

she went on to describe how she would select a nurse to carry on those interventions that she as a physiotherapist had determined that the individual patient needed. She acknowledged that she had high expectations of the nurses and expected nurses to undertake these rehabilitation activities,

PT1 "... I would take one of the junior nursing staff show them a specific thing that I wanted the patient to practice and hopefully she [the nurse] would carry it on. I would find one who was not looking too busy ... and who appeared quite enthusiastic .. one with a particular interest in a patient ... has some rapport with them ..."

which illustrates a quite sophisticated mechanism of selection on behalf of the physiotherapist. She reported that no nurse had ever refused but did acknowledge that the rehabilitation activity was not always carried on. Selection errors could occur with this approach and one nurse reported how another had felt embarrassed and humiliated by being taught by a physiotherapist,

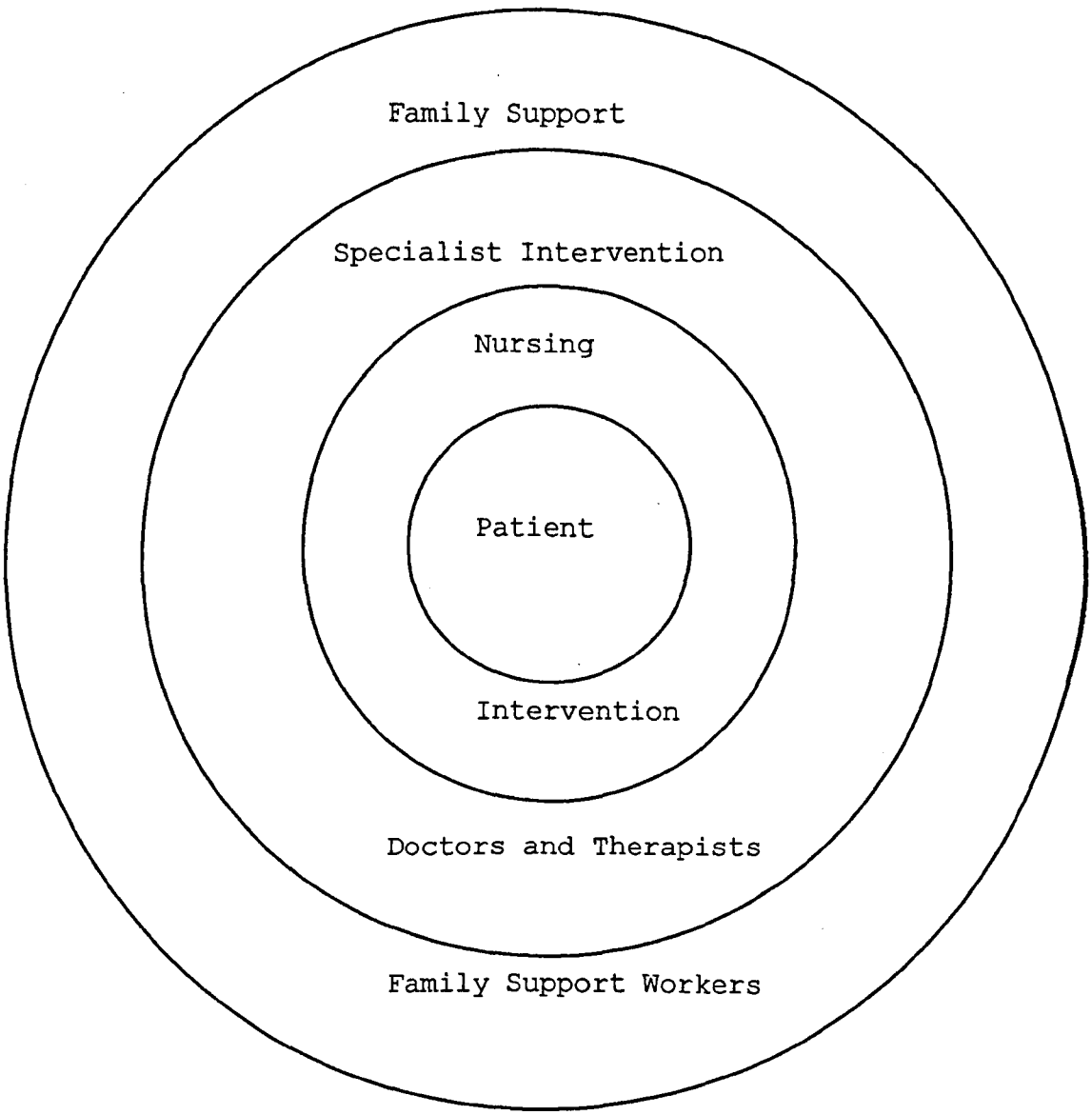
NR7 "... she [the nurse] just sounded off at the physio, said she was being got at .. all the other nurses were surprised at her reaction ... it blew over in a day or two. Good job the physio was cool about it".

The nurses, especially the ward manager, had also acquired the mantle of deputising for the doctor, who was traditionally seen as the team leader, in that doctors relied on nurses to report matters requiring their attention to them and chaired team briefings.

Core roles

The ease at which respondents described their unique contribution to stroke rehabilitation was in stark contrast to the difficulty respondents had in expressing those aspects of their role which could be regarded as core, or central to the rehabilitation processes. Team members each saw themselves as playing a part and saw this as fitting into the whole but they were unable to express any areas of practice which were common to all professions other than patient goal setting. The exception to this was nurses who saw themselves as providing the core of rehabilitation activities through 'carry-on' care, co-ordination and promoting self care. This can be conceptualised as the patient in the centre of a ring of general activity provided by nurses and then a further outer ring of specialist input provided by therapists and doctors. Outside this ring is a further concentric ring of 'players' who meet the meta needs of patients such as family members and family support workers (see following diagram figure 14)

Figure 14 Diagram of generalist/specialist activity



This finding is congruous with those of Waters (1991) who suggested that the nurse provided "maintenance care". However in providing maintenance care the nurse is required

to develop skills usually attributed to therapists, such as mobilising or developing sitting balance in patients. This will be explored further in the following section 'carry on care'.

Whilst the nurse then has a responsibility to provide nursing care, she also has a role in providing rehabilitative interventions and in the absence of specialist nursing rehabilitative interventions acts to implement the interventions commenced by therapists but considered to be necessary to be implemented more frequently than can be achieved by therapists in the current staffing level.

As yet there is no understanding about how much time a patient need spend undertaking exercises or in positioning (Carr 1994 - personal communication) but concern has been expressed about the limited amount of time patients spend in active rehabilitation (e.g. Tinson 1989, Ellul et al 1993 and Waters 1991). The fact that patients spend most of their waking day in the direct care of nurses has led to suggestions that the role of the nurse is to create a stimulating environment in which rehabilitative gains can be made. Studies looking at how stroke patients spend their days on rehabilitation wards have found that much of the waking day is spent in isolated disengagement, only 12.9% of the waking day in activity (Tinson 1989). These findings are incongruous with the findings of studies undertaken in the United States where stroke patients spend greater amounts of time in active rehabilitation (33% of day).

Team membership

All respondents considered that they were members of the rehabilitation team and placed value not only on the team approach but on the individual contribution of team members, for example, one nurse stated;

NR2 "... I feel that everyone is a member of the team ... everyone has an important part to play ... we draw on a lot of expertise here ...."

suggesting that there are parts to be filled which constitute a greater whole. Patients following stroke were regarded as having complex physical disorder complicated by psychosocial problems and that no individual professional group could reasonably meet all the individual patient's needs, for example,

NR19 "People working in isolation just doesn't work"

(Nurse)

These views were not confined to nurses, for example,

OT4 "[The rehabilitation team] is extremely important. If the MDT doesn't communicate .... it's going to interfere with the patient's progress..."

(Occupational Therapist)

PT4 "You must have a team approach with joint goals etc"

(Physiotherapist)

DR1 "Stroke rehabilitation is dependent upon a team approach, everyone must and does play their part".

(Doctor)

To what extent these comments reflect the rhetoric of the unit or the socially desirable response is not known but they do appear to convey a real feeling of the team approach being valued. Mariano (1989) suggests that there have been episodic attempts to introduce interprofessional teams in the delivery of care but this approach has rarely been sustained. A number of factors appear to promote interdisciplinary team work. These include a shared desire to provide optimal patient care allowing the patient to achieve maximum potential in terms of independence and additionally there is some recognition that complex problems require services of more than one occupational group (McEwen 1994). This has led to organisation imperative for team work in a number of settings (Iles and Auluck 1990).

There are, however, a number of factors which militate against interdisciplinary teams. The notion of petty jealousies seems to have been acknowledged but almost dismissed as below the behaviour of professional staff in interdisciplinary teams. It would appear unlikely in practice to be so readily dismissed and examples of petty jealousies amongst team members were evident in this case study. The therapy professions were, for example, envious of the power assumed by nurses when acting as "leader" in the team conferences. For example one physiotherapist commented,

PT2 "I don't think the nurse should automatically lead the case conference, they haven't been trained in rehab. ... we can easily talk to the doctors to give them our point of view"

Interviewer "Do you think the nurses' training has equipped them with management skills ... so that they can run the meeting?"

PT2 "I think it is better when people know what they are doing ... the specifics of the job ... rehab."

whilst an occupational therapists commented that

OT4 "The nurses like to run the team but we all have a part to play and I don't think they always pick up on the most appropriate things"

Interdisciplinary teams through necessity require a "greying" of the boundaries between the roles of each professional group (Mullins, Keller & Chaney 1994) but this can lead to feelings of a loss of autonomy (Forbes & Fitzsimons 1993) and a threat to professional status (Pearson 1983). Strasser, Falconer and Martino-Saltzmann (1994) refer to an increased defensiveness of the professional groups when 'pushed' to work in a team.

It is noteworthy that the factors promoting interdisciplinary teams can be conceptualised as gains for the recipients of care and the organisation, that is third party gains, rather than for the individual profession (first party gains) hence the raison d'être of rehabilitation teams is to improve patient outcomes. Those factors militating against the interdisciplinary team lead to many first party gains but few third party gains.

The professions such as nursing and therapy differ from the medical profession by placing greater emphasis on the

> "acquisition of technical skills rather than theoretical knowledge" (Fried & Leatt 1986)

and these groups are associated with professional aspiration to full professional status. The established

professions such as medicine have the lowest level of aspiration as they already have the recognition. The group exhibiting the highest level of aspiration are the semi-professions such as nursing and therapy as they do not have the recognition but are typically trained in an academic environment and have an established set of working principles.

This perspective could explain why different occupational groups brought together to form a rehabilitation team have difficulty in maintaining such a team. The rehabilitation team is largely comprised of members who each would be classified as 'semi professional' and hence exhibit high levels of aspiration. Given that to achieve full professional status involves development of a unique body of knowledge this militates against the notion of collaboration. In an interdisciplinary team it is the team endeavour which is more important than the individual endeavour but for the achievement of full professional status it is the individual occupational group who must lay claim to the theoretical basis of intervention (Forbes and Fitzsimons 1993).

It has been suggested that whilst team working has seen a growth in research there has been little research dealing specifically with the dynamics of interdisciplinary teams. This will be discussed further in the following section 'collaboration.'

Communication

Respondents referred to the need to maintain good channels of communication to facilitate the process of rehabilitation in the stroke unit. The structural arrangements for communication between team members have previously been described and the processes occurring in the case conferences will be described in the following section (Team conferences).

The nurse acting as broker in the information flow has been raised previously but this system was not appreciated by all team members. The doctors, who usually did not attend the case conference, were critical of the method being the most reliable upon which to base clinical decisions and expressed a view that benefits might be gained by having the physiotherapist join the ward round, for example,

DR1 "I think communication between team members is pretty poor ... I think this could be overcome if, on the ward round, we had a physio rather than getting it through the mouth of [the nurse] ... it is just a backward way of doing things ... its really hard to get the information".

The doctors in the main did not attend the case conference and did not provide any substantive reason why they did not attend. Had they attended they could probably have gained the information they required. It is noteworthy that they required information from the physiotherapist, especially in the acute stroke unit, and suggests that the information would have been helpful for clinical decision making. It is not clear why the doctor did not approach the physiotherapist directly given that they maintained an open door policy and it is noteworthy that the doctors wanted the physiotherapist to join the ward round, that is, the

event where there is medical domination. Additionally it was the doctor and the physiotherapist who undertook to make the clinical decision to transfer the patient from the acute stroke unit to the stroke rehabilitation unit.

A number of insights can be gained from these findings. Firstly if the physiotherapist was not on the ward round yet involved in the decision to transfer the patient it suggests that some form of communication must have passed directly between the doctor and the physiotherapist. This form of communication was undertaken covertly as the nurses (broker) were unaware of the listing for transfer until advised after the decision had been made. This suggests that some form of coalition or subgroup had formed within the team. This event has previously been described by Mullins et al.(1994) who contends that teams are mythical and in reality only dysfunctional representations of a team are found.

In addition to the notion of a coalition forming within the team the findings suggest that the harmony of the team is of greater importance than individual patient need. This finding is congruous with a study concerning District Nurses (Griffiths and Luker 1994) where it was suggested that collaboration between professionals was undertaken in their own interest rather than those of the patient. The notion of collaboration will be considered in greater detail in the following section.

Collaboration

Respondents referred to the need to collaborate with other team members and this was expressed as meaning 'co-operating with others'. This co-operation could be passive, such as,

NR15 "Making sure the patients were ready for their therapy".

In this situation there was expectation on behalf of the nurse that one of the therapy professions would be calling on the patient to undertake a treatment or assessment and the actions appeared to be related but independent of each other. The behaviour of the nurse therefore becomes routinised and whilst providing a functional service it does not show evidence of collaboration beyond a level of co-operation. Evidence of collaboration beyond co-operation was however expressed, for example,

PT4 "Working together to make sure we are all aiming for the same goals ...".

which indicates a more active form of collaboration. This is in keeping with the notion of an interdisciplinary team. An interdisciplinary approach requires at least that the members of the team collaborate with other colleagues and other professional groups. Mariano (1989) suggests that the concept is poorly understood and that education whilst becoming broader and more sophisticated has failed to adequately address the necessary interdisciplinary focus. Forbes and Fitzsimons (1993) similarly refer to education as being the key for interdisciplinary collaboration. Their exploration of the term 'collaborate' brings together two connotations, firstly working together "especially in a joint intellectual effort" and secondly "co-operating reasonably, as with an enemy occupying one's own country".

The practice of rehabilitation is unlikely to be perceived by practitioners as 'joint intellectual effort' especially when according to Fried and Leatt (1986) the semi-professions aspire to full professional status as a consequence of technical skills rather than theoretical

knowledge. There is little doubt that some aspects of intervention are underpinned with theoretical knowledge and the contemporary approach to patient care is a problem solving approach. The identification of patient problems might give some direction as to who assumes responsibility for which aspects of care. It does however give less direction as to whom should be head of the health care team and increasingly as patient empowerment and service user involvement grow a challenge to the physician as head is made. It is evident that who ever takes charge of the team is likely to require leadership and management skills in addition to clinical skills. Nurse education has traditionally included preparing nurses with leadership and management skills but nurses may lack credibility amongst other health care professionals if they do not have the specific clinical skills required by the client group in their care.

The second interpretation of the word is of interest in that it raises issues of territory and domains of practice which is of particular interest in the context of a rehabilitation team where individual disciplines lay claim to specific areas of practice (territory) yet are requested to collaborate (work co-operatively) with other disciplines who may or may not have the skills or knowledge.

Strasser et al. (1994) suggested that team care is the cornerstone of modern rehabilitation philosophy and practice and this is a recurrent theme in the literature. Waters and Luker (1996) suggest that multidisciplinary team work is central to the policy and practice of geriatric care and go further in suggesting that it is this notion of multidisciplinary teamwork which distinguishes geriatric care from other medical specialities. The inclusion of the term multidisciplinary clearly identifies that the patient interventions are from more than one health care

occupational group. This is recognised as the approach in complex problems where the services of more than one occupational group is necessary to improve patient outcome and there is recognition that each of the occupational groups have their own unique contribution to make in addition to the contribution to the team.

The recognition that stroke patients require the services of more than one professional group, that is the multidisciplinary team, was made by several respondents, for example,

OT1 "We need to collaborate, set common goals for patients, but it is difficult to find the time. There are so many disciplines to involve but we need all those disciplines ... no discipline can do it [rehabilitation of stroke patient] one its own".

This view serves to illustrate the limitations of multidisciplinary care and highlights the interpretation of 'multidisciplinary' being a structural aspect rather than concerned with process. Where the process of care is discussed this is frequently referred to as interdisciplinary, though it should be noted that inconsistencies are evident in the literature.

Mariano (1989) suggests that the number of situations in which no single discipline can effectively respond to the needs of the patient is increasing as is the complexity of health care services (McEwen 1994). Recognising that the needs of the patient are best met by the services of more than one professional group goes some way to encourage the development of a multidisciplinary team and it follows that there must be some understanding of how that team will work together.

Pearson (1983) noted that multidisciplinary assessments, in which separate consultations were arranged did not lead to improved communication between the various specialists and that ultimately the various reports of specialists were generally considered by the physician who took responsibility for patient management. Examples of this practice were found in this study the exception being that the nurse, the ward manager, acted as an agent for the doctor by collecting all the information and entering a summary in the patients medical records at the team conference. For example,

NR1 "We get everyone together at the case conference and find out what information they have to give ... I then enter it in the patient's notes and the plan is put into action".

The entry in the patient's medical records is done so under the guise of a team decision and most respondents expressed the view that decisions about patients were team decisions. The extent to which this team decision influenced the interventions and plans of each of the individual professions will be discussed in the section concerning 'goal setting' and the 'team observation protocol'.

It appeared however self evident that differences in opinion were likely to occur and some insights into how conflicts were resolved were sought. A number of issues emerged from this line of enquiry. Firstly concern was expressed by the therapy professions that nurses were acting as agents of the doctors. They were seen as "pushing for the patients discharge" and appeared more eager to encourage throughput of patients than quality of recovery. This is a contentious issue as it is clearly necessary to progress patients through the unit to prevent a complete log jam of patients waiting for a bed in the stroke

rehabilitation unit. The better the quality of recovery however then the more likely the patient would be able to return to independent living in the community, and viewed in the long term making less demand on community resources. These issues are over and above those of the patient's quality of life. It is likely that given the brokerage of nurses that medical staff were exerting some form of pressure on the nurses to maintain throughput. It is equally likely that nurses would wish to maintain the throughput to demonstrate their abilities as managers of patient care. The nurses saw themselves as smoothing the bumps in care delivery, for example,

NR1 "We try to keep things running smoothly, gently pushing so that things happen ... we only have limited resources you know"

NR2 "Our job is to make sure things happen, checking up on this following up on that. I see us as being in the engine room being in on everything that happens ... and making it happen"

Secondly it was of concern, again mainly to the therapy staff, that the doctors did not attend the case conference. It was not entirely clear as to why therapists wished for the doctors to be present. It is possible that they felt usurped by the nurses and that they could have 'sided' with the doctor in the form of coalition previously described. This view was not however expressed and to what extent it was surpressed because the researcher was known to be a nurse is not known but should be considered as a limitation of the study. Instead therapists simply expressed a view that,

OT2 "...they [Doctors] should be there".

It is likely that had the doctors attended the case conference they would have been pushing for patients discharge as the third area of concern was the doctors overturning the decision of the team in regard to the patient's discharge date. This was of concern to all team members, for example,

NR4 "Sometimes we might as well not make the decision, if the doctors need the beds then they will discharge them whatever we say"

(nurse)

PT2 "... because of the demand for beds medical staff want to get the patients out quickly ... we want to keep them maybe a bit longer 'cos we can see they've got potential, but it's difficult to get other team members to understand. The doctors will overthrow decisions if they want to"

(physiotherspist)

OT4 ".. there are times when a certain recommendation is not followed through ..."

(occupational therapist)

A final issue emerging in this area of clinical decision making was the perceived influence of individual professions. Each of the professions rated themselves as the most influential. The medical staff saw themselves as the most influential as, for example,

DR1 "Ultimately it is the doctors decision (knowing smile), they [the patients] are admitted under our care".

The nursing staff considered themselves most influential based on their 24 hour, seven day a week presence, for example,

NR16 "We are the most influential (laughs), we are with them [the patients] all the time, we know the patients, how we can influence what goes on".

The physiotherapists regarded themselves as the most influential as they saw rehabilitation and physiotherapy as synonymous. They considered their ability to undertake interventions which would improve the patients functional ability as giving them supremacy in influence about duration of treatment, length of stay and projected physical ability potential, for example,

PT1 "I think they [the doctors] listen to us (laughs), we are able to report who is showing progress, if we think someone has plateau'd or lacking motivation ... we can get them to keep the patient a bit longer, that sort of thing".

This extract illustrates that the physiotherapist knows she can influence but not necessarily make the decision and that the ultimate decision is that of the doctors. Given that the contact between doctors and physiotherapists is formalised neither by the team conference nor the ward round it lends weight to the notion of a coalition between the doctor and physiotherapist.

The occupational therapists considered themselves as the most influential based on their role to undertake home assessments, for example,

OT1 "I would say a big influence (laughs)... in that once the home visit is completed by us we can go back and

state when the patient can go home ... I think therefore we do have a big influence. I think we are best able because we know the home situation".

The comments entered in parentheses indicate the non-verbal behaviour of the respondent which usually followed the respondents comments about their perceived influence on decisions and were notable in this particular part of the interview. The non verbal behaviour of the medical staff was different from that of the all other professions. The doctors non verbal behaviour gave the impression of confidence that they were ultimately in charge but knew that others felt they were influential. They appeared to be willing to 'play this game'. The other professions (nursing, physiotherapy and occupational therapy) also gave the impression of playing the same game but appeared less confident in expressing their influence. The laugh was suggestive of the rhetoric of equality of team members but that in reality this was not the case.

Previous studies have found that an understanding of each of the team members abilities by other team members have been poor and very often stereotypical and negative (Brunning and Huffington 1985). Some of this has been explained by the contribution that each professional group perceive themselves as making as compared to the perceptions held by other professional groups. In short respondents to a survey (Cartlidge, Bond & Gregson 1985) saw themselves in a more positive light than other members of the same profession and in turn saw the contribution of their professional group in a more positive light than the contribution of other professional groups. An understanding of each others area of work was found wanting and a lack of mutual understanding led to a low inclination to liaise.

The issue of each professional group perceiving itself more positively than it perceives any other professional group and of lacking understanding of others contributions to care has also been noted by Brunning & Huffington (1985) who also found that role stereotypes were often quite distorted. The Royal Commission on the NHS (1979) acknowledged that multidisciplinary team working may pose a number of problems but that these were "more attributable to interprofessional jealousies than to anything more solid". The interprofessional jealousies appeared to arise from such issues as the challenge to the traditional supremacy of doctors, the increasing assertiveness of nurses, and the creation of new professional roles. The consequence of these factors can give rise to role overlap, rivalry and poor communication. The negative perception that one group holds towards another is exacerbated when they are in a competition over a field of specialism, a treatment or a particular client group. Rehabilitation, especially when this is focused on one diagnostic related group e.g. stroke patients would appear to exactly right for a climate of conflict.

The importance of the context of health care cannot be underestimated and the current situation of evidenced based practice, value for money, down sizing of health care provision, job insecurity, decreased duration of in-patient stay are all likely to militate against interprofessional collaboration just at a time when such collaboration may have acted to demonstrate the need to maintain or strengthen the need for a multidisciplinary team.

Outcome Components

Introduction

This section relates to the outcome components of the evaluative framework and the method of data collection used for this section was a semi structured interview with service users.

This chapter presents the patients' perspective of the team members contribution to their rehabilitation. In particular how patients perceive the contribution of the nurse and attempts to contrast these findings with the 'outcome' questions posed by Orem (1991), that is "what is the product made by nurses?" and "what results are sought by nurses?"

This case study was not concerned with the outcomes of patients in terms of their functional abilities or place of discharge but in their experiences of the process of rehabilitation.

Profile of Respondents

A sample of respondents who fulfilled the following inclusion criteria were invited to participate in the study by agreeing to be interviewed.

Inclusion criteria

- diagnosis of stroke
- recipient of in patient care in stroke unit
- discharged to own home
- able to speak and understand English
- have no mental or cognitive dysfunction
- be willing to participate and able to give informed consent.

Response Rate

A 3 month data collection period was identified and all patients fulfilling the above criteria were approached by letter 3 weeks after discharge home. It was decided not to invite patients to participate whilst in hospital as it was considered that this might be interpreted as moral pressure to participate and it could not be predicted as to how patients were going to cope in the immediate post discharge period. The maintenance of a stroke register within the stroke unit made it possible to select patients who met the above criteria. Details of functional ability as measured by the Barthel Index (Mahoney and Barthel 1965) and mental state as measured by the mini-mental test score (Hodkinson 1972) are routinely assessed and recorded as is discharge destination.

In all 24 patients were invited to be interviewed as part of the study and letters of acceptance to participate were received from two thirds of the patients. A mutually convenient appointment was arranged. Refusal to participate was received from 2 patients and 2 patients did not feel they were up to receiving people in the house. Five patients did not respond. Follow up letters were not sent

as the researcher did not want to exert any pressure on patients.

Profile of Respondents

The profile of respondents is presented in appendix 11. The summary statistics are presented in table 13.

Table 13 Summary Statistics of Service User Respondents

		Male	Female	Total
Number		8	7	15
Age	Median	76 years	80 years	78 years
	Range	47-84 years	68-83 years	47-84 years
Length of Stay - Acute Stroke Unit	Median Range	5 days 1-8 days	9 days 2-16 days	7 days 1-16 days
Length of Stay Stroke Rehabilitation Unit	Median Range	10 days 0-23 days	11 days 1-126 days	10 days 0-126 days

The respondents were evenly distributed between the sexes and there was no significant difference between the age range of the sexes. Only one patient was below the age of 65 years (a male aged 47 years). All patients had been admitted directly to the acute stroke unit and 12 had been subsequently transferred to the stroke rehabilitation unit.

In the cases of the 3 patients who were not transferred to the stroke rehabilitation unit their total length of stay was about one week (range 6 - 8 days). The median length of stay in the acute stroke unit was one week with a range of 1 day to 16 days. The length of stay in the stroke rehabilitation unit, for those transferred to the unit, was more variable ranging from 1 day to 126 days (median 11 days).

Findings

Written agreement was obtained from all patients and interviews were audio tape recorded with the patients and interviews lasted between 32 minutes to one hour 7 minutes (median 43 minutes). Following recording the tapes were transcribed verbatim, notes appended and subjected to latent content analysis (Field and Morse 1985). A number of themes were identified from the data as follows:

- Impact of Stroke
- Meaning of Rehabilitation
- Key contributors
- Goal Setting
- Discharge home.

Impact of Stroke

For patients, the stroke without exception was an unexpected event which had a significant impact on the persons life. Respondents did not report any ill health in the immediate pre-stroke period. All respondents recall vividly the onset of stroke although this may have been followed by a period of bewilderment. The emotions experienced by respondents at this time included a sense of helplessness, fear and denial. The respondents can recall the activity they were engaged in at the time of the onset of stroke in great detail, for example,

P12 "I was standing in the kitchen, making sandwiches and suddenly my leg felt as though it was stuck to the floor and I realised I couldn't move it, and gradually it crept up the left hand side and I shouted to my wife 'something's happening' and that was it".

This experience gave the respondent an overwhelming sense of fear. A number of respondents (n=5) recalled the stroke occurring during the night and being unable to get of bed to reach the toilet, for example,

P1 "I was lying on the bed really wanting to get up to go to the toilet and I was struggling to get out of bed, I didn't seem to have the strength in my leg, the left side and was reaching for something to pull on and couldn't...."

another explained the events as

P11 "... I thought I was in the duvet, I thought it was all ravelled ... I was saying 'Oh God, what's happened to me', the phone rang ... I couldn't speak, I knew what I wanted to say but it wouldn't come out, then next [son] kicked the front door down to get to me, he knew something was wrong ... but it took him an hour or more to get from his house in the middle of the night. He got the ambulance .... thank God."

The initial reactions to the events that the respondents were experiencing were sometimes regarded as more minor in nature than a stroke. One considered it to be a faint whereas another tried to explain the symptoms as cramp (P5). The respondents who engaged in this behaviour considered with the benefit of hindsight that they were denying it was a stroke, for example,

P5 "I suppose you realise what it is [the stroke] but I didn't want to admit it".

The difficulty of interpreting what was happening or unwillingness of patients to accept what was happening was

stated by a number of respondents and most involved family or friends prior to seeking medical help from a doctor or summoning an ambulance. A consequence of this course of action is the delay in receiving appropriate hospital level care and this may prove disastrous as the current research on secondary prevention, that aimed at limiting the effect of the stroke on the neural tissue, is suggestive of only a narrow window of opportunity. Any delay at the point of referral could exclude the patient from potentially beneficial therapeutic intervention.

Another course of action is to ignore the symptoms and whilst little evidence of this was found in this study there was one case of a patient waiting to see the symptoms would subside,

P7 "I asked my wife to get me back to bed, not to trouble the doctor, I might be all right in the morning...".

The finding that this approach was not reported frequently might suggest the seriousness of the interpretation of symptoms, even from lay people, or that those who did wait either recovered or did not make it to hospital.

Self medication is suggested (Armstrong 1983) as an alternative course of action and some evidence of this found in this study, for example, the person who ascribed his symptoms as cramp requested that his family give him some

P5 " ... whiskey in tea and I'll get the circulation going"

whereas another who thought the symptoms indicative of migraine and

P7 " ... thought a couple of 'panadol' might shift it".

All respondents in this study had the formal health care services initiated on their behalf by a family member or friend and this was either the patients General Practitioner or the accident and emergency department via the ambulance service.

The care in accident and emergency department in some instances brought more anxiety than relief. Comments made about the care in this department indicated that patients understood the demands placed on staff but they spontaneously referred to long waiting times, especially waiting for a bed to be located for them. Some patients spontaneously reported waiting for several hours on a trolley being pushed from one room to another which they found uncomfortable and distressing for themselves and their spouses, many of whom had to wait until the early hours of the morning before they knew their relative had been admitted to a ward. For example,

P4 "We arrived somewhere around five o'clock in the afternoon and it was three o'clock next morning before I was eventually being examined by an expert, and that's ten hours without any treatment.... I was rather put out by the reception at the hospital"

Information giving in Accident and Emergency Department did not appear to meet the needs of all respondents, but respondents put this down to being bewildered at the time. To what extent this is politeness is not known nor is the extent of information giving known. This study did not explore primary carers perceptions of information giving but it suggests an area for further research.

As previously indicated all patients were admitted directly to the acute stroke unit, though from some of the patients' perspectives this took time to organise. The exposure to other patients, though it is not clear at this time if the patients knew that their fellow patients had also had a stroke, appeared to have an effect of shock. Where the respondents own current health status was considered to be better than those with whom they were warded they experienced mixed emotions, on one hand as not being as badly off as other patients and on the other, fearful that they would end up like the other patients. This had a striking effect on the younger patient in the sample, his response was to be motivated to 'get better';

P2 "... I was looking at these people in beds opposite me, you know, and I thought surely I'm not going to end up like that ... people to help you all the time ...."

and later in the interview,

P2 " ... I thought well if I don't do something about it, you know, because some of them [other patients] just, no disrespect, some of them were just happy to sit there and be fed ... ".

Whilst these views were not restricted just to the younger aged patient they were particularly noteworthy with this respondent and raise questions about the placement of young stroke patients on stroke units where the median age was 78 years.

The notion of increasing age and its impact on recovery was sensed by some patients to be detrimental, that is, they perceived that the older they were the less their chances of recovery, for example,

P1 "... when I saw the others who had been in 7 or 8 weeks, and they're much younger than I am, I'm 84 ... all right I haven't got a chance".

This did not however militate against a sense of making a recovery and all respondents expressed a feeling that they would actually get better.

To some extent this finding is predictable given that the service user respondents were drawn from those who had successfully returned to their pre-stroke domicile. Summary findings in previous studies have shown that age and initial severity are most closely associated with eventual outcome following stroke. That is, the greater the person's age and the greater the initial severity then the worse the prognosis. As yet, however, no model exists to predict outcome in individual patients. Respondents in this study were drawn from a wide age range (47 years to 84 years). Data concerning initial stroke severity is routinely collected on each patient for the European Stroke DataBase on the unit. This data confirms that the respondents included in this study were graded 'alert' on the level of consciousness scale on admission to hospital with the exception of one respondent who was graded as 'drowsy'. This lends some support to the notion of initial severity influencing eventual outcome.

Meaning of Rehabilitation

Patients, as previously reported, expressed a feeling that they would get better but for some the protracted nature of recovery was unexpected and for others there was limited understanding of the process of rehabilitation. The idiosyncratic nature of recovery from stroke has made it difficult to discern what gains in function are

attributable to spontaneous recovery and what is attributable to the rehabilitation interventions of the various health care professionals (Tallis 1989).

It is reasonable to assume that those who have had no previous exposure to rehabilitation to have a limited or lack of understanding of the processes involved. In this sample three respondents received all their rehabilitation on the acute stroke unit. The extent of the rehabilitation interventions was in the patients perspective minimal and seen more as assessment of functional ability by physiotherapists rather than treatment, for example,

P7 "I didn't have any weaknesses at all, just the double vision, they saw me walk up and down that sort of thing, just tested me like",

P8 "... the two physio ladies said that you've no need to 'cos they had me out of bed two or three times walking around the ward, so I'd no need to have [physiotherapy]",

P12 "... they [the physiotherapists] had me walking up an down, raising my arms and legs".

All these patients appeared to have made a good functional recovery and were independent in activities of daily living within one week. The experience had however had an impact on their confidence and they seemed less sure of the future, for example,

P7 "It seems as though I can't relax, I'm all tensed up, not myself",

P8 "I'm hoping it will all come back, I'm still a bit worried"

P12 "I have visions of being paralysed because my brother's paralysed through a stroke some years ago".

Whilst it is perhaps a natural consequence of having a stroke to feel insecure the process of rehabilitation for these patients appears to have been preoccupied with functional ability rather than to adaptation to the situation. It is also noteworthy that the physiotherapy profession is singled out as the professional group by patients who determine what interventions are required.

All the other twelve patients in the sample were transferred from the acute stroke unit to the stroke rehabilitation unit. All reported being advised that they were to be transferred but the meaning of rehabilitation was not shared between patients and staff. For example,

P4 "I don't know why I was moved",

P5 ".. they said you're going to ward [stroke rehabilitation unit] and that I'd be better there",

P6 "I'd no idea, no I had no idea" [why she was being transferred to the stroke rehabilitation unit].

From the patients' perspective those who had some notion of rehabilitation interventions were aware of it commencing in the acute stroke unit and it was not clear to them why they could not continue with it on that unit rather than having to relocate onto another ward. It is not clear how patients to be transferred were informed nor what information was given to them. It is, however, clear from data collected from staff that nurses assumed responsibility for the managerial and organisational arrangements concerning transfer and that the physiotherapist in coalition with the

doctor made the decision. It is possible that either of these parties assumed that the other would discuss it with the patient and that this was not done; the patient falling into a 'void' created in the caring team (Lubbock 1983). It is also possible that both parties discussed it with the patient and either the patient does not recall it or that the information was too complicated or contradictory for them to recall it.

It is also possible that staff regarded the transfer as something that the patient would adversely react to and as a consequence put off dealing with it. Support for suggesting that people put off dealing with things they regard as unpleasant has been found in nursing in, for example giving injections (Field 1981).

The notion of transferring a patient from an acute unit to another ward is reminiscent of transferring patients from acute care to 'long term care' and as such something that may be feared by patients. A similar situation occurs between transfer from an intensive care unit to a general ward. Whilst no suggestion is made that a stroke rehabilitation unit is anything like long term institutional care it falls outside of the 'acute care mind set' and might give rise to clues about the staff attitude through non verbal behaviour. A difficulty arises in that patients are comfortable where they are largely because it is a known quantity and they have in some sense become accustomed to the staff and activities of that ward. They face the unknown and in some instances the person advising them of the transfer has no experience of the stroke rehabilitation unit and is thus not best placed to tell the patient what it is like or what to expect. The informer has therefore to choose what information to give the patient. This may be to give no information or to overcompensate and make over ambitious claims about the merits of transfer.

This is illustrated in the case of the patient with the longest duration of in patient stay (patient 14, 136 days)

P14 "They said I'd come on more if I went to this other ward ..".

This patient did in fact achieve a good outcome in terms of functional ability and was able to return to her own home but the duration of in-patient stay was long. The absence of recognised prognostic indicators and the idiosyncratic nature of recovery from stroke does however make it difficult to claim that the stroke rehabilitation unit will confer advantage to an individual patient but in general patients managed on a stroke rehabilitation unit do better in terms of outcome.

The establishment of an acute stroke unit is in some ways comparable to the establishment of a coronary care unit, that is, a specialist unit. The patients all have the same broad diagnosis and the staff develop expertise in caring for this particular client group. They may also have had additional training. The specialist unit is proactive in managing the patients and this results in an increase in 'technocare'; monitoring, observation, interventions. The patients perceive a sense of competence and trust "they are special as they are in a special unit" after a period of time they are transferred to a more general environment, the staffing density does not appear as great and the perceived 'technocare' dissipates. The patients may sense a feeling of rejection and isolation.

It was assumed that patients transferred from the acute stroke unit to the stroke rehabilitation unit may experience some of these feelings. Whilst the presence of the rehabilitation team based on the ward gives some feeling of a high staffing density the therapists are

largely operating out of their therapy areas and the complement of nurses was comparable to a general ward rather than specialist unit. Additionally in the case of the stroke rehabilitation unit the espoused philosophy was towards promoting self care and this could further the patients perception of abandonment by the staff. In the event the patients did not appear to experience any of these feelings and the transfer was interpreted by patients in two principal ways, firstly that their condition was serious and secondly that it was the next step to home.

In terms of the seriousness of the condition the transfer in some ways marked a realisation in the patients that they were not likely to achieve independence without further assistance. The patients early expectation was that they would get better and the transfer symbolised the recovery to be a long job, for example,

P1 "... I realised that it was serious and that I would have to do as I was told",

P13 "... they said it was a rehabilitation ward, I thought this ... is not too good, I was hoping ..... you know ... it just made it seem a bit more serious".

The notion of regarding the transfer as the next step to home was imbued in the patient by the nurse who was organising the transfer, but the patients did not really understand why they needed to be transferred, for example,

P6 "I had no idea why I was being transferred, no idea .... they must have thought I was improving, because a nurse said to me one day 'well I'm moving you and that's the next step to home' that was all".

Following transfer the meaning of rehabilitation from the patients perspective was a series of events to be followed (a routine) designed to give confidence. The events were regarded by some respondents as military in operation in that they were executed at set times of the day and week, for example,

P1 "Just like being back in the army ... 10.15 physio, do this, walk here, not like that, listen to me, 12.00 lunch"

P14 "The routine, just like the army, drill practice in a fashion"

which introduces a notion of the process of rehabilitation being military in orientation. The process of rehabilitation was seen as a routine and patients seemed to accept this without question and regarded it as in their interest rather than being an artefact of staff working patterns. The routine was accepted as it improved the patients' confidence in their own abilities.

The patients growing confidence appeared to be how they marked their progress and this did not appear to be made tangible in any other way. The patients in this sample did not report any progress reports being given to them by any of the staff. Words of encouragement from staff were often expressed but they did not feel that they got feedback from staff about rehabilitation gains. For example,

Interviewer "Did you feel you were given an idea of how you were doing?"

P4 "No, not really"

Interviewer "Did the staff not give you any feedback or encouragement?"

P4 "No"

Interviewer "When you were in hospital did anyone ever discuss with you how you were getting on?"

P4 "It's just carry on, carry on, or they might say keep going or keep it up, you'll be home shortly. I thought I was very brave"

A source of frustration during the phase when the patients were discouraged from walking by the physiotherapists to ensure better long term recovery was the inability to get to the toilet independently and a desire to use the lavatory rather than a commode. Whilst it was common practice to take the patients to the lavatory it depended on attracting a nurse to get them there by wheelchair and in some instances the desire to use the toilet had passed before they got there resulting in constipation. One patient negotiated the use of a wheelchair with a nurse so that he could visit the toilet on demand.

P2 "... when I got the wheelchair I was getting around you know, handy, you know, I could get to the toilet ... on me own, I could sort myself out".

Rehabilitation was conceptualised in gross physical ability terms by the patients and other aspects of recovery such as fine motor movement and touch and sensation were less valued. To what extent this reflects a lack of awareness of loss in this area is not understood but it suggests that staff perhaps need to explain the purpose of assessments more clearly. For example a respondent asked to identify items by touch alone contained in a bag thought the task unnecessary unless he needed that level of manual dexterity

for a specific purpose, alarmingly he thought that the test should have been used for those intending to fire a gun!;

P2 ".. the other part where you stick your hand in a bag and you've got to feel what's inside and there's a spoon and a comb and something else .... [anger in voice] it was ridiculous, it's OK if you need to fire a gun".

The assessment of cognitive function was regarded as a waste of time and offensive by 2 patients, for example,

P2 "The stupid questions they ask you, they must think you are thick ... then the puzzles ... its ridiculous a child of two could have done it"

P7 "I knew who I was, I had already given them loads of information, then they start asking me daft questions, who are you? where are you? those kind of things, you'd think they'd have something better to do"

Little benefit of psychosocial rehabilitation was articulated and whilst two respondents did suggest that it could be boring in hospital they did not go on to suggest group activities or a social programme.

In summary the meaning of rehabilitation to patients was a process designed to improve their confidence in general terms rather than in specific terms. It was seen as something that was necessary for a serious disorder and it was targeted towards getting you walking as a pre condition to returning home. Aspects of rehabilitation concerned with fine motor movement and psychosocial aspects were less valued by the respondents in this sample. This could be a

characteristic of the sample given the inclusion criteria would have excluded many patients with cognitive problems.

Key contributors

Respondents were asked to recall their experience in hospital and reflect on who they considered had made a contribution to their recovery through rehabilitation. All respondents recalled their experience favourably and on initial questioning tended to be global in their response, for example,

P15 "They all did really, everyone."

P1 "well the staff really, the hospital staff",

but when questioned more closely differences emerged, for example, one respondent considered that it was the doctors who were most influential in her recovery,

P11 "Well, the doctors mostly, isn't it?"

and this in some ways appeared to be related to the doctors role in examining the patient, arranging to admit the patient and in some instances prescribing medication, for example,

P11 "They [doctors] supervised the tablets and all that..."

P2 "this medication you see, you know, the one the doctors wanted me to try".

At the time of this data collection a clinical trial of therapeutic agents to limit neurological damage post stroke was being undertaken which required the recruitment of

patients. Given that doctors are required to explain the study and are responsible for the recruitment of patients through informed consent the interaction between doctors and patients may have been atypical of the normal level of intervention.

Others considered the greatest contributor to be the physiotherapist as it was this profession who were viewed by the patients as undertaking an assessment of the patients needs and intervening to assist them to walk, for example,

P5 "Well it was mainly the physio, you know by the different things she was saying, that 'oh that's good' and 'it's only been a slight stroke' it was the physio mainly."

The interventions of physiotherapists were seen as 'treatment episodes' as were sessions with the occupational therapist as suggested earlier in terms of a routine. The notion of rehearsal and reinforcement articulated in the staff interview data was not expressed by the respondents.

The contribution of the occupational therapists as expressed by the respondents centred on assessment of dressing ability, assessment of cognitive function and the assessment of the patient in their own home near the time of discharge. Patients did not refer to the occupational therapist as doing rehabilitation with them other than with some dressing practice but the were seen more as the 'guardian of discharge'. It was the occupational therapists who were seen as the professionals who could authorise discharge home, for example,

P9 "The physios might get you going but its the OTs you've got to impress to get yourself home (patient winks conspiratorially).

Nurses were highly valued and their contribution was seen as helping the patient to recover in a different dimension to that of the physiotherapist and occupational therapist, for example,

P1 "Well the nursing staff were very good ... the physios made you realise you could walk again, or you wouldn't be able to walk again, but the nursing staff were very good, like taking you to the toilet, and getting you a drink and getting anything you asked of them".

The nurses' contribution was not limited to doing physical things for the patient and the ability of the nurse to motivate the patient through encouragement and counselling was also expressed, for example,

P10 "my faith was in [names nurse] he always made you get on and found ways to encourage you, he always lifted my spirits".

It is noteworthy that whilst it was not the intention of this study to identify individuals who had made a contribution to the patients rehabilitation in the perception of the patient certain individuals were identified in the respondents statements. One particular nurse was identified spontaneously by several respondents (n=5) as being particularly encouraging and helpful.

Nurses were also valued for facilitating the patient to gain independence by the provision of wheel chairs allowing patients to self propel themselves around the ward. This

was expressed by patients as allowing them to take 'risks' which allowed them to test their confidence, for example,

P2 "Being allowed to sort of do things for myself rather than them, the nurses would say if you can manage go ahead, but if you get stuck give us a shout, there were things that were giving me the confidence ..."

P15 "I took a bit of time like, but I could do it for myself, they [nurses] used to let me and I'd try, they'd allow me out of bed to the toilet, it makes you feel like you're getting somewhere...".

This is a noteworthy dimension to the therapeutic role of the nurse and goes beyond accrediting the nurse as a contributor simply because of his/her presence and goes beyond the 'broker' role previously described. It fits in with the risk taking role advocated by Barer (1990) yet it was understated by nurses in the staff interview data. One explanation for this is that nurses lack confidence in what they are doing as suggested by Myco (1984) and therefore engage in actions which they do not voice for fear of it being considered by others as wrong. It may also be that nurses are poor at talking about what they do as found by Orem (1971) or that nurses simply do not recognise all those aspects of their job that patients value. The prescencing by the nurse (Benner & Wrubel 1989) acts in some way to facilitate risk taking by the patient as the patients appear to feel more secure in the knowledge that nurses know what activity the patient is engaging in and that the nurse has consented, perhaps implicitly, to that behaviour. Additionally, the behaviours that the patients engage in, in regard to risk taking, are 'real world' activities and not activities contrived by professional staff to assess functional or cognitive ability. This is consistent with findings in other studies which suggest

that patients measure their progress in terms of the social consequences rather than pathological processes, (for example Ternulf Nyhlin 1990).

There is some suggestion that patients find rehabilitation an exhausting endeavour and that they appreciate having activities performed on their behalf. For example, one respondent commented that it was nice to have some things done for you

P11 "Whilst you re-charge your batteries".

Whereas another commented that you need things to be done for you

P9 "You might be needing rehab. but you are still sick, I felt terrible I needed the nurses, they were always there"

others did however see the nurses as

P4 "Providing us with cleaning ourselves or feeding us"

which highlights the dilemma faced by nurses in that they do engage in basic nursing care to meet universal self care requirements and promote independence in self care. A skill that the nurse requires is the ability to determine the appropriate nursing system and be able to change that nursing system as individual patient need changes. Orem (1991) identifies a continuum of nursing systems which are concerned with caring for the dependent patient where wholly compensatory care is required through partially compensatory care to self care.

Little reference was made to the patients own contribution to the rehabilitation process. Where reference was made it

appears that the patients wished to distance themselves from the rehabilitation process and put themselves in the hands of the professional staff. Respondents did not see themselves as being able to contribute, for example,

P1 "I couldn't have been more involved than I was ... I wasn't fit enough"

whereas another stated,

P4 "I didn't know what to expect or what was expected of me .. I just let them get on with it"

The notion of patient involvement in the goal setting process will be discussed below but suffice to say at this point that patients appeared to be rather passive in the rehabilitation process.

In summary it would appear that all members of the multiprofessional team are valued by the patients and that patients can express those aspects about each professional group that they most value. Doctors are valued for their ability to diagnose and start treatments whereas physiotherapists are valued for improving functional ability especially walking. Occupational therapists were valued as they were seen as the gatekeepers to discharge home and nurses were valued by patients in two broad areas, firstly as providing basic nursing care (as for sick people) and secondly for providing an environment in which patients could gain confidence through risk taking. Patients appear to hand over the responsibility of rehabilitation to the professionals and assume a passive role in the rehabilitation process.

Goal setting

No direct patient involvement in goal setting was reported despite this being expressed in the staff interview data as the adopted approach. Some respondents were aware of the team conference and regarded this as the meeting when notable events especially discharge would be voiced. No respondent expressed a desire to attend the team conference though two stated in the interview that they would have had it been considered helpful, for example,

P7 "I didn't think to ask about going but I would of if they'd asked me".

Others were not aware of the team conference or aware of goal directed activity, for example,

P11 "I just put myself in their hands"

and little if any feedback following the team conference appeared to be shared with the patients. The key decision taken at team conferences was regarding the patient's discharge home and in many instances the patients knew this was imminent as they had been on a home visit with the occupational therapist.

Despite the lack of articulation of goals by the patients whilst in hospital all patients had one goal, that was, 'to get home' and being able to walk was seen as a precursor to this event. The patients did not express any concern about the quality of their walking but were amenable to instruction from the staff, primarily the physiotherapist. Patients were influenced not to be active goal setters because their uncertainty as to the future or long term outcome, for example,

P13 "I didn't know really, still don't, you know how back to normal I'll get, difficult to know what's going to happen in the future ... mind you I suppose none of us know".

In brief there was no active patient involvement in goal setting and that whilst patients had a goal, that is to get home, it was not shared openly between patients and staff. There was a lack of involvement of patients in the team conference but this was not seen as important by patients. Patients placed their trust in the professional staff and had a sense of being unsure about their long term outcome.

In response to the questions posed by Orem (1991), that is "what is the product made by nurses?" and "what results are sought by nurses?" the interview data suggests that nurses in the stroke unit were undertaking activities that serve to protect the patient from further neurological damage by engaging in wholly compensatory care in the acute phase of the illness and progressively nursing the patient to self care by moving through partly compensatory care to educative supportive care. The transition from wholly compensatory care to partly compensatory care occurs at the time of transfer from the acute stroke unit to the stroke rehabilitation unit but the nurses do not appear to be actively involved in the clinical decision to transfer the patient. The partly compensatory care system allows for a certain amount of risk taking and some patients appear to be able to negotiate to test their growing confidence in the presence of the nurse.

The interview data gave some insights into the interactions occurring on the stroke unit. The team conference was symbolised as *the* event where inter professional collaboration was focused and where key decisions about patient management plans were formulated. In order to

further explore this finding observation was undertaken of team conferences using a structured observation protocol and the findings of this are reported in the next chapter.

Chapter 6

Findings of the observations of team activities

Introduction

This section of the thesis reports on the findings of the surveys of team activity using the Team Observation Protocol (TOP) (Ducanis and Golin 1979).

Observation of the team conferences

A separate team conference was held on the acute stroke unit and the stroke rehabilitation unit at weekly time intervals and the meetings lasted from 43 minutes to 1 hour in the acute stroke unit and 1 hour and 5 minutes to 1 hour and 22 minutes in the stroke rehabilitation unit. The ward manager of each unit always chaired the meeting and usually there was one other nurse present. The senior physiotherapist and occupational therapist of the appropriate unit attended regularly and at least one stroke family support worker (a service funded by the 'Stroke Association') was in attendance. A social worker was only present on one occasion (Stroke Rehabilitation Unit) and on no occasions did a doctor join the meeting.

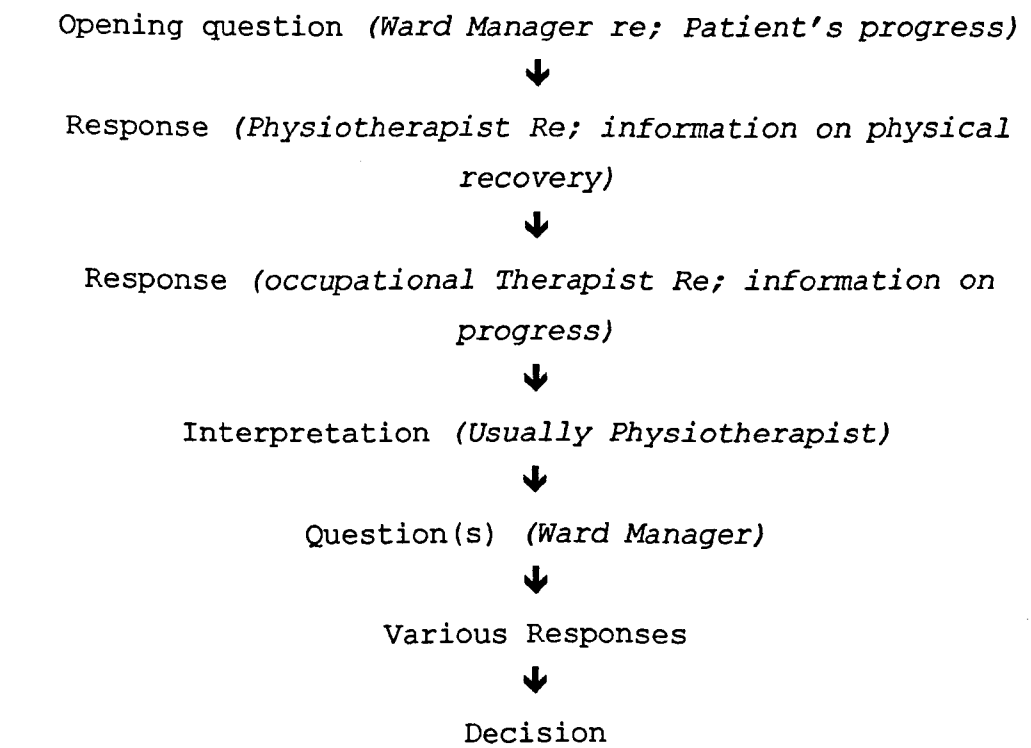
Five team conferences were observed (2 acute stroke unit, 3 stroke rehabilitation unit) and the recording schedule was used allowing a matrix identifying the sequence of responses (see table 14), and allowing for the summation of statements according to categories (table 15) and according to professional group (table 16). The frequency of data in each of the categories and for each of the team members was then calibrated and expressed as a percentage to facilitate interpretation.

Table 14 Sample TOP Record for 3 patients discussed at a Team Conference

Participants	Client	Team	Questions	Information	Interpretation	Alternatives	Decisions	Total
Ward Manager		32	1,4,8,12,19,26,33		23	24	25	11
Primary Nurse 1				11,21				2
Physiotherapist		31		2,9,20,27,34	5,13,17,36		7,14,18,30,37	15
Occupational Therapist				3,10,28,35	29,			5
Social Worker			15,22					2
Stroke Family Support Worker			16					1
Total	0	2	10	11	6	1	6	36

A pattern can be seen to emerge in the sequence of interactions at the team conference. This can be illustrated:

Figure 17 Sequence of Statements at Team Conferences



This pattern of interaction was seen to be replicated as each individual patient was considered at the team conference. The opening question seeking information about a specific patient's progress was invariably articulated by the ward manager. Information would then be given in response usually by the physiotherapist and then the occupational therapist. No interpretation would be placed on this initially and alternatives were sometimes suggested before a decision was made. Primary nurses tended not to respond to the initial questions and supplied information in the 'various responses' part of the process. A summary of statements made in each of the team conferences observed is presented in the following table (see table 15)

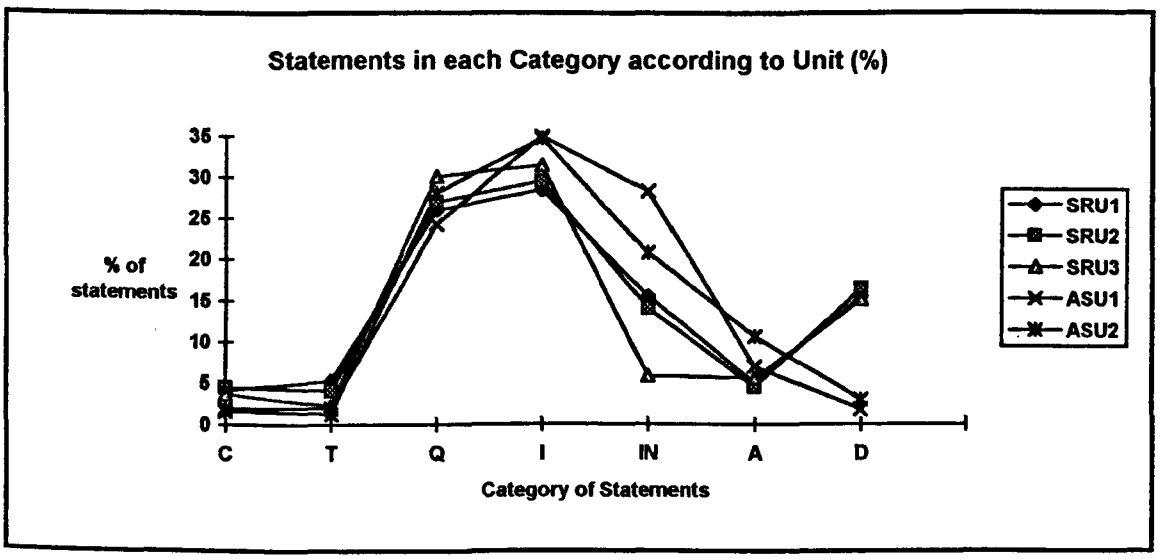
Table 15 Summary of Observations in TOP

Unit	Client	Team	Questions	Information	Interpretation	Alternatives	Decisions	Total
Stroke Rehabilitation Unit (observation 1)	n=38 (4.1)	n=48 (5.18%)	n=240 (25.94%)	n=264 (28.54%)	n=144 (15.56%)	n=47 (5.18%)	n=144 (15.56%)	n=925 (100%)
Stroke Rehabilitation Unit (observation 2)	n=44 (4.65%)	n=38 (4.01%)	n=254 (26.84%)	n=280 (29.59%)	n=132 (13.95%)	n=42 (4.43%)	n=156 (16.49%)	n=946 (100%)
Stroke Rehabilitation Unit (observation 3)	n=32 (3.65%)	n=20 (2.28%)	n=263 (30.05%)	n=275 (31.42%)	n=102 (11.65%)	n=51 (5.82%)	n=132 (15.08%)	n=875 (100%)
Acute stroke unit (observation 1)	n=11 (1.9%)	n=11 (1.9%)	n=140 (24.3%)	n=201 (34.89%)	n=163 (28.29%)	n=40 (6.94%)	n=10 (1.73%)	n=576 (100%)
Acute stroke unit (observation 2)	n=9 (1.65%)	n=7 (1.28%)	n=153 (28.07%)	n=189 (34.67%)	n=113 (20.73%)	n=58 (10.64%)	n=16 (2.93%)	n=545 (100%)
Total	n=134 (3.46%)	n=124 (3.20%)	n=1050 (27.15%)	n=1209 (31.26%)	n=654 (16.67%)	n=238 (6.15%)	n=458 (11.84%)	n=3867 (100%)

(N.B. The acute stroke unit had a maximum of 18 patients and the stroke rehabilitation unit 25 patients.)

The data is illustrated in the following figures: (see figures 18 and 19)

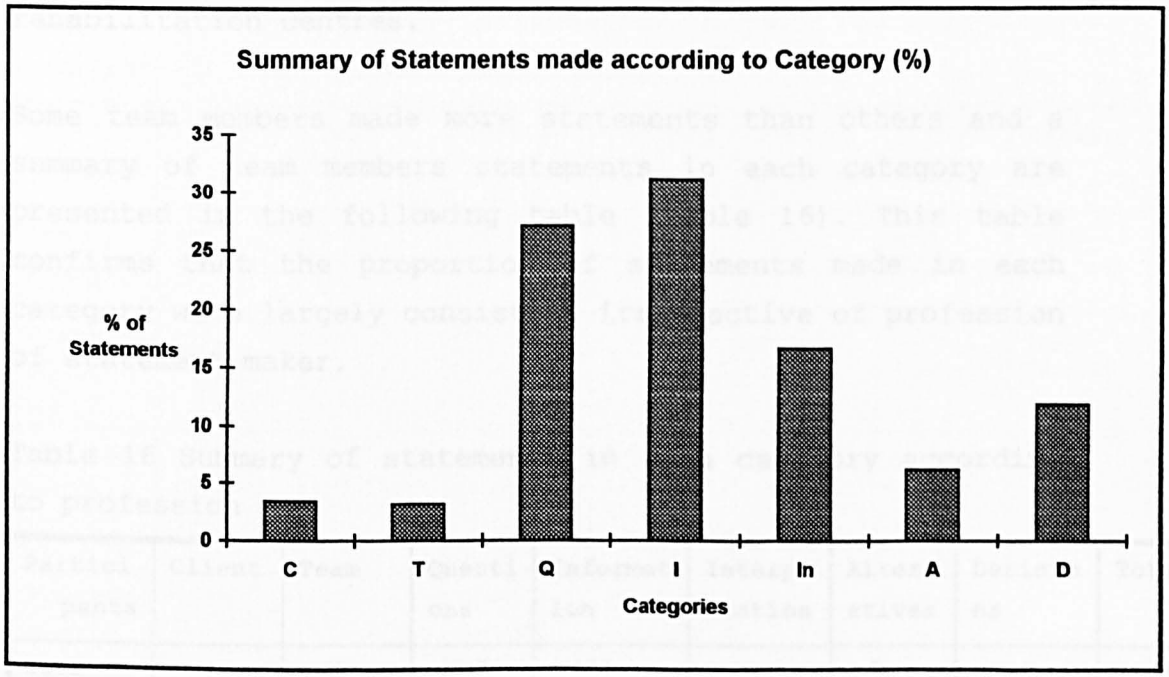
Figure 18



Key;

C=Client, T=Team, Q=Questions, I=Information, In=Interpretation, A=Alternatives, D=Decisions.

Figure 19



The summary suggests that most statements are concerned with information giving (31.26%) in response to questions (27.15%). Interpretation of the information is the next highest scoring category (16.67%) of statements where team members made inferences about what had been observed. On some occasions these statements were tainted by affective statements regarding the patient (3.46%) and usually referred to an opinion about the patients personality. Decision making was the fourth highest scoring category (11.84%) and interestingly the decision was made without the need for a full discussion of alternatives (6.15%) suggesting that either the team knew the options, or accepted the decision made. Statements about the team or team members were expressed and these were usually positive, for example, comments about the benefits of working towards the same ends. The distribution of responses in each of the categories is congruous with the findings of three studies undertaken by Ducanis and Golin (1979) in medical rehabilitation settings and in other team

settings such as residential schools and, alcohol and drug rehabilitation centres.

Some team members made more statements than others and a summary of team members statements in each category are presented in the following table (table 16). This table confirms that the proportion of statements made in each category were largely consistent irrespective of profession of statement maker.

Table 16 Summary of statements in each category according to profession

Participants	Client	Team	Questions	Information	Interpretation	Alternatives	Decisions	Total
Ward Manager	n=41 (0.33%)	n=38 (0.31%)	n=327 (27.2%)	n=376 (31.28%)	n=204 (16.97%)	n=74 (6.15%)	n=142 (11.81%)	n=1202 (31.08%)
Primary Nurse	n=7 (3.48%)	n=6 (2.98%)	n=55 (27.36%)	n=63 (31.34%)	n=34 (16.91%)	n=12 (5.97%)	n=24 (11.94%)	n=201 (5.19%)
Physiotherapist	n=57 (3.44%)	n=53 (3.2%)	n=449 (27.12%)	n=518 (31.29%)	n=280 (16.91%)	n=102 (6.16%)	n=196 (11.84%)	n=1655 (42.79%)
Occupational Therapist	n=18 (3.58%)	n=16 (3.18%)	n=136 (27.09%)	n=157 (31.27%)	n=84 (16.73%)	n=31 (6.17%)	n=60 (11.95%)	n=502 (12.98%)
Social Worker	n=7 (3.53%)	n=7 (3.53%)	n=54 (27.27%)	n=62 (31.31%)	n=33 (16.66%)	n=12 (6.06%)	n=23 (11.61%)	n=198 (5.12%)
Stroke Support Worker	n=4 (3.66%)	n=4 (3.66%)	n=29 (26.6%)	n=33 (30.27%)	n=19 (17.43%)	n=7 (6.42%)	n=13 (11.92%)	n=109 (2.81%)

The statements were then considered according to the proportion of statements in each category as compared with each other professional group (see table 17)

Table 17 Proportion of statements in each category as compared to other professional groups

Participants	Client	Team	Questions	Information	Interpretation	Alternatives	Decisions
Ward Manager	n=41 (30.59%)	n=38 (30.46%)	n=327 (31.14%)	n=376 (31.10%)	n=204 (31.19%)	n=74 (31.09%)	n=142 (31.00%)
Primary Nurse	n=7 (5.22%)	n=6 (4.83%)	n=55 (5.23%)	n=63 (5.21%)	n=34 (5.19%)	n=12 (5.04%)	n=24 (5.24%)
Physiotherapist	n=57 (42.53%)	n=53 (42.74%)	n=449 (42.67%)	n=518 (42.84%)	n=280 (42.81%)	n=102 (42.79%)	n=196 (42.79%)
Occupational Therapist	n=18 (13.43%)	n=16 (12.90%)	n=136 (12.95%)	n=157 (12.98%)	n=84 (12.84%)	n=31 (13.02%)	n=60 (13.10%)
Social Worker	n=7 (5.22%)	n=7 (5.64%)	n=54 (5.14%)	n=62 (5.12%)	n=33 (5.04%)	n=12 (5.04%)	n=23 (5.02%)
Stroke Support Worker	n=4 (2.98%)	n=4 (3.22%)	n=29 (2.76%)	n=33 (2.72%)	n=19 (2.95%)	n=7 (2.94%)	n=13 (2.83%)
Total	n=134 (3.46%)	n=124 (3.20%)	n=1050 (27.15%)	n=1209 (31.26%)	n=654 (16.67)	n=238 (6.15%)	n=458 (11.84%)

The greatest contributors to the case conference in terms of the number of statements were the physiotherapist and ward manager and this is evident in each of the categories. The physiotherapist supplies the largest amount of information and also raises the greatest number of questions which is noteworthy given that the ward manager chairs the meeting. The purpose of the meeting was to share information which would allow for decisions to be made in terms of goal setting and discharge planning. The latter issue, discharge planning dominated the discussion and the setting of team goals was not overt.

In both the acute stroke unit and the stroke rehabilitation unit the dominant theme was the patient's discharge destination and planned date of discharge. An abbreviated form of communication was accepted by all those present and the terms were never clarified in the meetings. The terms "going home", "not going anywhere" were used most frequently and these terms would often replace the need for discussion. That is, a patient labelled as "going home" would not be the subject of discussion but simply require the confirmation of discharge date. It appeared to be known to all those present that the patient in question had had a home assessment and was deemed to be able to cope in accordance with his or her home circumstances.

Those classed as "not going anywhere" were then ascribed one of a number of subcategories for example; "give another week", "have a good go" or "waiting for nursing home". Again this abbreviated form of discussion appeared to eliminate the need for lengthy discussion. In the case of the acute stroke unit the decision to transfer the patient to the stroke rehabilitation unit was never made at the meeting but was reported if a patient was listed and was waiting for a bed.

Patients who could not be classified into any of the above categories were the subject of discussion but clinical decisions were notably absent and the team appeared to be tolerant to playing "a waiting game". Serial observations of case conferences highlighted the notion of waiting until the patient could be considered as either "going home" or "not going anywhere". In the event of patient requiring greater individual consideration a single case conference was convened which would include all professions and the patient's relatives.

The decision maker was often the physiotherapist at the early stages of a patients stay and during later stages of a patient stay the occupational therapist. The ward manager would act as decision maker for patients recently admitted into the unit. Decisions were often reinforced by those present. Primary nurses, social workers, and family stroke support workers more frequently listened than spoke but did raise questions and give information. They acted to reinforce decisions and did not challenge decisions made. Affective statements concerning the team were always positive and were made most frequently by the physiotherapist (42.74%) and the ward manager (30.64%).

The findings of this study contrast with the findings of Waters (1991) where nurses were not vocal and appeared to be deferential to the doctors. The absence of doctors at the case conference put the nurse on centre stage and the nurse (ward manager) assumed the role of leader by acting as co-ordinator of the services. The nurse assuming this role was never challenged overtly but the finding of the physiotherapist raising questions and being the key decision maker is suggestive of a challenge to the authority of the nurse. In particular the physiotherapist appeared to have clinical decision making skills as well as a technical knowledge base. The interview data previously reported has suggested that each professional perceives themselves as more important than everyone else and that their professional group is more important than others. The climate of conflict is therefore ever present.

The team conference is not only symbolised as the important event for the exchange of information, but it also legitimises the nurse as broker and gives opportunity for the team to feel good about itself as it provides tangible evidence of collaboration.

The seeming lack of clinical decision making at the team conference, as compared to the positive light in which it was described by respondents in the interview component of the study, is striking and suggests that the team conference serves some purpose other than decision making. The team conference was symbolised as THE event where the team got together and reached decisions and to some extent the 'formal' nature of the meeting acted to legitimise the deployment of staff to this none 'direct patient' activity. Additionally it provided an arena/audience for the individual team members to share their views with the team, and as such allowed for affective statements to be made and accepted. A language common to the team members, and to some extent surpassing the boundaries of single discipline language, had developed eliminating the need for discussion or interpretation. This common language can be regarded as a positive development in the formation of an interdisciplinary team as all too often team members speaking different languages can result in team dissolution. The finding that doctors did not attend the team conference might in some way be attributable to their 'just passing through' status and hence do not see themselves as 'full' members of the team.

The common language not only reduced the length of the meeting but can be seen as a tangible activity illustrating group cohesion and may explain why resentment was felt that the team decision could be overturned by the medical staff. In reality the team decision is rarely overruled and all professions are sensitive to the need to maintain patient turnover. There was sentiment that suggested that if the doctors were present then they could not overturn the decision and it may have helped reduce the therapists perception of the nurse acting as an agent of the doctor. The nurses however did not express any concern at grasping the mantle of 'team leader' through their co-ordination of

the team conference and to some extent the team conference served the purpose of the nurses very well. It gave focus to the activity of the nurse in an administrative/organisational role legitimising this as nursing's contribution to stroke rehabilitation and also supported the nurse as broker. The nurses' role as "non-therapeutic manager" was noted by O'Connor (1993) based on a review of the literature and this study offers some empirical evidence to support this finding.

The team conference served to focus the decisions of the team but it is clear that some decisions are made outwith the team conference. The lack of dissent from team members and lack of consideration of alternatives is noteworthy. The core professionals involved in stroke care and rehabilitation can be categorised according to the prime nature of the statements they make at team conferences. The physiotherapist could be considered to be 'the proposer', the occupational therapist the 'confirmer' and the nurse (ward manager) as the 'organiser'. The doctor although not present at the team conference is not without a role. In this categorisation the doctor would be labelled the 'sanctioner' in that this professional group retained the right to veto decisions made by the rest of the team.

The team conferences appear to lead to the expediting of appropriate patients' discharge from hospital but it is less clear as to what other patient goals are agreed at these meetings. The meetings appear to serve to enhance team building but the ubiquitous potential for interprofessional conflict was evident.

In order to explore the notion of how the team work together and to explore the attitudes that they hold towards stroke rehabilitation surveys of team working and

staff attitudes were undertaken and are reported in the following chapter.

Chapter 7

Findings of the surveys of team climate inventory and professional staff attitudes.

Measurement of Team Climate

The Team Climate Inventory (Anderson and West 1994) was administered as a hand delivered questionnaire with self addressed return envelope to all qualified staff working on the stroke unit as follows, nurses (n=16), therapists (n=8 physiotherapists 5, occupational therapists 3) and doctors (n=2). All agreed to respond (see table 18)

Table 18 Profile of respondents completing Team Climate Inventory

	Acute Stroke Unit	Stroke Rehabilitation Unit	Mixed
Nurses	7	8	1
Doctors	0	0	2
Therapists	0	0	8*

* = There was some movement of therapy staff from the acute unit to the rehabilitation unit and their responses were grouped for the purposes of the team climate inventory, by contrast the nurses were stable either working on the acute stroke unit or the rehabilitation unit.

The completed questionnaires were scored by hand and entered into the computer programme (TCI software) supplied as part of the Team Climate Inventory package. (see Table 19)

Table 19 Sten Scores according to Professional Group on TCI

Scale	Subscale	Sten scores			
		Doctors	Therapists	ASU Nurses	SRU Nurses
Participative safety		5	6	5	7
	Information sharing	5	6	5	7
	Safety	4	6	6	6
	Influence	4	5	6	7
	Interaction frequency	5	8	5	8
Support for innovation		5	6	6	8
	Articulated support	6	7	6	8
	Enacted support	5	6	7	8
Vision		5	6	4	4
	Clarity	5	6	4	6
	Perceived value	7	8	4	4
	Sharedness	4	5	4	4
	Attainability	6	6	4	4
Task orientation		4	5	8	6
	Excellence	4	6	8	8
	Appraisal	4	4	7	4
	Ideation	6	6	9	9

Normative data is provided by the developers of the team climate inventory allowing for ease of interpretation of

results. Using this normative data the following interpretations are made.

The interpretation of participative safety with sten scores for each of the staff groups very similar (see table 18) suggests that the teams met occasionally and that most members participated in decision making. Individuals felt safe to some extent to propose some types of ideas. There was some trust between team members, although all members may not have participated fully to achieve team objectives.

In terms of support for innovation the responses of doctors (score 5), therapists (score 6) and nurses working the acute stroke unit (score 6) were interpreted as suggesting that there was some support for team innovation, but articulated or enacted support could have been improved. There was some innovation, but stability was also evident. It suggests that further team resources could usefully be committed to the development of innovation. The responses of nurses working in the stroke rehabilitation unit resulted in a score of 8 which placed the interpretation in a different band of the normative data (Anderson & West 1994). The key difference between the nurses on the stroke rehabilitation unit and all other groups was that sufficient articulated and enacted support for innovation was given and that innovation was favoured above stability. The team was considered to commit adequate resources to the development of innovation.

No differences between the groups could be suggested by the responses in the vision scale and the teams had to some extent only, a clear, shared and attainable vision which was valued by all the team members.

In terms of the task orientation doctors, therapists and nurses working in the stroke rehabilitation unit differed

from nurses working in the acute stroke unit. All teams other than those in the acute stroke unit were seen as being basically committed to achieving high standards of performance and were considered to sometimes critically appraise their work. They were seen as not readily having help to hand in developing new ideas. By contrast the responses from nurses working in the acute stroke unit suggested that the team was fully committed to achieving the highest levels of performance and that it had agreed criteria to measure excellent task performance.

The social desirability scale is dealt with differently and no normative data is presented, instead an "interpretation of social desirability scale" table is presented. Social desirability occurs when team members give false positive ratings of team climate which the designers of the tool (Anderson and West 1994) claim are too positive to be likely in reality. Using the interpretation of social desirability scales an unacceptably high social desirability response, indicating response bias was found in all groups. Testing the veracity of responses is advocated by Anderson and West (1994) and an attempt to do this has been made by cross referencing the results of the Team Climate Inventory with the interview data.

Participative Safety

The Team Climate Inventory (TCI) found that the team meet occasionally and support for this was found in the interview and observation data. Firstly the team only meet once per week and as a consequence of nursing rosters the consistency of the nurse member attending will vary week by week. This contrasts with the therapists who are consistent attenders. Secondly the doctors do not generally attend, instead rely on the nurse to act as their agent and report significant matters to them. This does give rise to

feelings of the 'full' team never really meeting and appears to give rise to coalition formation. Other opportunities for meeting such as at the 'in-house seminars' does not provide for all team members to meet and the seminars tend not to be interactive in the same sense as team meetings. Membership of professional societies tended to be low and where membership was held it tended to be in uniprofessional organisations. Some social gatherings were reported but again these tended to be uniprofessional.

The TCI suggested that most team members participated in decision making and again this finding is supported by the observational data. Decisions were regarded as team decisions but acknowledged that they could be overturned by doctors. The nurse was seen by the therapists as acting as an agent of the doctor and "pushing for patients' discharge" to maintain patient flow through the unit. This influenced participation in decision making as some felt there was little point in making decisions if they were not going to be adhered to. The variable attendance of nurses at the case conference would also lead to only partial involvement in the decision making progress and it was accepted that the ward manager would deputise for non-attending (primary) nurses.

Decisions were also made out with the case conference, for example, listing of patients for transfer from the acute stroke unit to the rehabilitation unit and this was accepted to be undertaken by the doctor and the physiotherapist, lending support to the creation of coalitions within the team.

The TCI found some trust between team members and this was also found in the staff interview data. The development of coalitions perhaps militated against full trust being established as might the nurse acting as an agent of the

doctor. Nurses were trusted to carry on therapy interventions, where they had personally been instructed according to individual patient need, but it was noted that this did not always happen and could give rise to mistrust. Team objectives should have given precedence over individual professional objectives but each profession maintained it's own set of notes. The medical and nursing notes were readily accessible but therapy notes tended to be retained by the therapist. This is discussed more fully in the following section on team goal setting but as will be noted later a profession's goals sometimes did not relate to the teams' goals.

Support for Innovation

The TCI responses for doctors, therapists and nurses in the acute stroke unit suggested that more support, enacted and articulated could have improved the support for innovation. Some evidence supporting this was found in the staff interview data. The acute stroke unit was a more recent innovation and it appeared to have been introduced by the Clinical Director (Doctor) and imposed on the ward level nursing staff. It is not within the scope of this study to make claims about how the acute stroke unit was established but the perceptions of those affected is relevant to the study within the context of understanding the structure and processes occurring in a stroke rehabilitation unit.

Nurses working on the acute stroke unit perceived that the acute stroke unit had been imposed upon them and as a result reported in the staff interviews that they felt unprepared and insecure. They reported receiving no in-service training at the time of the wards re-designation and an important point is that nurses generally have not been trained in rehabilitation. This was identified by the therapists too. Additionally there did not appear to be any

training in teamwork. These findings tend to suggest an absence of enacted support but it is more difficult to assess the extent of articulated support. There was no evidence of broken promises nor was there evidence of recognition of abilities through reward.

There were, however, numerous other innovations, for example, the introduction of integrated team notes, collaborative care planning and stroke research trials and in these events support had been enacted through team meetings, workshops and the services of the stroke research team. The stroke lecture series were open to all professions working on the stroke unit which offered some support for evidenced based medicine.

The notion of stability being favoured over innovation in the acute stroke unit is perhaps supported by setting the patients admitted into the 'acute care mind set', that is acute resolving disorders rather than a disorder leading to long term disability. The acute nature of stroke would lend itself to classification in this way in the acute stages but this mind set is inappropriate for those patients who have survived and are now in the post acute phase.

It is less clear why innovation was favoured over stability in the stroke rehabilitation unit but it might reflect an awareness that the 'acute care mind set' is inappropriate and that nurses sought new and innovative ways to meet the challenge of rehabilitating stroke patients. The nurses in the stroke rehabilitation unit perceived themselves as central to the rehabilitation process by acting as broker to the information flow and co-ordinating services. They also acted to carry-on the interventions of therapists outside of core hours and had conceptualised their input as promoting self care by enabling the patient to meet their universal self care requirements. The innovations in the

stroke rehabilitation unit, as in the acute stroke unit, of integrated team notes and collaborative care planning with care path method are congruous with the nurses' assumed role in stroke rehabilitation as co-ordinator and as such lend support to the finding of innovation over stability.

Vision

A lack of clear, shared vision was found in all groups responses to the TCI. This finding has some support from the staff interview data in that the stroke unit was perceived as to be evolving under the direction of the medical staff, in particular the clinical director. The evolution of the stroke unit from general rehabilitation ward to stroke rehabilitation ward and then the development of an acute stroke unit and more recently the establishment of a rapid stroke assessment clinic is suggestive of an incremental approach and whilst it may be part of the trust board's strategy it may not have been shared or internalised by staff at ward level. Innovations as noted previously tended to originate at clinical director level and be imposed at ward level by managers and the stroke research team. The lack of shared vision may simply be a reflection of not knowing what is coming.

Task Orientation

Responses to the TCI from nurses in the acute stroke unit differed to all other groups. The notion of nurses conceptualising acute stroke care as acute short term care is similar to the notion of 'focused care' as defined by Kratz (1978), in her study of district nurses, in which nurses valued the care and the care given corresponded to the observed needs of patients when the patients were categorise by the respondents as seriously ill. Where nurses are clear about their task function, as in the case

of acute stroke care, they are clear about what they are trying to achieve and the outcomes they expect. Where nurses are less clear about their task function, for example, when they are working on the stroke rehabilitation unit the aim of care is not known and not valued. Kratz (1978) referred to this as 'diffuse care' and suggested that the care given did not correspond to the observed needs of the patients. In this setting the nurse may be able to observe the patients' need but not have the necessary abilities to meet those needs. Kratz (1978) suggested two further categories which lie between focused care and diffuse care; 'semi-focused care' and 'semi-diffuse' care. The category of semi-diffuse care, defined as situations where the aim of care is thought to be known and valued accordingly can also be applied in the stroke rehabilitation unit. Patients in this category are viewed as 'really getting better' and the aim of care is invented. The aim of care was centred on discharging the patient home and few if any interim goals were stated as will be discussed in the following section concerning goal setting activity. Semi focused care refers to situations where the care is known within limits and was not evident in this study. The nurse can, however, co-ordinate the services of those she perceives as being able to meet the patients' need, that is, the therapists. Adopting the role of 'broker' therefore gives a role to the nurse but does not overcome the difficulty of appearing aimless in terms of delivering care to meet the patients' goals.

Summary

The staff interview data and the team observation protocol data provided useful information on which to check the veracity of responses to the TCI. Good levels of agreement could be established between the two sets of data and little evidence of incongruity could be found. This

suggests that the high positive responses found in the TCI suggestive of high levels of social desirability are supported in reality and as such the TCI is a useful tool to study team climate in a stroke unit. A number of insights into the processes occurring in the stroke unit were made. Specifically nurses working in the acute stroke unit valued the care they gave as it was focused and corresponded to the observed needs of patients. Care became more diffuse as the patients progressed from acute care to post acute care. The nurses working in the stroke rehabilitation unit were less clear about the aim of care but considered themselves as central to the process of rehabilitation through a managerial organisational role. Additionally they acted as a non-specific understudy in the absence of other professional groups. These findings support those of Waters (1991) in general rehabilitation settings and O'Connor (1993) based on conclusions from an extensive literature review.

The perceptions and values staff place on themselves may influence the care they deliver. Staff attitudes are seen as important though the relationship between attitudes and behaviour is not straightforward. The following section reports the findings of the survey of staff attitudes towards stroke rehabilitation.

Professional Staff Attitudes towards the rehabilitation of stroke patients

This section of the thesis reports the findings of the attitudes of professional staff towards stroke rehabilitation

The attitude scale (based on Hamrin 1982) but modified for use with different professionals was administered to all the qualified staff working on the stroke unit. A response rate of 100% (n=26) was achieved. Table 20 summarises the respondents according to professional group and unit of employment.

Table 20 Summary of Respondents according to Profession and Unit

	Nurses	**Physiotherapists**	**Occupational Therapists**	**Doctors**
Acute Stroke Unit	7	2	1	
Stroke Rehabilitation Unit	8	3	2	
Mixed	1			2

The completed questionnaires were scored by hand using a template and summated on a PC using a spreadsheet.

The overall scores for individual respondents were classified as high (>56) medium (46-56 inclusive) and low scorers (<46) towards stroke rehabilitation according to professional group (see table 21). A high score indicates a positive attitude towards stroke rehabilitation.

Table 21 Band of Scores according to Professional Group

	Nurses	Physiotherapists	Occupational Therapists	Doctors
Low Scorers	2	0	0	1
Medium Scorers	9	1	3	1
High Scorers	5	4	0	0

It is noteworthy that no high scoring nurses were identified on the acute stroke unit and that on this unit most were medium scorers with two low scoring respondents. By contrast the majority of nurses working on the stroke rehabilitation unit were either high scorers or medium scorers. The scores of therapists were similarly dispersed to those nurses working on the stroke rehabilitation unit. That is, physiotherapists were either medium or high scorers, all those working on the stroke rehabilitation unit were high scorers. The occupational therapists were all classified as medium scorers irrespective of the unit they were working on. The two doctors included in this study differed in that one was classified as a low scorer and one as a medium scorer.

In order to determine if there were any differences between the scores of respondents in each of the sub groups the results were subjected to statistical analysis. Non parametric statistics were used to analyse the data. The Mann Whitney U Test was used to assess any significant difference between two sub groups and the Kruskal Wallis analysis of variance test was used to assess any significant differences between more than two subgroups. Significance was set at the level of $p<0.05$. Data was analysed to determine if there was any significant difference between the attitude scores according to unit of

employment, respondent age, respondent sex, experience or professional group (see tables 22 to 26).

Table 22 Mann Whitney U Test: Attitude Score by Unit of Employment

Unit	Cases	Mean Rank
Acute Stroke Unit	11	8.45
Stroke Rehabilitation Unit	12	15.25
Exact 2 tailed	p= 0.0156	
Corrected for ties	p= 0.0161	

Professional staff working on the stroke rehabilitation unit recorded higher levels of attitude scores than those working on the acute stroke unit. This finding is statistically significant ($p<0.05$). The absence of high scoring nurses in the acute stroke unit is unlikely to be explained by the inappropriateness of the data collection tool for this setting as the tool has been used in general medical ward areas (Hamrin 1982, Gibbon 1991) and a distribution of scores across the range has previously been found. The acute stroke unit comprises half a general medical ward and as such the tool would appear to be relevant. The major difference between the acute stroke unit/general medical ward configuration in this study and previous studies is that stroke patients requiring stroke rehabilitation ('middle band patients') are transferred from the acute unit to the stroke rehabilitation unit. It cannot, however, be ignored that the philosophy of stroke rehabilitation is to commence activation on admission to the unit and not simply on transfer. A number of patients are not transferred to the stroke rehabilitation unit and receive all their rehabilitation in the acute setting.

Attitude expression tends to be more intense at each end of the continuum, that is, those with very positive or negative attitudes are more likely to express them than those with medium scores. In terms of the attitude scale those with lower levels of expression appear ambivalent towards rehabilitation of stroke patients. If the results obtained from previous studies are used as comparators then the scores obtained from nurses working in the acute stroke unit tend to reflect the scores obtained in general settings. The scores of nurses working in the stroke rehabilitation unit tend to be higher than the general scores obtained, it is not clear, however, if nurses with high scores select to work in stroke rehabilitation settings or whether they acquire more positive attitudes as a consequence of their experience or whether managers are able to select those nurses who exhibit positive attitudes towards stroke rehabilitation.

The staff interview data collected from nurses demonstrated that nurses had in a number of instances been 'passive recipients' in regard to their career choice. Whilst some had been 'active seekers', making deliberate efforts to work on the stroke unit many nurses had taken the first job offered to them or been guided by management. It is not clear in this study how managers selected nursing staff to work on the stroke unit but it is noteworthy that many had held fixed term short contracts prior to being awarded a permanent contract. The use of fixed term contracts certainly gives employers and employees opportunity to assess the match between person and post but it does lead to insecurity on behalf of the nurse. It might therefore be that from the employees perspective that any permanent job is better than a short contract. From the employers perspective the arrangement provides for opportunity to select those staff who appear to be exhibiting the 'right' abilities for a permanent contract.

A personal communication with the Directorate manager confirmed that managers like to select staff who match the job requirements and that support from the ward managers was seen as a major contribution to this process. Despite the imprecise science of staff selection, and the lack of clarity as to what variables the ward managers use to promote the case of an individual nurse it does appear that they are successful in selecting those with high attitude scores, or those who acquire positive attitudes towards rehabilitation of stroke patients to work on the stroke rehabilitation unit.

No significant difference was found between attitude score of respondents and age (see table 23)

Table 23 Kruskal Wallis Analysis of Variance Attitude Score by Age of Respondent

Age Band	Cases	Mean Rank
1 (21 - 30 years)	16	14.00
2 (31 - 40 years)	5	10.30
3 (>41 years)	5	15.10
Chi Squared	1.1624	Sig. = 0.5592
Corrected for ties	1.1781	Sig. = 0.5549

or between attitude score and sex of respondent (see table 24)

Table 24 Kruskal Wallis Analysis of Variance Attitude Score by Sex of Respondent

Sex	Cases	Mean Rank
Male	6	14.33
Female	20	13.25
Chi Squared	0.0926	Sig. = 0.7609
Corrected for ties	0.0938	Sig. = 0.7593

or attitude score and experience of respondent (see table 25)

Table 25 Kruskal Wallis Analysis of Variance Attitude Score by Experience of Respondent

Experience	Cases	Mean Rank
1-3 years	11	10.18
4-6 years	6	17.67
7-9 years	3	15.50
More than 10 years	6	14.42
Chi Squared	4.1423	Sig. = 0.2465
Corrected for ties	4.1982	Sig. = 0.2408

or between attitude score and profession of respondent (see table 26)

Table 26 Kruskal Wallis Analysis of Variance Attitude Score by Profession of Respondent

Profession	Cases	Mean Rank
Nurse	16	12.50
Physiotherapist	5	19.30
Occupational Therapist	3	12.67
Medicine	2	8.25
Chi Squared	4.1266	Sig. = 0.2481
Corrected for ties	4.1824	Sig. = 0.2424

The absence of previous studies exploring the attitudes of therapists towards stroke rehabilitation prevents comparison of the data in the same way used to examine the findings of nurses. Additionally the small numbers in the study prevent any firm conclusions being formed. It is however noteworthy that the attitude scores of physiotherapists are all in the high scoring band with the exception of one who was classified in the middle scoring band. The physiotherapists in this study comprised of those who had sought appointment in stroke rehabilitation practice ('active seekers' = 4) and it is noteworthy that these physiotherapists were in the high scoring band. One physiotherapist was classified as a 'victim of circumstance' in that she was currently in a rotational post. The score of this physiotherapist was in the middle scoring band.

The occupational therapists were all classified as 'middle scorers' in the attitude scale but as 'active seekers' in the analysis of the interview data. As with the physiotherapists the sample included those on rotational posts and those who sought positions in stroke rehabilitation settings. The lack of variance in attitude

scores of occupational therapists in not explained in this study but it may simply reflect the small sample.

Examination of the item scores for occupational therapists on the attitude scale revealed a universal sense of staff shortages for this professional group. The staff interview data revealed that occupational therapists spend a considerable amount of time undertaking home assessments rather then being engaged in 'on ward' rehabilitation activities which differentiated them from each of the other professional groups. This activity may have influenced the perception of staff shortages and adversely influenced their attitudes towards stroke rehabilitation.

The doctors included in this study were in rotational junior grades and neither had expressed an interest in pursuing a career in medicine for the elderly or stroke care in particular.

Summary

The attitude scale was able to measure the attitudes of each of the professional groups at the core of stroke care and rehabilitation. A range of scores were obtained and respondents could be placed into one of three scoring bands. Analysis of the data found a statistically significant difference between the attitude scores of respondents and the unit of employment. That is staff working on the stroke rehabilitation unit recorded higher level of attitude score than those working on the acute stroke unit. No statistically significant difference was found between the attitude scores of respondents and their age, sex experience or professional group. There is some association between attitude score and choice over career route.

Chapter 8

Findings of Survey of Documentary Evidence of Rehabilitation Goal Setting.

Rehabilitation Goal Setting Activity

Introduction

It has previously been noted that rehabilitation is based on goal setting and the focus of this part of the study was to explore documentary evidence of rehabilitation goal setting and interprofessional collaboration.

Method

A convenience sample of 20 patients' medical, nursing, physiotherapy and occupational therapy records were requested for review of evidence of goal setting (see table 27). As 2 patients had not been seen by an occupational therapist a total of 78 patient records were examined.

Table 27 Notes examined for documentary evidence of Rehabilitation Goal Setting:-

	Medical	Nurse	Physio	OT
No of notes	20	20	20	18*

Key *= 2 patients not seen by Occupational Therapist

Records were reviewed by a panel of four people each representing one of the professions at the core of stroke rehabilitation (i.e. a nurse, doctor, physiotherapist and occupational therapist).

Records were examined to note entries made up to and including the ninth day following admission as this represented the end of the first third of the mean length of stay of stroke patients in the unit. It was accepted

that not all information could be elicited at the time of admission and that the professions in general accept that information can be gleaned during the course of the patients' episode of care. It was also accepted that family and friends might supply information useful to the caring team and in some instances fill a void created by the lack of information obtainable from the patient. Given that it is an imperative to plan a patient's discharge from the time of admission it was accepted that an awareness of the patient's pre admission health and functional status need be known.

Findings

Table 28 summarises the results of the recording of pre-admission functional and health status.

Table 28 Record of Pre admission Functional and Health Status

	Medical	Nurse	Physio	OT
Proportion of notes containing useful information	n=3 (15%)	n=3 (15%)	n=3 (15%)	n=3 (15%)

The results show low levels of recording of useful pre admission functional and health status and most records tended to concentrate on the presenting situation, that is, the stroke rather than the persons pre stroke state of health. There was little evidence of entries concerning pre stroke health and functional status being entered after the original documentation was completed but unless those entering the information entered a separate date there was

little in the way to verify this and this is accepted as a limitation of reviewing documentary sources of information.

The documentation was then reviewed for evidence of recording of current functional and psychosocial status according to the criteria of the data collection tool. Current functional status was separated from psychosocial status and the results are summarised in the following table (Table 29).

Table 29 Proportion of notes containing useful information on CURRENT functional and psychosocial status

	Medical	Nurse	Physio	OT
Proportion of notes containing useful information on functional status	n=16	n=2	n=20	n=20
Proportion of notes containing useful information on psychosocial status	n=3	0	0	n=3

Differences were noted between the professional groups and functional status, where generally high levels of recording were evident, and psychosocial status where levels of recording were lower.

The level of 16 out of the 20 medical records examined containing useful information appears high but given the role of the doctor in assessing and examining the patient it might reasonably be expected to find this information in all patients records. The therapy professions each showed high levels of recording of current functional status and following the initial consultation where a thorough assessment of the patients' physical abilities were undertaken and recorded the records went on to record the current physical status at each therapy session. The nursing documentation revealed the lowest level of recording of physical ability amongst each of the professions yet the recording form was the most structured. It was not clear why nurses failed to record the information.

Firstly it was likely to be known to the nurse and this may represent the oral tradition in nursing where information is known but not recorded. Secondly it may be that the nurses chose not to record the information in the nursing documentation as a summary was considered to have been entered in the patient's medical record on a weekly basis following the case conference. It may also have been that nurses did not want to record this information on records that patients (and their relatives/others) could read as the nurses records differed from each of the other professions in that they were kept in a file at the end of the patients bed. It may also be that the lack of therapeutic function of the nurse (O'Connor 1993) left her with little to enter as discipline specific. A final explanation might be that the use of a structured form was less than helpful in this clinical situation. The nursing documentation was standard throughout the hospital and may be more appropriate for acute disorders. Nurses, when asked, considered that they recorded appropriate

information adequately and felt little was to be gained by noting further information.

Recording of the patients psychosocial status was made less frequently by all professions and in the case of nursing and physiotherapy no useful entries were found. Occupational therapists by virtue of undertaking home assessments would enter information about the patient's psychosocial status but by nine days post stroke no home assessments had been undertaken on the patients who's records were reviewed. The entries therefore reflected forward planning on the occupational therapists behalf and a recognition of mood state of the patient. The entries in medical records similarly reflected comment on the patients mood state.

The absence of recording psychosocial status in the physiotherapy records may reflect their focus of physical problems as determined in the interview data. The absence of entries in the nursing documentation cannot be explained away so easily and it appeared incongruous to find nursing records devoid of entry from a profession which espouses holistic care and a biopsychosocial view of man. The explanation suggested above for the low level of entries about physical status may go someway to explaining the absence of psychosocial entries but the finding does not augur well for a profession seeking to define its role in stroke rehabilitation.

A further explanation for the lack of entries is suggested to be the notion of "entry by exception" whereby an entry is only made if a problem is identified. The absence of an entry thus symbolising the absence of a problem. This was difficult to verify in a review of documentary sources but respondents did articulate this perspective but acknowledged that it was difficult to confirm that the

issue had been considered by the professional undertaking the assessment.

Rehabilitation goal setting was then reviewed and goal statements were required to be *SMART*, that is Specific, Measurable, Achievable, Relevant and Time specific. For the purposes of this study short term goals referred to those to be achieved whilst the patient was still an in-patient in hospital and long term goals referred to those to be achieved within six months following discharge. The results are summarised in the following table 30

Table 30 Proportion of Records containing Rehabilitation Goal Setting

	Doctors	Nurses	Physiotherapists	Occupational Therapists
Short Term Goals	n=11	n=5	n=18	n=20
Long Term Goals	n=1	n=1	n=1	n=2

Differences were noted between professions and short term goal setting and long term goal setting. In regard to short term goal setting the therapy professions appeared more attuned to setting goals and recording these in the patient documentation. Therapy sessions were discrete measurable episodes usually undertaken on a once (weekday) daily basis and as such differed from nursing interventions which were not discrete and measurable and medical interventions which were responsive to problems or based on ward round visits. The discrete nature of therapy sessions combined with the task specific nature of intervention is argued to lend

itself to the setting of goals. The episodic nature of treatment sessions provides almost natural time slots for goal attainment to be measured and this was especially so for short term goal setting and goals were typically set for time periods of less than one week.

Medical records showed some evidence of short term goal setting but it should be noted that some of the entries related to decisions made at the case conference and usually entered in the patients medical record by the nurse. The episodic reviews of patients' progress made by doctors at ward rounds allowed for the measurement of progress and the setting of goals to be reviewed at the next consultation.

Nursing records had the lowest level of short term goal setting amongst the professional groups and as previously suggested the nurses differed from each of the other professional groups by virtue of their 24 hour responsibility and consequent high patient contact time. The low level of short term goal setting might be a natural consequence of the shortcomings of inadequate assessment and recording of pre-admission and current health and functional status. It may also reflect the oral tradition of nursing or the unwillingness to record information or the lack of therapeutic function of nurses previously discussed.

The lack of episodic interventions with subsequent lack of distancing between the interventions and progress militates against goal attainment measuring and may explain the low level of short term goal setting.

Long term goal setting had low levels of recording in each of the different professionals records and this may reflect uncertainty as to the future progress of the patient. The

idiosyncratic nature of recovery is such that long term goal setting at nine days post stroke may be too ambitious but the absence of such goals may adversely affect the patients' motivation. Short term goals were frequently phrased in terms of the professionals' agenda, for example, "to regain sitting balance" where as patients measure their progress in terms of the social consequences. Long term goals might therefore reasonably be argued to act as a motivator. Prognostic indicators have yet to be fully established for patients recovering from stroke but 'good outcomes' are associated with a strong desire to regain independence (Myco 1984).

The final area of concern for this section of the study was to determine the extent of interprofessional collaboration as seen through the goal setting activity. Goal setting is dependent upon assessment and evidence was found of collaboration between the professions in terms of the initial assessment. This did however appear to lead to duplication of effort with the same information recorded in more than one set of patient notes. The initial assessment did not appear to ensure that all information was harvested and gaps in the knowledge base about patients was evident, for example, pre admission health and functional status was frequently omitted.

Short term goal setting was evident in the records of therapists and to a lesser extent medical records and there was some evidence of collaboration with common agreement about goals. This contrasts with an earlier finding of Gibbon et al (1993) where no evidence of collaborative goal setting was found in general rehabilitation settings rather than in the stroke unit.

Contemporary nursing is based on a problem solving approach (the nursing process) which is a cyclical process of

assessment, problem identification, planning, implementation and evaluation (Yura and Walsh 1978). The findings in this study suggest that the process of assessment is found wanting. In particular there was an absence of a holistic approach and even the use of a structured assessment sheet failed to ensure that information in each of the universal self care requirements or activities of living failed to gather information which could have been used for problem identification and rehabilitation planning. Nursing care plans for stroke patients contained few rehabilitation goals and this is suggestive of nurses lacking confidence in setting rehabilitation goals. Entries in nursing care plans for stroke patients including problem statements such as "immobility due to stroke" and the goal was phrased as "to regain walking ability". The plan of action or implementation section often stated "refer patient to physiotherapy" which firstly was unnecessary as the stroke unit had a policy of blanket referral to physiotherapy services and secondly suggests that the nurses perceive their role as broker. This finding supports the conclusions that O'Connor (1993) suggests that the nursing role is developing into one of managerial organisation.

Recent developments in health care delivery in general have seen a move towards managed care (Zander 1988) and stroke rehabilitation is no exception. The use of managed care has gained popularity as it is has been promoted as assisting cost containment whilst maintaining high quality care. Case management utilises a care pathway, a sequence of events that assists the patient to progress through an increasingly complex health care system with the minimum of delay. The care pathways have been determined on the basis of patternable behaviour and have been developed in high volume cases, such a stroke. A care manager is required to ensure the pathway is adhered to and this is usually a

nurse who has been prepared to masters level. The nurses working on the stroke unit are in some ways working as a care manager by adopting the managerial organisational role. Observation of nurses contributions at case conferences previously discussed supports this view.

Summary

Patients records including nursing process documentation and the assessment process did not appear to be sufficiently sensitive to the needs of patients requiring more than acute short term care. The lack of recording of pre admission health and functional status inhibits the development of an appropriate plan of care especially with regard to discharge planning. The recording of current status was focused on physical problems despite the influence of psychosocial problems on rehabilitation and care was directed towards acute problems rather than rehabilitation goals. Goal setting tended to be imprecise and not patient centred. It appears that the rehabilitation needs of stroke patients are not clearly identified and that there is a subsequent lack of goal directed rehabilitation.

Chapter 9

Discussion and Conclusions

Introduction

The purpose of this study was to examine the context within which stroke rehabilitation occurs by exploring staff and patient experiences and expectations of stroke care and rehabilitation. It also sought to explore the existence and extent of collaboration between the professional staff involved in the process of rehabilitation in order to gain some insights into the nurses contribution to the multi-professional team.

The study was underpinned by the *Self care deficit theory of nursing* (Orem 1991) and embraced the paradigm of practitioner research (Reed and Proctor, 1995). The core of the study was conversational style of interviewing in which staff and patients shaped the direction of the interaction, and a number of surveys were built around this core. This approach using multiple methods has been referred to elsewhere as methodological triangulation and was undertaken with the primary aim of obtaining a 'full picture' of the phenomenon under study: stroke care and rehabilitation in a stroke unit. A secondary aim of methodological triangulation in this study was to permit verification of findings from one method to another.

A central theme in stroke rehabilitation and care is team working and the conceptual framework guiding this study recognised that contributions to the team processes were concerned with shared contributions and individual contributions. The key individual contribution examined in this study which contributed to the team was the individual staff attitudes that staff brought to the team in relation to stroke rehabilitation. A central tenet of attitude measurement is that in some way attitudes influence behaviour.

The behaviour of individuals regarding the team and the process of care was considered to influence how the team collaborated and the climate which it created. Interprofessional collaboration was studied by undertaking a survey of team conferences which were acknowledged by staff to be the event when patient rehabilitation goal setting occurred. The climate in which the team worked was considered to be the unifying effect of the contribution of each individual in action, reaction and interaction. The 'personality' of the team as a whole was considered to influence how that team worked.

The team working was focused on providing a rehabilitation service for patients following stroke and this manifested itself in rehabilitation goal setting for patients. The rehabilitation goals were patient centred but required team input, not necessarily in equal proportions, but accepted by all team members. Rehabilitation goals were documented such that the team could determine the plan of interventions. A survey of the documented rehabilitation goals was undertaken.

The study was not undertaken by a 'naive' researcher but by a nurse who had been socialised into the culture under study. Within the paradigm of practitioner research the principles of declaring the stand of the researcher is clearly articulated, such that the reader of the final text can make an informed judgement about the findings of the study and the contribution to the wider population.

The desire to gain some insights into the culture of a stroke rehabilitation unit was informed by a review of the literature. During the course of the study excitement was evident that the therapeutic nihilism that had permeated stroke care and rehabilitation was being dismissed. A systematic review of the literature by the Stroke Unit

Trialist's collaboration (1995) declared that organised stroke care brought about improvements in patient outcomes in terms of functional ability and discharge destination. Whilst this is a rather narrow definition of improved outcomes it fell comfortably into the biomedical model of rehabilitation. Additionally it gave recognition to medical practitioners involved in stroke management that patient outcomes were not inevitable and could be influenced by interventions. Despite the rather vague understanding about what these interventions were the finding spawned a growth of stroke units and stroke physicians in the UK.

A key element to this study was gaining some insights into what these 'interventions' were. As a starting point a literature review was undertaken and the principles of undertaking a systematic review were adopted. Following a critique of the methodologies used in this study a summary of the main findings are presented. The findings are then discussed in greater detail in terms of the contribution to knowledge.

Methodological Critique

The approach taken in this section is to consider the strengths and weaknesses of the theoretical framework, practitioner research, case study method and each of the methods employed in this study. These included the systematic review of the literature, interviewing, and the surveys of team collaboration, team climate, staff attitudes and documentary records of goal setting.

Theoretical framework

The use of Orem's theory of nursing provided a useful framework especially in regard to the utilisation of nursing systems. The use of the three systems of nursing

intervention was particularly useful for post hoc categorisation of nurses activity but it was less useful for explaining the transition from one system to another, for example, partially independent to educative/supportive. The three questions underpinning Orem's theory were helpful in conceptualising the theoretical framework of the study. 'Nursing agency' is greater than that provided by primary carers and the nursing agency is influenced by the individual experiential attributes of nurses. Recognising this provided for collecting data concerning the biographies of individual nurses. The questions provided a focus to the generation of concepts under study in relation to 'therapeutic endeavour'. Team working was central to 'what nurses do' and 'what results they seek' and provided the impetus for notions of individual contributions and shared contributions to the therapeutic endeavour. The conceptual framework subsequently guided the study design in terms of the research methods and provided a strong rationale for the use of multiple methods.

Practitioner Research

Setting the study within the paradigm of practitioner research has permitted experiential learning to influence the research design and analysis. Recognising that organised stroke care improves patient outcomes, but being unclear as to what factors or interventions confer this 'value added' notion to stroke unit care was important. Declaring the factors which have influenced the design of the study, and the stand of the researcher have been included in the presentation of the final report such that the reader can make an informed judgement as to the worth of the study. Every attempt has been made to be honest about what was found and whilst there is an overt agenda to improve stroke patient care, that is champion a cause, the opportunity to be reflective on that found has resulted in

a more reflexive and purposeful analysis than might otherwise have been possible.

The findings of this study are not generalisable to other stroke units and no claim is made that the findings of the study apply anywhere other than the study unit. The study has acted to test research tools and each have been found to provide insights appropriate to the research questions. The replication of this study in further sites would confirm or reject the findings as applying to stroke units and as such provides an area for further research.

Case Study Method

The principles of case study method as described by Yin (1989) were adhered to in the study which led to the provision of a richness of data within a context. As such this approach has advantages over other methods, for example, postal survey. The case study method does however by definition limit the sample size. In this study the 'case' was defined as the stroke unit in a District General Hospital and the sample included all professional staff working day to day on the unit. A decision was made to exclude "bank" and "agency" staff as there was no assurance that these staff would work consistently on the unit. At the time of the study nursing staff were separated into day duty and night duty staff. Only day duty staff were included in the study as night duty staff did not work with all of the other professional groups.

The sample size will be regarded by many as small, especially for the surveys used in this study, but this has to be viewed within the context of case study method and total population. All respondents were included in all data collection approaches and as such a sense of 'completeness'

is felt and the surveys are supported by a richness of the interview data.

Systematic review

The systematic review as a means of undertaking a review of the literature has gained popularity in recent years, most noticeably in the contemporary climate of an evidence based health care system. This perspective which provides for an effective and efficient health care service has its roots in the trust that is placed in science at the expense of dismissing that gained through experiential learning. The quest for a review of existing knowledge does not commence with a 'blank slate' and it necessarily draws on that which has preceded it and a decision has to made on how best to approach a review of the literature. There are proponents of undertaking research without first doing a literature review (e.g. Glaser and Strauss, 1967) and this has its origins in the notion of avoiding deductive methods of data analysis. A key concern of this perspective is to permit the development of fresh perspectives or new theoretical developments. This does however create a difficulty of amassing a body of cumulative theoretical knowledge and could lead to much replication of existing work. The acceptability of this perspective in a climate of financial constraint in terms of research grants is questionable.

The traditional approach to a review of the literature has been questioned as it would appear that proponents of particular view points are able to manipulate the presentations of their review, and hence the case for more research, on a selection of papers which best supports their perspective. This is perhaps a rather cynical view but the history of health service research suggests that it has been a rather haphazard affair and conflicting findings from primary research have influenced practice resulting in

a vacillation of delivery as each 'new' study purports to support a particular standpoint. Additionally it cannot be ignored that much practice is not so much based on research but on rhetoric generated by leading professionals. Concern that these approaches do not lead to best practice is behind the drive for evidence based practice.

A key criticism of the systematic review is that it is based on an *a priori* definition of the topic, in this instance stroke rehabilitation. To make such a decision at the outset of the study can lead to a lack of new insights and a failure to develop alternative or new theoretical frameworks. The 'systematic review' as an approach to determine the best practice for the least cost has become an important tool in the evaluation of health services research and the subsequent generation of clinical guidelines to inform practice. A pre-condition of undertaking a systematic review is the generation of an answerable question (Sackett, Richardson, Rosenburg & Haynes 1997) and the availability of sufficient adequate primary research, usually randomised controlled trials to answer the question. At its simplest level an answerable question is one which seeks to determine the weight of evidence to support one of two intervention options but such simplicity is rarely found in clinical practice.

The systematic review is a dynamic process and in addition to providing answers to questions it generates further research questions. This is particularly evident when the question shifts from 'what' is effective to 'why' is something effective. This shift occurred in the study reported here. By addressing the 'why' questions in the systematic review a number of insights could be gained into the suggested reasons for the success of stroke units.

A pragmatic decision was therefore made to undertake a systematic review of the literature in that it would overcome the criticism of selecting only those papers which supported the researchers perspective but it is acknowledged that a broader range of review with a more embracing range of material reviewed may have provided alternative fresh insights.

Once the decision was made to undertake a systematic review of the literature a protocol was established. This included the search terms, inclusion and exclusion criteria, a method for grading the papers and a method of determining the contribution to the literature. As previously indicated the selection of the search term at the outset of the review acts to limit the eventual conclusions. The protocol used in this study also constrained the papers identified by relying on a limited range of electronic databases and a limited number of journals for hand searching. It is known that electronic databases do not catalogue all papers and considerable published material has been excluded from the study. This is accepted as a limitation. Furthermore the selection of specific dates for the review period applies 'artificial boundaries' to the identified papers and hence limited the material from which the conclusions were drawn. Selecting start dates prevents 'classic' works from being included in the review and the time interval between publication and its cataloguing on the database prevent 'state of the art' papers from being included. The hand searching was undertaken to overcome some of these limitations but a full systematic review greater numbers of appropriate journals may have been more informative.

The approach taken in this study was to accept or reject papers on the basis of whether they had an informative abstract. This limitation is acknowledged. In effect fourty

papers out of one hundred and sixty one were rejected at this stage leaving one hundred and twenty one for full review. It is noteworthy that papers identified on the electronic database without abstracts tended to be care studies published in weekly popular journals rather than refereed scientific papers reporting empirical studies. These papers were primarily identified through the CINAHL database which appears to have a lower threshold in terms of academic rigour. As a method rejecting papers from full review because of poor or missing abstracts is not endorsed and the reader is recommended to subject all identified papers to a full review.

The process of review utilised the concept of hierarchy of evidence to grade papers in relation to their contribution to the literature. The grading criteria used was adopted from Sackett et al., (1995) and the difficulty of using this in practice was noted. In particular it required the researcher to 'grade' each identified paper and hence the researcher had to make a value judgement about the contribution of the paper to the literature. Ironically this introduced a subjective element into what is held up to be an objective approach to literature review. For a researcher to grade a paper as making a contribution to knowledge it is self evident that the researcher must in the first instance know what exactly is the state of existing knowledge. This begs the question as to whether all researchers or practitioners can undertake a systematic review and perhaps gives some credence to the reliance placed on clinical guidelines prepared by subject experts. Philosophically who determines what and who an 'expert' is remains unclear. In this study the researcher alone graded the papers and hence accepts responsibility for the decisions reached. Within the paradigm of practitioner research where the researcher has declared his stand it

might be inferred that the researcher is in this instance claiming to be an 'expert'.

An additional limitation to the systematic review is the need to extrapolate data rather than harvest reported findings. This is especially so if the clinical question is tangential to the original study report. This was particularly evident in this study when the original papers had reported patient characteristics in terms of recruitment and outcome to the study, but did not report, either at all or in detail, the processes involved. A possible consequence of this is the failure to identify significant attributes of a service and hence fail to look for them in a planned study.

Survey Instruments

Team Observation Protocol

The survey instrument used in this study to examine interprofessional collaboration was the Team Observation Protocol (TOP). Despite frequent reference to this in the literature, especially the American literature, no studies using this instrument were identified. Despite this the Team Observation Protocol (Ducanis & Golin 1979) appeared to have face validity and this study has acted to pilot the use of this instrument in rehabilitation settings in a UK context. The structured nature of the TOP appeared attractive in that statements made in the team conference could be counted and placed into the most appropriate category. Whilst this confers a number of advantages, such as speed of recording, and determining in a quantitative sense the greatest contributor to each of the categories, for example information giving, it also had a number of disadvantages.

The disadvantage of the TOP is the 'forced choice' the researcher has to make in relation to expressed statements. That is, the categories are pre determined and the task for the researcher is to code the expressed statements into one the existing categories. This has the effect of reducing the coding of data and limiting the range of insights that can be gained about interprofessional collaboration. The coding is in effect done 'live' in that the researcher was not taping the team conference or taking field notes but ascribing the expressed statements to one of each of the pre-determined categories. Only major statements are thus coded and this runs the risk of subtle or less overt statements from being noted and recorded. The instrument was fairly easy to use in a situation of five 'speakers' but it cannot be ignored that the researcher had insider knowledge about the nature and scope of the interactions at the team conferences through experiential learning.

An alternative approach considered was to undertake participant observation using an observation schedule and the recording of field notes. This would have allowed for recording of all processes occurring in the team conference rather than simply the expressed statements. Additionally it would have allowed for the generation of new or alternative categories and hence new insights could have been gained.

The TOP is a useful tool for the simple and rapid recording of expressed statements and is particularly useful if the purpose is to determine the number of expressed statements made by each of the people present at the team conference in each of a number of predetermined categories. It was noted that whilst the instrument was not designed to collect verbatim statements interesting and informative data of a qualitative nature could be missed and a recommendation for further study would be to triangulate a

planned qualitative approach with the team observation protocol.

The TOP was only used in Team Conference situation and it was envisaged to employ the same data collection instrument in a case conference; the discussion of a single patient by the multi-professional team at which the patient and his relatives may also be present. As previously noted no such case conference took place during the course of this study and it remains unclear as to the utility of this tool in such a situation.

Team Climate Inventory

The Team Climate Inventory (Anderson & West 1994) has been used previously in NHS settings but not in stroke units specifically. The instrument did however provide for meaningful data. The absence of previous use in rehabilitation settings though does place some limitations on the findings. Further studies in other rehabilitation settings would provide additional data and allow for the development of normative data specific to stroke rehabilitation settings. This suggests an area for further research.

Staff Attitudes Questionnaire

The attitude scale originally devised by Hamrin (1982) was modified by the researcher for a previous study (Gibbon 1991) and was subsequently modified again to enable completion by professions other than nursing. No other data exists to contrast the findings of the attitude scale survey for professions other than nursing. The findings in this study, with only a small sample of therapists suggests that they may be less ambivalent towards stroke rehabilitation than nurses. The use of methodological

triangulation has permitted some verification of findings by considering the career choices of therapists as expressed in the interviews with that collected on the staff attitudes questionnaire. Whilst to some extent the more positive attitudes recorded in the staff attitudes questionnaire is verified by the active career choices members of these professions make, further study is required exploring therapists attitudes to stroke rehabilitation in general. This suggests an area for further research. The previous use of the tool with nurses in general medical ward settings (Hamrin, 1982, Gibbon, 1991) provided data against which the findings in this study could be compared. As such the instrument is useful for measuring nurses attitudes to stroke rehabilitation and is able to discriminate between, high, medium and low scoring nurses.

Rehabilitation Planning Questionnaire

The instrument used for the survey of rehabilitation goal setting through documentary sources had previously been used by the researcher for patients following stroke, but not in stroke unit settings (Gibbon et al., 1993). The limitations of surveying documentary sources are however great, as at best the findings are only as good as the original documentation. Each of the professional groups appears to use a discipline specific model to guide the recording of patient information, for example, medical staff employ a cephalo-caudal systems approach whereas nurses in this study used an activities of daily living framework. The physiotherapists appeared to be particularly focused on mobility issues and the occupational therapists, whilst using an activities of daily living framework applied the principles differently to nurses. The differences in professional language was perhaps the greatest difficulty with this aspect of the study and

whilst an agreed standard was possible amongst the panel reviewing the patient records this standard would not have been known to the clinical staff making the entries in patient records at the time. It might be that the agreed standards reflect an ideal that cannot be achieved in practice. The findings in this aspect of the study suggest that entries made in patients records in stroke units compare favourably to those found in general settings (Gibbon et al., 1993) but are still found wanting. Further studies are required to demonstrate the appropriateness of this survey instrument.

The main findings of the study are that;

- there are differences in the key characteristics between nurses and other professional groups in terms of entry into the health care profession, career aspirations and professional activity;

- there are differences in the aims of intervention between the professions which is reflected in role expectation and performance;

- there are differences in attitude scores towards stroke rehabilitation amongst nurses according to their unit of employment;

- communication between and amongst the professional groups improves through team meetings but coalitions form with the team;

- interprofessional collaboration is perceived by participants to have improved, primarily through closer proximity and through team working;

- in the stroke rehabilitation unit the teams' ability to be creative has improved as support was perceived to be greater and interventions more focused and valued;

- nurses have assumed the role of team leader through brokerage and through substituting for doctors on a day to day basis but doctors retain the right of veto;

- nurses are developing a therapeutic role by instigating patient activation, motivating patients and providing opportunities for patients to re-learn daily living skills;

- patients valued nurses as professional staff who not only encouraged and motivated them to acquire self caring skills but would act for them at times considered appropriate by patients themselves;

- patients valued their experiences in a stroke unit and believe that it contributed to their recovery.

Discussion of the main findings

Discussion has been entered into alongside the findings of the interview data (chapters 5). A consistent approach has been used in the reporting of this study with discussion, and where appropriate interpretation, alongside the findings of the surveys (chapters 6 to 8 inclusive). This was done to facilitate ease of reading. This discussion section is therefore limited to the integration of the main findings from each of the methods employed and the subsequent contribution of the study to the development of knowledge in this field.

The central concept guiding the study as identified in the conceptual framework is therapeutic endeavour. This concept was operationally defined as the amalgam of interventions instigated and delivered by the multiprofessional team. To understand the nature of the multiprofessional team required an understanding of the constituent members in terms of what they bring to the team and what they expect others to bring to the team. In particular was a desire to gain some fresh insights into the nurses contribution to the multiprofessional team in this setting. It was previously argued that within the paradigm of practitioner research was the need to understand the researcher and in particular their 'stand'. A similar argument is placed here in that to understand the multiprofessional team, in particular the nurses within that team, was the need to understand the team members and where they 'stood'. Orem (1991) sought to determine what nurses do and she recognised that at least in part this required some understanding of the nurses, such as their experiences. This approach was used in this study where biographical data was gathered to provide some meaning and context to the team members. Additionally professional staffs' attitudes towards stroke rehabilitation was surveyed as this was considered to underpin the individuals' contribution to the team.

As expected a range of professional staff were found to be working on the stroke unit and this study focused on the core members of the stroke rehabilitation team, namely the nurse, physiotherapist, occupational therapist and doctor. Amongst this group, as expected, was a range of experience but it was noteworthy that none of the staff had experience of working in a rehabilitation setting in any other institution. This finding may simply be an artefact of the case study site or it may reflect a decline in the movement

of professional staff from one institution to another in more general terms.

It has been previously noted that re location from one area to another is difficult, especially for women, who constitute the largest proportion of health care workers and the majority of participants in this study. This is largely attributed to domestic considerations over and above professional considerations. The increasing tendency in the UK for 'double income' families, that is where both partners are in paid employment further decreases mobility between hospitals. In addition the reorganisation of the NHS with large District General Hospitals and less smaller hospitals in one locality limits local movement of staff and thus limits opportunity for gaining experience and insights into alternative patterns of care delivery. Local recruitment into training at certificate and diploma level courses is the norm and to some extent this is seen amongst recruitment into the nursing profession. Recruitment to degree studies at universities is less dependent on local recruitment.

The nurses contribution to the multiprofessional team

The findings of this study support the general trend in recruitment and the policy context maintains nursing as different from each of the other professions. That is, all health care professions except nursing have moved to an all graduate profession with basic preparation being undertaken in higher education rather than professional schools attached to hospitals. Nurse education has likewise moved from hospital attached professional schools to the higher education sector but the majority of nurses are still prepared to the lower academic level of diploma in higher education rather than first degree.

There are a number of consequences of this. Nursing is not as fully integrated into the higher education sector as it might be and opportunities for nurses to participate in shared learning with other health care professionals are subsequently reduced or eliminated. In part this could lead to or maintain the perception of nurses being inferior to other health care professionals and nursing being seen as a less theoretically demanding job. Some evidence for this was found in this study. A number of nurse participants commented that they felt that they could enter nursing but would not meet the entry criteria for the other health care professions. Maintaining nursing at a lower academic level is contrary to the present ethos of delivering 'best practice' based on evidence. If nurses are not permitted to share the same opportunities as other health care professionals then nursings' ability to demonstrate its effectiveness and efficiency will be hampered. It could result in nursing being evaluated by other professions who do not understand the questions to be asked or the value of nursing to health care. It is noteworthy that the opportunity does exist for nurses to be prepared for registration at first degree level and follow up surveys of graduate nurses have found that they have longer clinical careers than conventionally trained nurses.

On the positive side local recruitment of nurses provides for greater social proximity between patients and nurses as the population of nurses in any given hospital is more likely to reflect the local population. Little evidence exists to assert that close social proximity confers any positive benefits to patient outcomes but it may enhance the communication process.

The responsibility for recruitment into education and training for health care professionals has been devolved to regional offices of the NHS management executive who are

charged with determining local manpower requirements but it does not follow that local people will be recruited into training programmes. The imperative for local services for local people is similarly not achieved by local recruitment unless those recruited are involved in policy formulation. In the event of nursing becoming an all graduate profession with education being undertaken in universities a different pattern may emerge.

The wider entry gate into nursing, necessary to recruit the numbers needed to provide the service is likely to militate against the development of an all graduate profession. Additionally the necessity to maintain a broad professional preparation is likely to militate against the specific requirements of experience in rehabilitation settings. To some extent this is surprising given the increase of the elderly in the population as a whole and an increase in the number of elderly admitted to hospital who require rehabilitation. The opportunity for a specific branch programme of nurse education in elderly care was passed over at the time of the proposals for the reform of nurse education (Briggs 1972). The findings of this study suggest that nurses felt inadequately prepared to work specifically in stroke rehabilitation settings and that therapists also considered nurses to have been unprepared. The doctors interviewed in this study assumed that the nurses had been prepared to work with this specific client group.

The role of the nurse in rehabilitation settings requires a shift of culture from the nurse as 'doer' to the nurse as 'facilitator'. Some evidence of this cultural shift was evident in this study where nurses in the stroke rehabilitation unit identified with motivating and promoting self caring activities. This cultural shift was not however found in the acute stroke unit where nurses continued to act as 'doers'. This finding raises questions

about the appropriateness of Orem's (1991) model to all clinical situations. Taken at an overview of nursing activity level the model provides for a progression from wholly compensatory care (doing for and to the patient) to an educative/supportive role (teaching and promoting self care in the patient). Given the development of more focused clinical areas, including the development of acute and rehabilitation stroke units, individual nurses may not employ the range of nursing interventions and as such patients not admitted to an appropriate unit may not receive the most appropriate form of intervention.

The findings from the participants in this study suggest that little if any thought was given by the management to prepare nurses for their 'specialist' role as providers of stroke services. Additionally the nurses themselves recognised the need for specific preparation but perceived a lack of opportunities available to assist them. Hence a situation of learning whilst doing occurred leaving the nurses as feeling unsupported, insecure and lacking in confidence. An assumption appeared to have been made by the manager that the nurses had the appropriate skills. It could also be inferred that the nurses themselves thought that they had the appropriate knowledge and skills as they did not undertake any personal preparation and it may be with hindsight that they now recognise that they were ill prepared for the specialist role that the development of the stroke unit placed on them.

It may also be contended that the professional preparation of nurses in this study had failed to make them 'life long learners'. That is, their training had been adequate for them to demonstrate the competencies for registration but it did not prepare them to be information seeking, problem-solving individuals with a thirst for professional development. Recognition of the inadequacy of professional

preparation in terms of the development of life long learning has led to innovations in curriculum design and teaching methods. Student centred teaching (Joyce & Weil 1986), problem based learning (Boud & Feletti 1991) and reflective practice (Benner 1984) are amongst these innovations.

Role Expectations

The nurses on the acute stroke unit appeared to be less clear as to the aims of care in terms of rehabilitation and hence placed less value on it. This finding is consistent with the classic work of Kratz (1978) in her study of district nurses. Additionally the nurses on this ward had the competing demands of acutely ill medical patients as well as patients following stroke, a number of whom at any one time were critically ill and unconscious. Nurses working in the stroke rehabilitation unit appeared to be clear as to the aim of rehabilitation and placed greater value on it and had developed a therapeutic role in terms of motivating, education, involving the family in care and risk taking. This finding is in many ways in keeping with the concept of 'prescencing'. Prescencing is a rather vague concept but the value in having nurses around, expressed by patients, offers some support to this concept. Whilst remaining rather vague it could reasonably be inferred that prescencing refers to the subtle and perhaps intuitive approach that experienced nurses employ in clinical practice. As such it is a trait of 'expert' nurses and further research is required to tease out the very elements of this practice such that it can be identified and taught to others.

This is a further development of the nurses' role and greater than the organisational or substitution roles suggested by O'Connor (1993) and Waters (1986) respectively

and reflects innovation in practice. The notion of nurses acting as a motivational force is difficult to measure and is frequently regarded as one of the invisible contributions of nurses to patient outcomes. Despite this it should not be underestimated and previous studies, for example, Ragsdale, Yarbrough, and Lasher (1993) reported on the beneficial effects of using social support for stroke patients. Support for the nurses acting as motivators was found in the responses from patients and additionally patients reported that nurses were particularly good at determining when they needed actions to be carried out on their behalf and the times when they appreciated being encouraged to act for themselves. These findings provide some insights into the contribution of the nurse to stroke rehabilitation and it is possible to provide some answers to the question posed by Orem (1971, 1991), "What do nurses do?"

The contribution of the nurse to stroke rehabilitation is greater than managerial organisation and substitution for other professional groups. These earlier conclusions (O'Connor 1993, Waters 1986) minimalise the contribution of the nurse and fall short of defining the specific therapeutic contribution of the nurse. The methods employed in this study have provided further insights into the contribution of the nurse and suggest, especially in stroke rehabilitation unit settings, that nurses are developing and undertaking a specific therapeutic role. The activities of nurses in the stroke unit which appeared to influence patient outcomes were concerned with motivation and encouragement. Patients interviewed remarked on how nurses helped them to get better by giving them the confidence to undertake activities first taught in therapy sessions. Patients conceptualised therapy sessions as time for being taught and time with the nurses on the ward as time to learn. This is greater than nurses substituting for

therapists as it required risk taking on behalf of the nurse to modify or adapt taught activities and provision of opportunities for patients self experimentation in performing activities of daily living.

Nurses role expectations were that they would substitute for other professional groups but additionally they expected to play a full part in using their clinical judgement to determine when a patient was ready to make the transition from dependent care to independence. Unlike the therapists whose aim of intervention was rehabilitation the nurses had a role to care for the highly dependent patient who required activities to be done for them and then a role to promote self caring through an educative problem solving process. Nurses also had a role expectation of instigating intervention rather than being dependent upon direction from other professionals. This notion of nurses taking the lead in clinical practice reflected their growing confidence in this specialised area of care, and the confidence placed in them by others, notably the doctors, that they were best placed to ensure the most appropriate patient management.

Professional staff attitudes towards specific client groups have been measured in a number of clinical areas. The premise being that in some way attitudes influence behaviour. A given attitude score does not predict a particular behaviour but may give some insights into the value and beliefs held by individuals towards given situations. The assumption is that individuals who hold views that stroke rehabilitation confers no benefits to patients are unlikely to work in this clinical speciality. It was found in this study that staff had not always elected to work in this area. For some it was a consequence of being in a junior position on a rotational post, whereas

for others, especially nurses, it was as a consequence of ward re-designation or lack of available alternative posts.

Despite this the attitude scores of the nurses on the stroke rehabilitation unit toward stroke rehabilitation was more positive than the nurses in the acute stroke unit. This finding might simply be explained as a direct consequence of nurses in the acute stroke unit feeling 'put upon' by managers who redesignated a general medical ward without apparently consulting the ward staff. It is noteworthy however that the attitude scores of nurses on the stroke rehabilitation unit were significantly more positive than those found by Gibbon (1991) in his earlier survey of nurses attitudes towards stroke rehabilitation in general medical wards. This suggests that nurses in stroke rehabilitation units are more positive in their attitudes to stroke rehabilitation than other nurses but it is not clear if this is cause or effect. There was insufficient evidence to suggest that nurses with positive attitudes to stroke rehabilitation seek to work in this area and perhaps the most plausible explanation is that nurses' attitudes scores improve as a consequence of their exposure to these clients. It may be contended that working with a single diagnostic group is sufficient to influence attitudes positively.

In regard to stroke rehabilitation it cannot be ignored that for the nurses working in the acute stroke unit there is greater uncertainty. The acute unit admitted medical patients as well as patients following stroke. Of the patients following stroke a number would die, and a number recover spontaneously in addition to the 'middle band' who were subsequently transferred to the stroke rehabilitation unit. In short the nurses in the acute stroke unit would rarely see the influence of rehabilitation in terms of a successful patient outcome. The converse was found on the

stroke rehabilitation unit in that patients were selected on the basis of their potential for a successful outcome, reflecting the so called middle band and as a consequence there was greater certainty over potential and the influence of rehabilitation was seen. In part this may go some way to explaining the improved interprofessional collaboration and communication.

Team working and interprofessional collaboration

Two particular developments were considered to have improved communication amongst team members. Firstly the development of on-ward rehabilitation activities with the location of therapy treatment rooms on the ward area a consequence of which was informal interaction between the various professional groups. This aspect of specialised stroke provision has become a feature of many newly established stroke units and advocated by leading proponents of stroke units, for example, Ellul et al. (1993).

Secondly was the development of team conferences attended by each of the core professional groups. Team conferences have become standard practices but it is not always clear in the literature as to who attends these meetings nor as to what is their specific contribution. The team conference was the event symbolised as the occasion when the team met and formulated decisions about patient management plans.

The findings of this study suggest that patient management plans are formulated outside of the team meetings and the team conference acts to confirm the decisions made. Nearly all decisions concerned discharge arrangements and discussion of alternative interventions or changes to management plans were rarely discussed. The team conference

provided opportunity for the expression of affective statements about the team and as such has a role in enhancing group cohesion and giving a sense of collaboration.

The policy context of health care promotes team working primarily on the basis that no single professional has an adequate skill base. Each profession contributes specialised knowledge and skills and it may be that the amalgam of different professions results in a greater skill base. Getting a team to work requires more than bringing different professional groups together. Each 'player' needs to know what their own unique contribution is, what they can expect of others and what others expect of them in addition to the team contribution. Team work requires effort and energy which must not detract from the endeavour to the patient. It has been observed that football teams practise all week to work together as a team for one match where as health care teams work together all week with no time to practise. The inference being that there is little wonder that health care teams are sometimes less effective than they could be.

Little, if any, time had been given to the teams in this stroke unit to 'practise' team work and an assumption had been made that bringing the different professionals together would result in team work. Co-operation, a low level of collaboration, was clearly evident amongst the teams in each of the wards on the stroke unit but higher levels of collaboration as the norm were challenged by the development of coalitions within the team. That is, team members consulted as sub groups out with the team conference to make decisions concerning patient management. The care delivery system adopted on the unit in this study was primary nursing whereby patients were assigned a named

nurse. The named nurse in principle took lead responsibility for the patients care planning.

The influence of primary nurses was not however evident in the team conferences where the primary nurse contributed little, not least because rarely was more than one primary nurse representing at most five patients present. This reflects the 'real world' where a ward complement of day duty nurses have to cover two shifts per day seven days per week and this challenges the appropriateness of this model of care delivery in the UK.

Nurses in the stroke unit may not be influential in the team conferences but they are undoubtedly influential in care giving. Reed (1993) has previously noted the 'power' nurses have to act as gatekeepers to interventions, but in this Stroke Unit with 'on-ward' therapy and 'blanket' referral the 'power' of the nurse to act in this way was reduced. Changes in the structure and organisation of nursing manpower have emphasised the role of the traditional ward sister/charge nurse as a manager and frequently nurses at this grade are now termed 'ward managers'. The eradication of former profession specific titles has given way to a more general management terminology and it is noteworthy in this study that the role of 'broker' adopted by the ward sister/charge nurse is in keeping with the notion of general management. That is, the ward manager 'chaired' the team conference, and sought information from other team members rather than providing information and actioned the decisions made rather than proposed them. In this sense the nurse 'brokers' information and can exert an influence, consciously or not, on the information flow in terms of amount, direction and timeliness.

The proposals for the management of patients originated most frequently from the physiotherapists and these were seconded or confirmed by the occupational therapists. In this study the medical staff generally did not attend the team conferences and the ward manager acted to report, usually by noting a summary in the patients (medical) records. Decisions made by the team process were not observed to have been overthrown but the right to veto remained with the doctor who sanctioned the decisions. The finding that the decisions of the team, largely based on the proposal by the physiotherapist and seconding by the occupational therapist, were usually enacted suggests that a coalition between the physiotherapist and the doctor had resulted in clinical decisions which the team conference sought only to confirm rather than make.

To a large extent the right of veto of the doctor is traditional in that patients are admitted to and discharged from hospital by a doctor. Whilst there have been some initiatives for 'nursing beds' (Pearson, Durand & Punton 1988) these have not extended into acute care where patient management has been deemed to be the prerogative of the doctor. In the current health care context new and innovative ways of providing services are being considered and evaluated. Health policy is being influenced by an increase in specialisation and technological developments, a need for cost containment and an increase in excess of demand over supply of doctors. The reduction of junior hospital doctors hours is further stretching the available resource.

Reviews have been undertaken in a number of clinical areas and role overlap has been reported between doctors and other professional groups, especially nurses (e.g. Read, 1995). A view has been formulated that some of the activities traditionally carried out by doctors could

equally effectively be undertaken by nurses. Whilst it is not the intention in this chapter to debate the pros and cons of nurses doing the work of doctors in terms of 'tasking' there are sufficient grounds to make a case for a specially trained nurse to work as a nurse clinician in stroke care.

The UKCC's position on the scope of professional practice has provided an opportunity for nurses to equip themselves with greater levels of competence to expand their roles such that they can provide comprehensive health care. In practice this is frequently for specific diagnostic groups of patients e.g. asthma management or rheumatology nurse specialists.

In the case of the stroke unit where agreed protocols for the management of the patient are in place it is not unreasonable to suggest in the contemporary policy context that a nurse clinician act as a case manager for patients admitted to the stroke unit. The availability of medical staff within the directorate would not militate against the clinical autonomy of the nurse but provide an appropriate resource of collegial support. On the admission of doctors interviewed in this study the medical role is primarily one of diagnosis rather than treatment.

The therapeutic role of the nurse in a stroke rehabilitation unit

Patients spend most of their time in the direct care of nurses. The nurses are already, through the ward manager (a nurse) taking the lead in ensuring the patients' management plans are instigated (managerial organisation) and acting to promote self care through exercises and other activities (substituting). Additionally nurses in the stroke rehabilitation unit have developed a therapeutic role by instigating patient activation, motivating patients and providing learning opportunities to facilitate the patient in the acquisition of functional abilities in 'real life' situations.

This can be illustrated by specific acts of nurse led clinical interventions. Patients were motivated by nurses to undertake exercises or other activities taught by the therapists and apply them to situations confronting the patient, such as repositioning themselves, dressing or eating. Patients were encouraged to engage in social interaction including conversation in the day room. This seemingly normal activity requires skilful management as many stroke patients had impaired communication abilities. Additionally many stroke patients experience depression resulting in a tendency to withdraw. Simply 'pushing' a patient to engage in social interaction could exacerbate the depression by giving base to feelings of low self worth. The ability of nurses to encourage patients to join with other patients for meals understates the difficulties that have to be overcome. A number of patients considered the prospect of eating with others as daunting because of reduced motor skills and fear of difficulty in eating or drooling. Nurses appeared to be able to give patients confidence to overcome these fears. This form of intervention undoubtedly contributes to the therapeutic

endeavour and requires subtle interpretations of cues which appear to be gained experientially.

Allowing the patient to take risks appears contrary to traditional nursing roles but if patients are to regain some independence in activities of daily living then some risk taking is inevitable. A common example of such risk taking activity was to allow patients to walk to reach a toilet rather than be 'wheeled' there or use a commode.

Promoting family involvement was referred to by more than one professional group but nurses, often because of their proximity to patients and hours or work, appeared to have greater contact with relatives. Initial contacts with relatives was primarily concerned with information giving and receiving but the interactions evolved to include encouraging relatives to participate in care giving through to teaching relatives about handling and positioning. The nurses would also act as broker between professional groups and relatives to involve the relatives in learning appropriate skills to manage the patient at home from therapists. This educative role is part of the therapeutic endeavour of the nurse and is specifically undertaken to prevent the patient relapsing into a dependent culture once back in the care of a spouse or primary carer. Orem (1991) observed that there is only place for professional nursing if it was greater than that provided in 'normal' family life. This educative role to prevent dependence following discharge from hospital serves to illustrate the need for professional nursing intervention.

Reflecting on the previous classic study of Miller and Gwynne (1974) it may be suggested that the stroke rehabilitation nurses had adopted a 'horticultural model' of care which allowed the patient to grow towards

independence rather than a 'warehousing model' which concentrated on task completion.

Reflections on the nature and scope of rehabilitation

The use of the horticultural model of care delivery (Miller and Gwynne, 1974), especially in the stroke rehabilitation unit setting suggests that the results sought by nurses are improved patient outcomes. That is nurses were aiming for the patients to regain as much independence as possible thus allowing them to return to their pre-stroke domicile with the minimum of support from others. It is, however, noteworthy that the model adopted by the multiprofessional team concentrated on functional outcome and discharge destination. These are the traditional outcome measures of the biomedical approach to rehabilitation and ignore the issues of handicap, the social consequences of illness. It has previously been noted in the literature that the outcomes achieved by patients in stroke units do not reflect an ideal but an acceptable and realistic level of attainment (Lorish 1993).

It has previously been noted that patients tend to measure their outcomes in terms of the social consequences or handicap and hence a gulf is evident between the way professional staff and patients evaluate their outcomes. The rather narrow focus on functional ability and discharge destination may give rise to discontent or unfulfilled expectations. Consumer involvement in health care has been championed and accepted. In this study some evidence of patient involvement was found in terms of patient centred goal setting but the absence of long term goal setting suggests there is some way to go before full consumer involvement is achieved.

Tensions do arise in goal setting as there is the potential for incongruence between the actual circumstances and the patient's subjective perceptions of their circumstance. One consequence of this is that patients are afforded a largely passive role and appear to be willing to be 'done to'. This may be as a consequence of their perceptions of hospital care or it may be that the respondents in this study fell into the 'short term rehabilitation following acute illness' category as defined by Robinson (1988). All patients interviewed in this study had returned to their pre stroke domicile and limited functional loss. The voice of the consumer as a proponent of more active involvement in rehabilitation has been loudest from those with chronic disability. The importance of the consumers' voice is not underestimated.

The interview data suggested that nurses were realistic in their expectation and knew that not all patients would achieve such an outcome. The stroke rehabilitation unit nurses did however consider that the majority of patients should achieve independence and were well aware that, although not directly involved in selection for admission, stroke rehabilitation units concentrate on middle band stroke patients.

A tension does arise in planning patient care in a stroke rehabilitation unit where 'middle band' patients have been selected and the expectation is for a discharge to the pre-stroke domicile. This perpetuates the biomedical model of rehabilitation with its focus on functional ability and discharge destination. There are times when it becomes apparent that discharge 'home' is not going to be an option, at least in the immediacy, because of inability for self care. There was evidence in this study that where promise of self care is shown that protracted periods of in-patient rehabilitation are afforded. This finding is

encouraging as it does suggest that individualised approaches are taken and that time in a stroke unit is not rationed. It does however perpetuate the measure of recovery in terms of functional ability but in some part at least functional ability is a precursor to social ability. Discharge from the unit did not necessarily mean discharge from the hospital and a number of patients continued with rehabilitation in the day hospital.

To some extent it is surprising that nurses did not consider that they should be involved in selection of patients for admission and it appears that they accepted those selected without challenge. The nurses did however report that inappropriate patients were admitted to the unit suggesting that whilst they held an opinion they did not express or choose to express it. It is unclear whether this is a consequence of their lack of confidence or perhaps attributable to historical antecedents. That is, doctors admit patients and nurses care for them. The aims of care were however clear and hence they valued their interventions.

The interview data from therapists suggested that therapists considered nurses as acting as agents of doctors who were always eager to discharge patients as soon as possible to ensure patient flow. This perspective is challenged if the results that nurses seek are improved patient outcomes rather than high throughput. That is, the nurse acting as broker of information could influence the duration of the patient's stay to ensure changes (improvements) in patient outcomes.

The rehabilitation goal setting activity survey suggested that short term goals were concerned with incremental improvement of patients abilities, especially functional abilities but long term goal setting was too inadequately

documented to suggest the results sought by nurses were a return to pre-stroke health status for their patients. Patients however valued their experiences in a stroke unit and believed that it contributed to their recovery. It is axiomatic that the patients had no previous experience against which to measure their present experiences and the expressed value they placed in the unit may simply be gratitude for recovery and a successful outcome, that is, they survived and returned home. The goal of rehabilitation whilst not always explicitly stated was for discharge home and hence those patients who required to be discharged to a nursing home were undoubtedly seen as having a less successful outcome. This notion is vested in the belief that independence is valued and discharge to a nursing home in some way implies a loss of some independence. This study did not follow up patients thus discharged but it is known that some patients who go into nursing homes do subsequently make further gains in independence and hence can return home. This challenges the notion that a nursing home is for life and suggests an area for further study.

Although the patients were not able to compare and contrast stroke unit care with general medical ward care they did provide some useful insights into the processes of care which they considered as valuable. One of the key characteristics of nurses, reported by patients, was their ability to use their clinical judgement to know when to encourage the person to act independently and when to act for them. There may appear to be a fine line between these actions but it may be sufficient to separate satisfaction with the service from dissatisfaction. Further, recognising the 'window of opportunity' for motivating and encouraging may make the difference between gains in independence and early discharge home or the creation of dependence on others. The subtlety of this activity requires further study. As yet it is insufficiently understood to be

expressed or taught to others, for example, primary carers and maybe nurses new to the stroke unit to form the basis of a recommendation. It is known that independence gained in rehabilitation settings in hospital are often lost when patients' return home and this is attributed to over protection on the part of the primary carer. It may be that the primary carer has not learnt how to discriminate between when to act for the patient and when to get the patient to act for themselves.

Theoretical Developments

The nurses' contribution to the multiprofessional team

The historical perspective of the nurses' contribution to rehabilitation as a custodian of care whilst the therapeutic endeavour occurs all around her is challenged by the findings of this study. Insights have been gained into what nurses do and what products and results are sought by nurses. Therapeutic endeavour, the interventions which bring about positive outcomes for patients is built on team working. The team comprises of different professional groups each of which bring unique contributions, and individuals which again bring unique contributions to the processes of rehabilitation.

Differences could be identified between the nurses working on the stroke rehabilitation unit and those working on the acute stroke unit. In part the acute stroke unit retains many of the features of a traditional acute medical ward. Admissions to the ward occur in response to need and take place at any time of the day or night subject to availability of empty beds. Patients admitted are in varying degrees of acuity, severity and with different medical diagnoses. The medical provision is delivered by a range of physicians and junior doctors. In terms of the 18

dedicated beds for patients with acute stroke a range of severity is noted.

The stroke rehabilitation unit exhibits a number of distinguishing features. Firstly all patients share the same medical diagnosis. Whilst stroke is a collective term for a clinical syndrome it inevitably limits the range of presenting problems. In addition to sharing the same medical diagnosis there is less variance in the presenting problems in that all the patients are 'middle band' patients. Medical provision is provided by one consultant physician and two senior house officer grade doctors. The less acute health states of the patients results in less clinical contact that acute stroke unit or general medical ward settings. This alone results in a heightened role for the nurse in terms of providing the management of patient care as well as nursing care. In this sense the nurse is acting as a broker between the doctor and the other team members, such as the therapists. This is a two way process in that therapists were also reporting matters to the nurses to report to the doctors. This may be based on a pragmatic situation in that the doctor knows the nurses will see the therapists and vice versa. What ever the cause the nurse acts as a 'middleman' or 'go between' in information management. The presence of nurses over the 24 hour day also gives rise to the notion of brokerage of information between staff members, staff and patients and staff and relatives. Opportunity does exist for information to transfer directly between one party and another and there was some evidence that greater opportunities would be welcome. For example, the junior doctors sense of frustration at getting information at ward rounds which might be more appropriately comprehensively conveyed directly by a physiotherapist. There was also some evidence of coalitions forming outside the overt channels of communication in particular between the doctor and the

physiotherapist in regard to planned admissions to the stroke rehabilitation unit. It is not clear in this study why a pretence of all information transferring via the nurse was maintained. There is clear benefit in the nurses knowing what is going on, especially as the ward manager, but this does not confirm why the nurse has to act as a broker. The advantages to the nurse as acting as a broker in terms of maintaining some element of power are clear. For the other team members keeping the nurses well informed appears beneficial in terms of continuity of care over a 24 hour seven day week.

The numbers of nurses when compared to the other professions within the team cannot be ignored in terms of the ward climate. The ward climate was identified in the conceptual framework as a key variable in influencing the effectiveness of therapeutic endeavour. There would therefore appear to be some sound sense in ensuring that the nurses not only had an important role to play but also felt important. This is not to imply that the other professional groups overtly sought to patronise the nurses but the possibility of such cannot be ignored. The views of patients would however endorse the value placed on the nurses.

The concept of prescencing is rather vague but this study has provided some insights into what this may be in the context of stroke rehabilitation care. Patients valued the contributions that nurses made and derived satisfaction from there presence. It may be contended that in part the presence of the nurse acted to reassure the patient and provided a potent symbol of caring. That is, the patients felt secure in the knowledge that nurses were there and hence could assume that they were safe and have their needs met. The nurses however had engaged in a form of risk taking behaviour which allowed the patients the opportunity

to learn that taught in rehabilitation sessions with therapy staff. a distinction is being made here between teaching and learning. The time patients spend with the therapists varied according to individual need but averaged around 30 minutes physiotherapy per week day and slightly less time with the occupational therapist. The therapy sessions were determined by the therapist based on individual need and in keeping with the rehabilitation goals. The patients viewed these sessions as 'being taught' to adapt to loss of physical functioning and 'exercises' which would restore physical ability.

The patients viewed the time with nurses as being the time to 'learn' how to adapt. There was some evidence found of nurses engaging in risk taking behaviour. These actions appear to be congruous with the rehabilitation goals set for the patient but militate against the planned interventions. The finding that rehabilitation goals were set for the patient rather than by, supports the notion of tokenism in patient involvement in rehabilitation.

There has been some suggestion that nurses undo the 'good' work done by therapists by not following agreed protocols. Additionally there is a general feeling that goals are achieved by a consistency of approach. These assertions appear to be flawed. The argument appears to be less about what goals are to be achieved and more about how to achieve them. Different educational preparation and occupational socialisation between the professions is evident and hence the values and beliefs underpinning the philosophies of care are at variance. Much has yet to be learnt about rehabilitation approaches in stroke care in terms of amount, duration and 'type'. It is however known that patient evaluate their outcomes in social terms rather than biomedical. Patients are more concerned as to whether they can do a particular act rather than the quality of that

act. To this end there appears to be a learning window when a patient feels that they want to test their abilities and challenge themselves. The nurses on the stroke rehabilitation unit appear to have recognised this learning window and allow patient to engage in risk taking behaviour. The role of the nurse therefore can be expressed as one of care manager, care giver and risk taker.

Interprofessional collaboration

The notion to team work has been argued as central to the therapeutic endeavour in stroke rehabilitation. Teamwork requires different professional groups to unite in a common cause and individuals within professional groups to share a common purpose. Each of the professional groups in this study has been socialised into a particular role and the clinical area of rehabilitation is only one area amongst many that each professional group has been socialised in.

Rehabilitation as a clinical speciality is in its infancy and there are many different types of rehabilitation settings. Stroke rehabilitation units are relatively new organisational arrangements and as such few practitioners have had experiential knowledge of working in such units. None of the respondents in this study had previous experience of working in a stroke unit rehabilitation unit and in effect the team was drawn from the existing staff present at the time of formation. It was noted that junior hospital doctors and some therapy staff were on rotational posts and as such may not have seen themselves as 'full team members'.

It was contended in this study that interprofessional collaboration required some understanding of the individual's contribution and what that individual expected of others. The conceptual framework guiding the study

provided for the collection of data on team climate, interprofessional collaboration, role expectation of self and others. Many encouraging findings were made including realistic expectations of others. a willingness to work in a team, an understanding that interprofessional collaboration is greater than co-operation, the need for a shared understanding of patients' rehabilitation goals. These positive findings should not however mask some of the difficulties encountered. Amongst these difficulties were frustrations about how others have been prepared for their role in rehabilitation settings and these have to be set against the backdrop of individuals valuing themselves more highly than others and their profession more highly than other professional groups.

It is not surprising to find some discord as a consequence of this feature as each professional group strives to emphasise their own unique contribution (sic, valuable) which has the effect of devaluing, either intentionally or unintentionally, the work of others. It is perhaps self evident that in a team all players wish to be valued and whilst recognising that each player has a different role the ultimate success of the team is best achieved when all players work to the same ends. The team climate inventory findings suggested a lack of a clear shared vision and again this is perhaps unsurprising. The team was brought together and expected to work without any preparation for team working. That is, it was taken for granted that different professional groups would unite towards a common cause simply by bringing them together. The folly of this simple premise has already been noted. There was also some discord evident in communication channels with coalitions forming. The purpose of these coalitions appeared to be concerned with a pragmatic solution to effective working as perceived by the individual, rather than to usurp team working.

It is reasonable therefore to conclude that the rhetoric of teamwork was more established than the reality. The team can therefore best be conceptualised as a team in evolution. The rhetoric of team work, using the language and engaging in behaviours which promote teamwork were acting in some way to facilitate internalisation of the values and beliefs of teamwork. It is contended that within the paradigm of occupational socialisation internalisation is a necessary precursor to teamwork in reality.

Conclusions

The aims of this study were to examine the context in which stroke rehabilitation occurs with particular emphasis on the contribution of the nurse to the multi disciplinary team. The theoretical framework guiding the study located therapeutic endeavour as the central concern and this was conceptualised as being based on team working. The premise underpinning the notion of team working was that no single profession had all the necessary abilities to meet the needs of this client group alone. Team working was conceptualised as being composed of individual contributions and shared contributions of different professional groups. The views of service users, patients who had experience of stroke unit care and returned to their pre stroke domicile were also solicited.

All the patients interviewed in this study had made a good recovery and attributed much of this to the therapeutic endeavour of the rehabilitation team. They had few complaints but many did express a view that they would have liked more therapy. The assumption being that the more therapy they received then the more progress they would have made or the quicker they would have made it. Whilst it is difficult to contradict this perception there is as yet

PAGE MISSING IN ORIGINAL

associated with 'expert' nurses and perhaps provide some definition of what is meant by 'prescencing'.

Inevitably stroke units will be established and processes vary between one unit and another. The findings of this study would however suggest that staff be selected and prepared to work in a specialised unit. This preparation should include specific clinical updating about the nature and consequences of stroke including the principles and practices of stroke care. Specific preparation need to be given concerning team working such that each profession knows what its own contribution is, what they can expect from others and what can be expected of them. Opportunities for shared learning during initial professional preparation should be explored as this could lead to greater understanding of role performance. The climate of the stroke unit must provide for support for innovation and creativity and be enacted rather than simply expressed support. Team working requires a greater level of collaboration than co-operation and much of this could be operationalised through greater levels of multiprofessional team rehabilitation goal planning. The rhetoric of team work needs to evolve into the reality of team work.

The emerging role of the nurse as providing an input which confers positive outcomes for patients i.e. a therapeutic role rather than being a custodian requires nurturing. Nurses need to gain confidence in articulating their role such that they and others know what is their unique contribution to the stroke rehabilitation team. The current climate is ripe for innovation and the development of nurse clinicians in the area of stroke care.

Recommendations for further research

1 To undertake a replication of the study in other stroke units which could lead to verification of findings notwithstanding the temporal nature of such units.

2 To undertake a literature review not based on an *a priori* definition of stroke rehabilitation which might lead to new insights less narrowly focused on a 'biomedical' model of rehabilitation.

3. To use the Team Observation Protocol in other settings and to contrast the findings of this survey instrument with alternative approaches e.g. participant observation. It is further recommended that a study of interprofessional collaboration of case conferences and working practices be undertaken.

4 To undertake further studies using the Team Climate Inventory in other rehabilitation settings to establish norms for these environments.

5 To further explore staff attitudes towards stroke rehabilitation.

6 To undertake further surveys of documentary records to test the utility of the instrument designed for use in this study.

7 To undertake a follow up study of patients discharged to nursing homes from hospital.

8 To further explore the therapeutic activity of the nurse especially in regard to their identification of

the 'windows of opportunity' for gains in independence.

References

Acheson D (1990) Address given to the Society for Research in Rehabilitation. June 1990. Oxford.

Alexander M P (1994) Stroke Rehabilitation Outcome; a potential use of predictive variables to establish levels of care *Stroke* **25(1)**:128-34

Anderson N & West M (1994) *Team Climate Inventory: Manual and User's guide* NFER-Nelson. Windsor.

Anderson R (1992) *The Aftermath of Stroke* Cambridge University Press. Cambridge.

Anderson T P (1990) Studies up to 1980 on Stroke Rehabilitation Outcomes *Stroke* **21(suppl II)**:II-43-II-45

Andrews K & Stewart J (1979) Stroke recovery: he can but does he? *Rheumatology and Rehabilitation* **18**:43-48

Armstrong D (1983) *An outline of Sociology as applied to Medicine* Wright PSG. Bristol

Athlone (Chairman- Inter-Departmental Committee on Nursing Services) (1938) HMSO. London.

Atkinson P & Hammersley M (1994) Ethnography and participant observation. In Denzin N & Lincoln Y (Eds.) *Handbook of Qualitative Research.* Sage. California.

Barer D H (1989) Continence after stroke: Useful predictor

or goal of therapy *Age and Ageing* **18**:183-191

Barer D H (1990) Stroke rehabilitation; panacea or placebo *Geriatric medicine* **20**(9):45-49 (part 1)

Beland I & Passos J (1981) *Clinical Nursing: pathophysiological and psychosocial approaches.* MacMillan. Basingstoke.

Benner P (1984) *From Novice to Expert* Addison Wesley. California

Benner P & Wrubel J (1989) *The Primacy of Caring.* Addison-Wesley. California.

Bergman R (1981) Accountability - definitions and dimensions *International Nursing Review* **28(2)**:53-59

Birch J A (1975) *To nurse or not to nurse* Royal College of Nursing. London.

Boud D & Feletti G (1991) *The Challenge of problem Based Learning* Kogan Page. London

Brandstater M E (1990) An overview of stroke rehabilitation *Stroke* **21 (supplement II) II-40-II42**

Briggs A (1972) (Chairman - Report of the Committee on Nursing) HMSO. London.

Brocklehurst J C (1978) *Textbook of Geriatric Medicine and Gerontology* (2nd edn.) Churchill Livingstone. Edinburgh.

Brunning H & Huffington C (1985) Altered Images *Nursing Times* **81(31)**: 24-27

Carr L T (1994) The strengths and weaknesses of quantitative and qualitative research: what method for nursing? *Journal of Advanced Nursing* **20**:716-720

Cartlidge A, Bond J & Gregson B (1987) Interprofessional Collaboration in Primary Health Care *Nursing Times* **83(46)**:45-48 Occasional Paper

Chadwick R & Russell J (1988) Hospital discharge of frail elderly people: social and ethical considerations in the discharge decision making process. *Ageing and Society* **9**:277-295

Chalmers I & Altman D G (1995) *Systematic Reviews* BMJ Publishing Group. London.

Clark A K (1988) Physical Disability in 1986 and Beyond: a review of the RCP report. *British Journal of Occupational Therapy* **51(4)**:127-128

Closs S J & Tierney A J (1993) The complexities of using a structure, process and outcome framework: the case of an evaluation of discharge planning for elderly patients *Journal of Advanced Nursing* **18**:1279-1287

Cormack D F S (1991) *The Research Process in Nursing (2nd edn)* Blackwell Scientific Publications. Oxford.

Corner J (1991) In search of more complete answers to research questions. Quantitative versus

qualitative research methods: is there a way forward *Journal of Advanced Nursing* **16**:718-727

Cox B G (1973) *Care and Rehabilitation of the Stroke Patient*. Charles C Thomas. Illinois.

Davis A, Davis S, Moss N, Marks J, McGrath J, Hovard L, Axon J & Wade D (1992) First steps towards an interdisciplinary approach to rehabilitation *Clinical Rehabilitation* **6**:237-244

Dean D J (1987) *Manpower Solutions* Scutari Projects. Harrow

Department of Health (1989) *A Strategy for Nursing* HMSO. London.

Department of Health (1990) *NHS and Community Care Act* HMSO. London.

Department of Health (1991) *Research for Health. A Research and Development Strategy for the NHS* HMSO. London.

Department of Health (1992) *Health of the Nation: a strategy for health in England* (Cm1986) HMSO. London.

De Pedro-Cuesta J, Widen-Holmqvist L, & Bach-y-Rita P(1993) Evaluation of stroke rehabilitation by randomised controlled studies: a review *Acta Neurologica Scandanavia* **86**:433-439

Dombovy M L, Sandok B A & Basford J R (1986) Rehabilitation for Stroke; a review *Stroke* **17(3)**:363-369

Donabedian A (1969) Quality of Care: problems of measurement. Part II Some issues of evaluating the quality of nursing care. *American Journal of Public Health* **59**:1833-1836

Donabedian A (1980) *The definition of Quality and Approaches to its assessment.* Health Administration Press. Michigan.

Dromerick A & Reding M (1994) Medical and neurological complications during inpatient stroke rehabilitation *Stroke* **25(2)**:358-361

Ducanis A J & Golin A K (1979) *The Interdisciplinary Health Care Team: a handbook.* Aspen Systems Corporation. Maryland.

Duncan G, Ritchie L C, Jamieson D M & McLean M A (1995) Acute stroke in South Ayrshire: Comparative study of pre and post stroke units *Health Bulletin* **53(3)**:159-166

Eason R (1995) Stroke rehabilitation in South Aukland; the value of an effective rehabilitation unit *New Zealand Medical Journal* **108(1004)**:289-291

Ee C H, Kwan P E & Tan E S (1991) Stroke Rehabilitation of Elderly Patients in Singapore *Singapore Medical Journal* 32(1):55-60

Ellul J, Watkins C, Ferguson N & Barer D (1993) Increasing patient engagement in rehabilitation activities. *Clinical Rehabilitation* 7:297-302

Endres M, Nyary I, Banhidi M & Deak G (1990) Stroke rehabilitation: a method and evaluation *International Journal of Rehabilitation Research* **13**:225-236

Ernst E (1990) A review of stroke rehabilitation and physiotherapy *Stroke* **21(7)**:1081-1085

Evans R L, Bishop D S & Haselkorn J K (1991) Factors predicting satisfactory home care after stroke *Archives of Physical Medicine and Rehabilitation* **72**:144-147

Evans R L, Hendricks R D, Haselhorn J K, Bishop D S & Baldwin D (1992) The family's role in stroke rehabilitation: a review of the literature *American Journal of Physical Medicine and Rehabilitation* **71**:135-139

Evans R L, Connis R T, Bishop D S, Hendricks R D & Haselkorn (1994) Stroke: a family dilemma *Disability and Rehabilitation* **16(3)**:110-118

Falconer J A, Haughton B J, Dunlop D D, Roth E J, Strasser D C & Sinacore J M (1994) Predicting stroke inpatient rehabilitation outcome using a classification tree approach *Archives of Physical Medicine and Rehabilitation* **75(6)**:619-625

Field P A (1981) A phenomenological look at giving an injection *Journal of Advanced Nursing* **6(7)**:291-296

Field P A & Morse J M (1985) *Nursing Research: The application of qualitative approaches.* Croom Helm. London.

Folden S L (1993) Effect of a Supportive-Educative nursing intervention on older adults' perception of self care after stroke *Rehabilitation Nursing* **18(3)**:162-167

Forbes E J & Fitzsimons V (1993) Education: The key for holistic interdisciplinary collaboration *Holistic Nursing Practice* **7(4)**:1-10

Forster A & Young J (1996) Specialist nurse support for patients with stroke in the community: a randomised controlled trial. *British Medical Journal* **312**:1642-1646

Fox D J (1982) *Fundamentals of Nursing Research* (4th Edn) Appleton Century Crofts. Norwell.

Freidson E (1975) *Profession of Medicine: a study of the sociology of applied knowledge.* Dodd, Mead and Company. New York

Fried B J & Leatt P (1986) Role perception among Occupational Groups in an Ambulatory Care Setting *Human Relations* **39(12)**:1155-1174

Friedman P J (1990) Stroke rehabilitation in the elderly: a new patient management system *New Zealand Medical Journal* **103(890)**:234-236

Fielding P A & Morse J M (1985) *Nursing Research: The*

application of qualitative approaches. Croom Helm. London.

Garraway W M, Akhtar A J, Prescott R J, & Hockey L (1980a) Management of acute stroke in the elderly: preliminary results of a controlled trial. *British Medical Journal* **280**:1040-1043

Garraway W M, Akhtar A J, Hockey L, & Prescott R J (1980b) Management of acute stroke in the elderley: follow-up of a controlled trial. *British Medical Journal* **281**:827-829

Gibbon B (1991) A reassessment of nurses' attitudes towards stroke patients in general medical wards *Journal of Advanced Nursing* **16**:1336-1342

Gibbon B (1993) Implications for nurses in approaches to the management of stroke rehabilitation; a review of the literature *International Journal of Nursing Studies* **30(2)**:133-141

Gibbon B, Watkins C L, Downs-Grainger E & Barer D H (1993) Multidisciplinary Team Rehabilitation: Reality or Myth? Cl*inical Rehabilitation* **8**:90 Conference paper Summer 1993 Dundee

Gibbon B (1994) Stroke nursing care and management in the community: a survey of district nurses' perceived contribution on one health district in England *Journal of Advanced Nursing* **20**:469-476

Gibbon B & Little V (1995) Improving stroke care through action research *Journal of Clinical Nursing*

4:93-100

Gilbert N (Ed) (1993) *Researching Social Life* Sage Publications. London.

Gladman J R F, Harwood D M J & Barer D H (1992) Predicting the outcome of acute stroke: prospective evaluation of five multivariate models and comparison with simple methods *Journal of Neurology Neurosurgery and Psychiatry* **55**:347-351

Gladman J, Barer D & Langhorne P (1996) Specialist rehabilitation after stroke *British Medical Journal* **312**:1623-1624

Glaser B G & Strauss A L (1967) *Discovery of Grounded Theory - strategies for qualitative research.* Aldine Publishing Co. Chicago.

Gold R L (1958) Roles in Sociological field observations *Social Forces* **36**:217-223

Granger C V, Hamilton B B & Fiedler R C (1992) Discharge outcome after stroke rehabilitation *Stroke* **23(7)**:978-982

Griffiths J M & Luker K A (1994) Intraprofessional teamwork in district nursing: in whose interest? *Journal of Advanced Nursing* **20**:1038-1045

Griffiths J M (1996) *An ethnographic study of District Nursing work* unpublished thesis. University of Liverpool.

Hamrin E (1982) Attitudes of Nursing Staff in general medical wards towards activation of stroke patients. *Journal of Advanced Nursing* **7**:33-42

Harris J M (1990) Stroke Rehabilitation; Has it proven worthwhile? *Journal of the Florida Medical Association* **77(7)**:683-686

Hartweg D L (1991) *Dorothea Orem; Self Care Deficit Theory.* Sage. London.

Henderson V (1966) *The Nature of Nursing* McMillan London

Henderson E J, Morrison J A, Young E A & Pentland B (1990) The nurse in rehabilitation after sever brain injury *Clinical Rehabilitation* **4**:167-172

Hodkinson H M (1972) Evaluation of a mental test score for the assessment of mental impairment in the elderly *Age and Ageing* **1**:233-238

Holbrook M & Skilbeck L E (1983) An activities index for use with stroke patients *Age and Ageing* **12**:166-170

Hudgings C (1995) Guideline development and dissemination programme:agency for Health Care Policy and Research In Deighen M & Hitch S (1995) *Clinical Effectiveness from Guidelines to Cost Effective Practice* Earlybrave Publications. Essex.

Indredavik B, Bakke F, Solberg R, Rokseth R, Haaheim LL & Holme I (1991) Benefits of a Stroke Unit: A randomised controlled trial. *Stroke* **22**(8):1026-1031

Iles PA & Auluck R (1990) From organisational to interorganisational development in nursing practice: improving the effectiveness of interdisciplinary teamwork and interagency collaboration *Journal of Advanced Nursing* **15**:50-58

Jeffery D R & Good D C (1995) Rehabilitation of the Stroke Patient *Current Opinion in Neurology* **8**:62-68

Johnson R L (1989) Orem's Self Care model of nursing in Fitzpatrick J and Whall A (Eds) (1989) *Conceptual Models of Nursing: Analysis and Application* Appleton and Lange. Norwalk

Jorgensen H S, Nayayama H, Raaschou H O, Vive-Larsen J, Stoier M & Olsen T S (1995) Outcome and time course of recovery in stroke. Part I: Outcome; Part II Time course of recovery. The Copenhagen Stroke Study *Archives of Physical Medicine and Rehabilitation* **76(5)**:399-405,406-412

Joyce B & Weil M (1986) *Models of Teaching* Prentice Hall. London

Kalra L, Dale P & Crome P (1993) Improving stroke rehabilitation: a controlled study *Stroke* **24(10)**:1462-1467

Kalra L & Crome P (1993) The role of prognostic scores in targeting stroke rehabilitation in Elderly patients *Journal of the American Geriatrics Society* **41**:396-400

Kalra L, Smith D H & Crome P (1993) Stroke in patients aged over 75 years; outcome and predictors *Postgraduate Medical Journal* **69**:33-36

Kalra L & Fowle A J (1994) An integrated system for multidisciplinary assessments in stroke rehabilitation *Stroke* **25(11)**:2210-2214

Kalra L (1994) The influence of stroke unit rehabilitation on functional recovery from stroke *Stroke* **25(4)**:821-825

Kalra L & Eade J (1995) Role of stroke rehabilitation units in managing severe disability after stroke *Stroke* **26(11)**:2031-2034

Kaufman S R & Becker G (1986) Stroke: health care on the periphery *Social Science and Medicine* **22**:983-989

Kieth R A, Granger C V, Hamilton B B & Sherwin F S (1987) The Functional Independence Measure: a new tool for rehabilitation In Eisenburg M G, Grzesiak R C (Eds.) *Advances in Clinical Rehabilitation* Vol. 2. Springer. New York

Kings Fund Forum (1988) *The treatment of Stroke: a King's Fund Forum consensus statement.* Kings Fund Centre. London

Knipschild P (1995) Some Examples of Systematic Reviews in Chalmers I & Altman D G (1995) *Systematic Reviews* BMJ Publishing Group. London.

Kratz C R (1978) *Care of the Long term Sick in the*

Community. Churchill Livingstone, Edinburgh.

Laidler P (1994) *Stroke Rehabilitation: Structure and Strategy*. Chapman Hall. London.

Langhorne P, Williams B O, Gilchrist W & Howie K (1993) Do stroke units save lives? *Lancet* **342(8868)**:395-398

Langhorne P (for the Stroke Unit Trialists Collaboration) (1997) Collaborative systematic review of the randomised trials or organised inpatient (stroke unit) care after stroke *British Medical Journal* **314**:1151-1159

Langton-Hewer R (1990) Outcome measures in stroke; a British view *Stroke* **21(suppl II)**:II-52-II-55

LaPiere R (1934) Attitudes versus actions *Social Forces* **13**:230-237

Leininger M (1994) Evaluation criteria and critique of qualitative research in Morse J M (Ed) *Qualitative Research Methods* Sage. California.

Lewinter M & Mikkelsen S (1995) Therapists and the rehabilitation process after stroke *Disability and Rehabilitation* **17(5)**:211-216

Lorish T (1993) Stroke Rehabilitation *Clinics in Geriatric Medicine* **9(4)**:705-716

Lubbock G (Ed.) (1983) *Stroke Care: an interdisciplinary approach* Faber. London.

McEwen M (1994) Promoting Interdisciplinary Collaboration *Nursing and Health Care* **15(6)**:304-307

McGrath J R & Davis A M (1992) Rehabilitation: where are we going and how do we get there? *Clinical Rehabilitation* **6**:225-235

McMahon R & Pearson A (Eds) (1991) *Nursing as Therapy* Chapman and Hall. London.

McMillan Report (1973) *Report by DHSS working party on the remedial professions.* HMSO. London.

Mahoney F I & Barthel D W (1965) Functional evaluation: the Barthel Index. *Maryland State Medical Journal* **14**:61-65

Mariano C (1989) The Case for Interdisciplinary Collaboration *Nursing Outlook* **37(6)**:285-288

Marram G & Barrett M W (1979) *Primary Nursing: a model for individualised care.* Mosby. St Louis

Marsden S (1996) Letter *Professional Nurse* **12(1)**:5

Mayberry J & Kent S V (1983) Recent Progress in cardiac nursing and rehabilitation programmes *Journal of Advanced Nursing* **8**:329-333

Melia K M (1984) Student nurses' construction of occupational socialisation *Sociology of Health and Illness* **6(2)**:132-151

Miles M B & Huberman A M (1994) *Qualitative Data Analysis:*

an expanded sourcebook 2nd edn. Sage. London.

Miller E J & Gwynne G V (1974) *A Life Apart* Tavistock. London.

Moos R H (1986) *Work Environment Scale Manual* 2nd Edition Consulting Psychologists Press.Palo Alto California.

Moser C A & Kalton G G W (1985) *Survey Methods in Social Investigation*. Gower. Aldershot.

Mullins L L, Keller J R & Chaney J M (1994) A systems and cognitive functioning approach to team functioning in physical rehabilitation settings *Rehabilitation Psychology* **39(3)**:161-178

Mulrow C D (1995) Rationale for Systematic Reviews in Chalmers I & Altman D G (1995) *Systematic Reviews* BMJ Publishing Group. London.

Myco F (1984) Stroke and its rehabilitation:the perceived role of the nurse in the medical and nursing literature. *Journal of Advanced Nursing* **9**:429-439

NHS Executive (1994) *The Patient's Charter: The Named Nurse, Midwife and Health Visitor* Patients Charter Unit and Nursing Directorate, London

O'Connor S E (1993) Nursing and rehabilitation; the interventions of nurses in stroke patient care *Journal of Clinical Nursing* **2**:29-34

Orem D E (1971) *Nursing: Concepts of Practice* McGraw Hill.

New York

Orem D E (1991) *Nursing: Concepts of Practice* 4th Edn. Mosby Year Book. St Louis

Oszkowski W J & Barreca S (1993) The functional independence measure: its use to identify rehabilitation needs in stroke survivors *Archives of Physical Medicine and Rehabilitation* **74(12)**:1291-1294

Osberg J S, Haley S M, McGinnis G E & DeJong G (1990) Characteristics of cost outliers who did not benefit from stroke rehabilitation *American Journal of Physical Medicine and Rehabilitation* **69(3)**:117-125

Ottenbacher K J & Jannell S (1993) The results of clinical trials in Stroke Rehabilitation research *Archives of Neurology* **50**:37-44

Ovretveit J (1994) *Co-ordinating Community Care: Multidisciplinary teams and care management* Open University Press. Buckingham.

Pearson A, Durand I & Punton S (1988) *Therapeutic Nursing: an evaluation of an experimental nursing unit in the British NHS* Burford and Oxford Nursing Development Units. Oxford

Pearson A & Vaughan B (1989) *Nursing Models for Nursing Practice* Heinneman. Oxford

Pearson P H (1983) The interdisciplinary Team process or

the professionals Tower of Babel *Developmental Medicine and Child Neurology* **25(3)**:390-395.

Phillips Report (1954) *Report of the Committee on the Economic and Financial Problems of the Provision for Old Age* Cmnd.933 HMSO. London

Piercy Report (1956) *DHSS report of the committee of enquiry on the rehabilitation, training and resettlement of disabled persons.* HMSO. London

Platt (Chairman- A Reform of Nurse Education) (1959) Royal College of Nursing. London.

Polgar S & Thomas S A (1995) *Introduction to Research in the Health Sciences (3rd edn.)* Churchill Livingstone. Melbourne.

Prescott R J, Garraway W M & Akhtar A J (1982) Predicting Functional Outcome following acute stroke using a standard clinical examination *Stroke* **13**:641-647

Pryor G A & Williams D R R (1988) Rehabilitation after hip fractures. Home and hospital management combined *Journal of Bone and Joint Surgery* **71-B**:471-474

Ragsdale D, Yarbrough S & Lasher A T (1993) Using social support theory to care for CVA patients *Rehabilitation Nursing* **18(3)**:154-172

Ray R & Nair A (1991) The elderly reach independence through a community stroke rehabilitation programme. *Annals Academy of Medicine*

(Singapore) **20(3)**:314-323

Read S (1995) *Catching the tide: new voyages in nursing?* Sheffield Centre for Health and Related Research (Occasional Paper No.1) Sheffield

Reed J (1993) The relationship between semi-professions in acute and long-term care of elderly patients. *Journal of Clinical Nursing* **2**:81-87

Reed J & Proctor S (1995) *Practitioner Research in Health Care: the inside story.* Chapman Hall. London.

Reichers A E & Schneider B (1990) Climate and Culture: an evolution of constructs in Schneider B (Ed.) *Organisational Climate and Culture* Jossey Bass. San Francisco

Robinson I (1988) Rehabilitation of Long Term Physical Impairments: The social context of professional roles. *Clinical Rehabilitation* **2**:339-347

Rolfe G (1994) Towards a new model of nursing research *Journal of Advanced Nursing* **19**:969-975

Roper N Logan W W and Tierney A J (1985) *The Elements of Nursing.* Churchill Livingstone. Edinburgh.

Rosenburg W & Donald A (1995) Evidenced based medicine: an approach to clinical problem solving *British Medical Journal* **310**:1122-1126

Royal Commission on the National Health Service Report (1979) (Chairman Sir Alec Merrison) HMSO.

London.

Sackett D L, Haynes R B, Guyatt G H & Tugwell P (1995) *Clinical Epidemiology: a basic science for clinical medicine* Little Brown and Company. Boston.

Sackett D & Rosenburg W (1995) Evidence Based Medicine and guidelines In Deighen M & Hitch S (1995) *Clinical Effectiveness from Guidelines to Cost Effective Practice* Earlybrave Publications. Essex.

Sackett D L, Richardson W S, Rosenburg W & Haynes R B (1997) *Evidence-based Medicine: How to practice and teach EBM* Churchill Livingstone. London.

Schatzman L & Strauss A (1973) *Field Research: Strategies for a natural sociology.* Prentice Hall. Englewood Cliffs, New Jersey.

Shah S, Vanclay F & Cooper B (1990) Efficiency, effectiveness, and duration of stroke rehabilitation *Stroke* **2(12)**:241-246

Shah S, Vanclay F & Cooper B (1991) Stroke rehabilitation: Australian patient profile and functional outcome *Journal of Clinical Epidemiology* **44(1)**:21-28

Siegel S & Castellan N J (1988) *Nonparametric Statistics* McGraw Hill. New York

Silverman D (1993) *Interpreting qualitative data* Sage. London.

Smith D S (1990) Outcome studies in Stroke rehabilitation: the south Australian stroke study *Stroke* **21(suppl II)**:II-56-II-58)

Smith H W (1975) *Strategies of Social Research: The Methodological Imagination.* Prentice Hall. Englewood Cliffs, New Jersey.

Speach D P & Dombovy M L (1995) Recovery from stroke: rehabilitation *Bailliere's Clinical Neurology* **4(2)**:317-338

Stevens Barnum B J (1994) *Nursing Theory: Analysis, Application, Evaluation* 4th Edn. J B Lippincott. Philadelphia.

Stevens R S, Ambler N R,& Warren M D (1984) A randomised controlled trial of a stroke rehabilitation ward. *Age and Ageing* **13**:65-75

Stevens R S & Isaacs B (1984) Stroke Rehabilitation Units in the United Kingdom. *Health Trends* **16**:61-63

Strasser D C , Falconer J A & Martino-Saltzmann D (1994) The Rehabilitation Team: Staff perspectives of the hospital environment, and interprofessional relations *Archives of Physical Medicine and Rehabilitation* **75**:177-182

Strauss A & Corbin J (1990) *Basics of qualitative research* Sage. California.

Stroke Unit Trialist's Collaboration (1995) *A systematic*

Review of Specialist multidisciplinary team (stroke unit) care for stroke inpatients'The Cochrane Database of Systematic Reviews. Issue 1

Stryker R P (1972) *Rehabilitative aspects of acute and chronic nursing care.* W .B Saunders. Philadelphia

Tallis R (1989) Measurement and the future of rehabilitation. *Geriatric Medicine* **19**:31-40

Tinson D J (1989) How stroke patients spend their days. *International Disability Studies* **11**:45-49

Tunbridge Report (1972) *Report of a sub-committee of the standing medical advisory committee on Rehabilitation.* HMSO. London

Turner A (1981) (Ed) *The principles of the activities of daily living in the practice of Occupational Therapy* Churchill Livingstone. Edinburgh.

Turnulf Nyhlin K (1990) A contribution of qualitative research to a better understanding of diabetic patients. *Journal of Advanced Nursing* **15**:796-803

United Kingdom Central Council (1995) *Post Registration Education and Practice* United Kingdom Central Council. London.

Victor C & Vetter (1988) Rearranging the deckchairs on the Titanic; Failure of an augmented home help scheme after discharge to reduce the length of stay in hospital *Archives of Gerontology and*

Geriatrics **7**:83-91

Wade D (1989) Organisation of Stroke Care services. *Clinical Rehabilitation* **3**:227-233

Wade D T (1993) Is stroke rehabilitation worthwhile? *Current Opinion in Neurology and Neurosurgery* **6**:78-82

Walley H M L (1986) *Ward Sisters' Concept of Rehabilitation* Unpublished MSc dissertation. University of Southampton.

Walsh M (1991) *Models in Clinical Nursing: the way forward* Bailliere Tindall. London

Waters K R (1986) The role of the nursing in rehabilitation *CARE- Science and Practice* **5(3)**:17-21

Waters K R (1991) *The role of the nurse in the rehabilitation of elderly people in hospital* Unpublished PhD Thesis. University of Manchester

Waters K R & Luker K A (1996) Staff perspectives on the role of the nurse in rehabilitation wards for elderly people *Journal of Clinical Nursing* 5:105-114

Watkins C L, Gibbon B, Downes-Grainger E C & Barer D H (1993)Nurses and community rehabilitation: a missed opportunity? *Society for Research in Rehabilitation* Conference paper Summer 1993 Dundee

West M A (1990) The social psychology of group innovation

in West M A & Farr J L (Eds.) *Innovation and Creativity at Work: Psychological and Organisational Strategies* John Wiley & Sons. Chichester.

Wilson D B, Houle D M & Keith R A (1991) Stroke Rehabilitation: a model predicting return home *Western Journal of Medicine* **154**:587-590

World Health Organisation (1971) Cerebrovascular diseases - prevention, treatment and rehabilitation, Technical Report Service No. 469. WHO

Wright S (1991) Facilitating therapeutic nursing and independent practice in Mc Mahon R & Pearson A (Eds) *(1991)Nursing as Therapy.* Chapman and Hall. London.

Yin R K (1989) *Case Study Research: Design and Methods* Newbury Park California. Sage.

Yin R K (1993) *Applications of Case Study Research* Newbury Park California. Sage.

Yura H & Walsh M B (1978) *The Nursing Process* Appleton Century Crofts. New York

Zander K (1988) Nursing Case Management: strategic management of cost and quality outcomes *Journal of Nursing Administration* **18(5)**:23-30

Appendices

Appendix 1

Initial Staff Interview Guide

INTERPROFESSIONAL COLLABORATION IN STROKE REHABILITATION

Interview schedule - Professional Staff

Pre-amble

I have been involved in a number of research projects concerned with stroke rehabilitation and with this particular project I am seeking to determine how members of the interdisciplinary team work together.

In order to provide a context for the information I collect I am interested in obtaining a profile of rehabilitation staff, and of the team, together with a sketch of the environment in which the team operates.

I should be grateful if you would respond to the following questions.

All information will be treated with the strictest confidence.

Thank you for your assistance.

A few questions about yourself

1] Please indicate your gender;

Male ☐ Female ☐

2] Please indicate your age band:

Less than 21 years ☐
Between 21 and 30 years ☐
Between 31 and 40 years ☐
Between 41 and 50 years ☐
Between 51 and 60 years ☐
Greater than 60 years ☐

3] Please indicate your discipline:

Nurse ☐
Physiotherapist ☐
Occupational Therapist ☐
Speech and Language Therapist ☐

4] Please indicate the academic level of your basic training leading to registration (where appropriate)

Certificate ☐
Diploma ☐
Degree (Bachelor) ☐

5] Please indicate how long you have been qualified:

Less than 1 year	☐
Between 1 and 3 years	☐
Between 4 and 6 years	☐
Between 7 and 9 years	☐
More than 10 years	☐

6] Please itemise any additional PROFESSIONAL qualifications you have gained since completing your basic training:

a).....
b).....
c).....
d).....
e).....

7] Please indicate any additional ACADEMIC qualifications you have gained since completing your basic training:

Certificate	☐
Diploma	☐
Bachelor Degree	☐
Masters Degree (Taught)	☐
Masters Degree (Research)	☐
Doctorate	☐

A few questions about your professional career

8] What factors influenced your original career choice ?

9] What factors influenced you to choose rehabilitation ?

10] How many previous rehabilitation posts have you held ?

None	☐
1	☐
2	☐
3	☐
4	☐
5	☐
>5	☐

11] Which,in any,professional organisations do you belong to ?

12] Which, if any, professional or rehabilitation societies do you belong to ? (are they discipline specific ?)

13] Which, if any, professional publications do you regularly read (are they discipline specific ?)

About the Rehabilitation Team

14] Who do you regard as members of the stroke rehabilitation team ?

15] What are your views on a team approach to stroke rehabilitation ?

16] What do you regard as the specific contribution of your particular discipline to stroke rehabilitation within the team ?

17] What are your expectations of the contribution to be made by other team members ?

18] To what extent do you expect other team members to understand your input ?

19] Do you think other team members understand and appreciate the individual contributions made by each discipline ?

20] To what extent do you feel there is a need to collaborate?

21] To what extent do you feel team members want to collaborate ?

22] What arrangements are in place to assist the team in working together ?

23] What do you see as barriers to the team working together?

A few questions about the rehabilitation setting

24] What arrangements are in place regarding the referral of the patient to the rehabilitation team ?

25] Tell me about the location(s) where the bulk of stroke rehabilitation takes place ?
(Prompt:does this resource facilitate rehabilitation by the team ? Is the stroke rehabilitation area appropriate for both individual and group activation activities ?)

26] In situations where rehabilitation activities take place outside the rehabilitation area what mechanisms are in place to ensure that the rehabilitation plan is followed ?

27] Is a particular approach to stroke rehabilitation adopted by all the team members ?

28] How is information about patient progress communicated ?

29] How much influence do you feel you have concerning treatment/care decisions for specific patients ? *(Prompt how is conflict resolution achieved)*

30] Do all members of the rehabilitation team meet at times other than to discuss individual patients' progress ?

31] To what extent do informal carers get invited to participate in the rehabilitation of the patient ?

Appendix 2

Patient Interview Guide

INTERPROFESSIONAL COLLABORATION IN STROKE REHABILITATION

Interview schedule - Service Users

Pre-amble

I am involved in a number of research projects concerned with stroke rehabilitation and with this particular project I am seeking patients experiences of the rehabilitation process.

I should be grateful if you would respond to the following questions.

All information will be treated with the strictest confidence.

Thank you for your assistance.

1] Can you remember what it was first like following your stroke (*Prompt: How you did you feel ? What were your worsed fears ? Did you have any expectations of what might happen to you ? Did you feel that you would get better ?)*

2] At what point did you come to realise that you would require a period of rehabilitation ? *(Prompt: Did you think you would get better on your own ? Were you aware of getting better ?)*

3] Were you aware of rehabilitation starting ?

4] What did rehabilitation mean to you ? (*Prompt: Did you have any thoughts on where this may take place or who would be involved ?)*

5] Can you recall how you were introduced to the idea of having rehabilitation ?

6] Who do you consider contributed to your rehabilitation ? *(Prompt: Did you for example see the physio or the OT, What about the nurses and doctors ?)*

7] To what extent did you feel these different staff worked to the same ends ?

8] Did you feel you were involved in setting your own outcomes ?

9] Were you involved in discussions about your progress ? *(Prompt: Were you invited to the case conference ?)*

10] In what way did you feel you benefitted from rehabilitation ? *(Prompt: Do you feel that the rehabilitation service could be improved in any way ?)*

11] How did you measure your progress ? *(Prompt: Did you set yourself any goals that you did not share with the rehabilitation team ?)*

12] How do you feel the rehabilitation team monitored or measured your progress ? *(Prompt: How did the team feed back infomation to you about your progress ?)*

Thank you for your help.

(wp51\bgresear.ch\intervie.005)

Appendix 3

Attitude Scale (Nurses)

NURSES FEELINGS TOWARDS STROKE PATIENTS.

Here are some views expressed by nurses about nursing stroke patients.Please indicate your degree of agreement or disagreement with each of the statements.All information will be treated strictly confidentially.

Please answer **ALL** statements honestly. Thank you for your assistance.

PLEASE CIRCLE YOUR RESPONSE.

1. Present position
   - Nursing auxiliary 1
   - Enrolled Nurse 2
   - Registered Nurse 3

2. Sex
   - Male 1
   - Female 2

3. Total period of service in present position
   - Less than 6 months 1
   - 6 months to 1 year 2
   - Between 1 and 3 years 3
   - More than 3 years 4

PLEASE TICK THE BOX WHICH INDICATES YOUR DEGREE OF AGREEMENT OR DISAGREEMENT.

	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree	Office Use Only
1.I feel it meaningful to work with stroke patients.						
2.I like working with old people						
3.Carrying out an activity on his/her own strengthens the stroke patient's self confidence.						
4.Stroke patients are often unco-operative						
5.Stroke patients are uninteresting e.g.compared with patients with myocardial infarction.						
6.I would very much like to work in long term care.						
7.Patient activation is an important part of nursing care - all types of nurses should participate.						
8.It is impossible to devote more time to stroke patients unless the staffing level is increased.						
9.Activation is the task of the physiotherapist and occupational therapist and should not be an additional load on the ward staff.						
10.The motivation to participate in patient activation increases the more you learn.						
11.Stroke patients take too much time in nursing work - other patient groups are neglected.						
12.Incontinent stroke patients should have catheters to a greater extent.						
13.Relatives should participate in the activation of the stroke patients while the latter are still on the ward						
14.It is unrealistic to practice activation and rehabilitation on a general medical/care of the elderly ward.						

Thank you for your assistance.

Appendix 4

Attitude Scale (Physiotherapists,Occupational Therapists, Doctors)

PHYSIOTHERAPISTS FEELINGS TOWARDS STROKE PATIENTS.

Here are some views expressed by physiotherapists about treating stroke patients. Please indicate your degree of agreement or disagreement with each of the statements. All information will be treated strictly confidentially.

Please answer ALL statements honestly. Thank you for your assistance.

PLEASE TICK THE BOX WHICH INDICATES YOUR DEGREE OF AGREEMENT OR DISAGREEMENT.

	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree	Office Use Only
1. I feel it meaningful to work with stroke patients.						
2. I like working with old people						
3. Carrying out an activity on his/her own strengthens the stroke patient's self confidence.						
4. Stroke patients are often unco-operative						
5. Stroke patients are uninteresting e.g.compared with patients with myocardial infarction.						
6. I would very much like to work in long term care.						
7. Patient activation is an important part of stroke care - all types of staff should participate.						
8. It is impossible to devote more time to stroke patients unless the staffing level is increased.						
9. Activation is the task of the physiotherapist and occupational therapist and should not be an additional load on other staff.						
10. The motivation to participate in patient activation increases the more you learn.						
11. Stroke patients take too much time in hospital work - other patient groups are neglected.						
12. Incontinent stroke patients should have catheters to a greater extent.						
13. Relatives should participate in the activation of the stroke patients while the latter are still on the ward						
14. It is unrealistic to practice activation and rehabilitation on a general medical/care of the elderly ward.						

Thank you for your assistance.

OCCUPATIONAL THERAPISTS FEELINGS TOWARDS STROKE PATIENTS.

Here are some views expressed by occupational therapists about treating stroke patients. Please indicate your degree of agreement or disagreement with each of the statements. All information will be treated strictly confidentially.

Please answer ALL statements honestly. Thank you for your assistance.

PLEASE TICK THE BOX WHICH INDICATES YOUR DEGREE OF AGREEMENT OR DISAGREEMENT.

	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree	Office Use Only
1. I feel it meaningful to work with stroke patients.						
2. I like working with old people						
3. Carrying out an activity on his/her own strengthens the stroke patient's self confidence.						
4. Stroke patients are often unco-operative						
5. Stroke patients are uninteresting e.g.compared with patients with myocardial infarction.						
6. I would very much like to work in long term care.						
7. Patient activation is an important part of stroke care - all types of staff should participate.						
8. It is impossible to devote more time to stroke patients unless the staffing level is increased.						
9. Activation is the task of the physiotherapist and occupational therapist and should not be an additional load on other staff.						
10. The motivation to participate in patient activation increases the more you learn.						
11. Stroke patients take too much time in hospital work - other patient groups are neglected.						
12. Incontinent stroke patients should have catheters to a greater extent.						
13. Relatives should participate in the activation of the stroke patients while the latter are still on the ward						
14. It is unrealistic to practice activation and rehabilitation on a general medical/care of the elderly ward.						

Thank you for your assistance.

DOCTORS FEELINGS TOWARDS STROKE PATIENTS.

Here are some views expressed by doctors about treating stroke patients. Please indicate your degree of agreement or disagreement with each of the statements. All information will be treated strictly confidentially.

Please answer ALL statements honestly. Thank you for your assistance.

PLEASE TICK THE BOX WHICH INDICATES YOUR DEGREE OF AGREEMENT OR DISAGREEMENT.

	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree	Office Use Only
1. I feel it meaningful to work with stroke patients.						
2. I like working with old people						
3. Carrying out an activity on his/her own strengthens the stroke patient's self confidence.						
4. Stroke patients are often unco-operative						
5. Stroke patients are uninteresting e.g.compared with patients with myocardial infarction.						
6. I would very much like to work in long term care.						
7. Patient activation is an important part of stroke care - all types of staff should participate.						
8. It is impossible to devote more time to stroke patients unless the staffing level is increased.						
9. Activation is the task of the physiotherapist and occupational therapist and should not be an additional load on other staff.						
10. The motivation to participate in patient activation increases the more you learn.						
11. Stroke patients take too much time in hospital work - other patient groups are neglected.						
12. Incontinent stroke patients should have catheters to a greater extent.						
13. Relatives should participate in the activation of the stroke patients while the latter are still on the ward						
14. It is unrealistic to practice activation and rehabilitation on a general medical/care of the elderly ward.						

Thank you for your assistance.

Appendix 5

Team Climate Inventory

TEAM CLIMATE INVENTORY

QUESTIONNAIRE

Neil Anderson and Michael West

DATE: _____

TEAM: _____

INSTRUCTIONS

This questionnaire asks about the climate or atmosphere in your work group or team. It asks about how people tend to work together in your team, how frequently you interact, the team's aims and objectives, and how much practical support and assistance is given towards the implementation of new and improved ways of doing things. There are no 'right' or 'wrong' answers to any of the questions – it is more important that you give an accurate and honest response to each question. Do not spend too long on any one question. First reactions are usually best. For each question consider how your team *tends in general to be* or *how you feel in general* about the climate within your team. Please circle your chosen answers using a ball point pen.

ASE, A Division of NFER-NELSON

PART I COMMUNICATION AND INNOVATION

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1 We share information generally in the team rather than keeping it to ourselves.	1	2	3	4	5
2 Assistance in developing new ideas is readily available.	1	2	3	4	5
3 We all influence each other.	1	2	3	4	5
4 The team always functions to the best of its capability.	1	2	3	4	5
5 We keep in regular contact with each other.	1	2	3	4	5
6 In this team we take the time needed to develop new ideas.	1	2	3	4	5
7 People feel understood and accepted by each other.	1	2	3	4	5
8 Everyone's view is listened to, even if it is in a minority.	1	2	3	4	5
9 People in the team never feel tense with one another.	1	2	3	4	5
10 The team is open and responsive to change.	1	2	3	4	5
11 People in the team co-operate in order to help develop and apply new ideas.	1	2	3	4	5
12 Being part of this team is the most important thing at work for team members.	1	2	3	4	5
13 We have a 'we are in it together' attitude.	1	2	3	4	5
14 We interact frequently.	1	2	3	4	5
15 The team is significantly better than any other in its field.	1	2	3	4	5
16 People keep each other informed about work-related issues in the team.	1	2	3	4	5
17 Members of the team provide and share resources to help in the application of new ideas.	1	2	3	4	5
18 There are consistently harmonious relationships between people in the team.	1	2	3	4	5
19 There is a lot of give and take.	1	2	3	4	5
20 We keep in touch with each other as a team.	1	2	3	4	5

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
21 People in this team are always searching for fresh, new ways of looking at problems.	1	2	3	4	5
22 The team consistently achieves the highest targets with ease.	1	2	3	4	5
23 There are real attempts to share information throughout the team.	1	2	3	4	5
24 This team is always moving towards the development of new answers.	1	2	3	4	5
25 Team members provide practical support for new ideas and their application.	1	2	3	4	5
26 Members of the team meet frequently to talk both formally and informally.	1	2	3	4	5

PART II OBJECTIVES

	Not at all		Somewhat		Completely
27 How clear are you about what your team objectives are?	1	2	3	4	5
28 To what extent do you think they are useful and appropriate objectives?	1	2	3	4	5
29 How far are you in agreement with these objectives?	1	2	3	4	5
30 To what extent do you think other team members agree with these objectives?	1	2	3	4	5
31 To what extent do you think your team's objectives are clearly understood by other members of the team?	1	2	3	4	5
32 To what extent do you think your team's objectives can actually be achieved?	1	2	3	4	5
33 How worthwhile do you think these objectives are to you?	1	2	3	4	5
34 How worthwhile do you think these objectives are to the organization?	1	2	3	4	5
35 How worthwhile do you think these objectives are to the wider society?	1	2	3	4	5
36 To what extent do you think these objectives are realistic and can be attained?	1	2	3	4	5
37 To what extent do you think members of your team are committed to these objectives?	1	2	3	4	5

PART III TASK STYLE

	To a very little extent		To some extent		To a very great extent
38 Do your team colleagues provide useful ideas and practical help to enable you to do the job to the best of your ability?	1	2	3	4	5
39 Do you and your colleagues monitor each other so as to maintain a higher standard of work?	1	2	3	4	5
40 Are team members prepared to question the basis of what the team is doing?	1	2	3	4	5
41 Does the team critically appraise potential weaknesses in what it is doing in order to achieve the best possible outcome?	1	2	3	4	5
42 Do members of the team build on each other's ideas in order to achieve the best possible outcome?	1	2	3	4	5
43 Is there a real concern among team members that the team should achieve the highest standards of performance?	1	2	3	4	5
44 Does the team have clear criteria which members try to meet in order to achieve excellence as a team?	1	2	3	4	5

Published by The NFER-NELSON Publishing Company Ltd,
Darville House, 2 Oxford Road East, Windsor, Berkshire, SL4 1DF, UK

First Published 1994

Printed in Great Britain. 2(11.94)

Appendix 6

Letter of Copyright Release for Team Climate Inventory

NFER-NELSON
INFORMING YOUR DECISIONS

DARVILLE HOUSE
2 OXFORD ROAD EAST
WINDSOR
BERKSHIRE SL4 1DF
TEL: +44 (0)1753 858961
FAX: +44 (0)1753 856830

14th October 1996

Bernard Gibbon
The University of Liverpool
Department of Nursing
Faculty of Medicine
The Whelan Building
LIVERPOOL L69 3BX

Dear Mr Gibbon

TCI

Thank you for your letter requesting permission to reproduce some or all of the items from the TCI in your PhD thesis.

I am happy for you to do this: either including the original or extracting the items you suggest. If you choose to do the latter, please include the following copyright acknowledgement:

Items extracted from the TEAM CLIMATE INVENTORY © Neil Anderson and Michael West 1994. Reproduced by permission of the publishers NFER-NELSON Publishing Company Ltd, Darville House, 2 Oxford Road East, Windsor SL4 1DF. All rights reserved.

Thank you for checking this with us.

Best wishes.

Yours sincerely
NFER-NELSON

Susan Thompson

SUSAN THOMPSON
Rights & Royalties Coordinator

e-mail: susan.thompson@nfer-nelson.co.uk

Appendix 7

Survey of Documentary Sources Questionnaire

Documentation Sources Questionnaire

1 Does the documentation note pre admission health status?

Yes, unequivocal	Yes, some useful information	Yes, not useful	None

2 Does the documentation note pre admission functional status?

Yes, unequivocal	Yes, some useful information	Yes, not useful	None

3 Does the documentation not Physical problems?

Yes, unequivocal	Yes, some useful information	Yes, not useful	None

4 Does the documentation note psychological problems?

Yes, unequivocal	Yes, some useful information	Yes, not useful	None

5 Does the documentation note social problems?

Yes, unequivocal	Yes, some useful information	Yes, not useful	None

6 Does the plan have long term rehabilitation goals?

Yes, unequivocal	Yes, some useful information	Yes, not useful	None

7 Does the plan have short term rehabilitation goals?

Yes, unequivocal	Yes, some useful information	Yes, not useful	None

8 Does the plan have rehabilitation targets?

Yes, unequivocal	Yes, some useful information	Yes, not useful	None

9 To what extent are the rehabilitation goals the same between the different professionals?

Yes, unequivocal	Yes, some agreement	Completely Different	No goals stated

Appendix 8

Access Approval Letter

Fazakerley Hospital,
Lower Lane,
Liverpool, L9 7AL.
Tel. 051 525 5980
Fax. 051 529 3239

Aintree Hospitals

(Please quote our reference in reply)

Your Ref.

Our Ref. FAZ/AKS/RH/

When telephoning or calling please ask for

Medicine for the Elderly
Direct Line: 051 529 3695
Fax: 529 3787

10 May 1994

M.H 529 3536

Mr Bernard Gibbon
Lecturer
Department of Nursing
The Whelan Building
The University of Liverpool
PO Box 147
LIVERPOOL
L69 3BX

Dear Mr Gibbon

Re: **Access to Stroke Rehabilitation Unit**

Thank you for your letter and I am quite happy for you to have access to the Unit for your project and I wish you success with the same.

Yours sincerely,

Anil Sharma
Consultant Physician

Appendix 9

Local Ethics Committee Approval Letter

South Sefton Research Ethics Committee
Fazakerley Hospital
Longmoor Lane
L9 7AL

Aintree Hospitals

Secretary
Mrs Lyn Adamson
Phone: 529 2405

4th August 1994

521 1854

Mr B.Gibbon,
Lecturer in Nursing,
University of Liverpool,
P.O. Box 147,
Liverpool L69 3BX.

Dear Mr.Gibbon,

Re: EC 53.94 Interprofessional collaboration in Stroke Rehabilitation

Thank you for your full and complete responses to my recent communication about your study. These responses are now entirely satisfactory and on that basis I can give **Approval** for your study to commence. It is normal for approval to be granted for a period of eighteen months in the first place for a project. If additional time is required for any reason this can usually be granted on application to the Committee.

Yours sincerely,

Dr P.Charters,
Chairman, South Sefton Research Ethics Committee.

Appendix 10

Potential respondents explanatory letter and consent form

THE UNIVERSITY *of* LIVERPOOL

3 October 1995

Professor KMF Morle, MSc, RGN, RNT, RCNT, DipAdv Nurs
Head of Department

Department of Nursing

Faculty of Medicine

The Whelan Building
Liverpool L69 3BX

Telephone: 0151 794 5900
Facsimile: 0151 794 5678

Direct number 794 5902
Secretary 794 5901

Dear

Re: Research into Stroke Rehabilitation

I am a lecturer in nursing with an interest in stroke care and I have been involved in a number of research projects concerning stroke rehabilitation.

I am writing to ask you if you would consider being involved in a project looking at how members of the multidisciplinary team work together. Although a number of approaches to the managerial organisation of stroke rehabilitation have developed there is as yet no agreement on the 'best' approach nor is there an adequate body of literature concerning those factors which positively influence patient outcomes.

The extent of your involvement would be to be interviewed by me or a research assistant, Liz Lightbody, at a mutually convenient time. The interview would last around 30 minutes. It would be most helpful to me if I could make an audio recording of the interview which will be later transcribed. The transcription will not contain your name and the tape will be blanked out. You have my assurance that all information given will be treated with the strictest confidence. The interview does not have to be audio-recorded and your wishes will be respected.

This research has the approval of South Sefton Research Ethics Committee and of the Rehabilitation Services manager.

Should you require further information please do not hesitate to contact me either by telephone or letter.

I look forward to your support in this research project.

Yours sincerely,

Bernard Gibbon
Lecturer.
University switchboard
Telephone: 0151 794 2000
Facsimile: 0151 708 6502

THE UNIVERSITY
of LIVERPOOL

Professor KMF Morle, MSc,
RGN, RNT, RCNT, DipAdv Nurs
Head of Department

Department of Nursing

Faculty of Medicine

The Whelan Building
Liverpool L69 3BX

Telephone: 0151 794 5900
Facsimile: 0151 794 5678

Direct number 794 5902
Secretary 794 5901

3 October 1995

Dear

Re: Research into Stroke Rehabilitation

I am a lecturer in nursing with an interest in stroke care and I have been involved in a number of research projects concerning stroke rehabilitation.

I am writing to ask you if you would consider being involved in a project looking at how members of the multidisciplinary team work together. Gaining an understanding of the rehabilitation process from the patient's point of view is important to our understanding of how best to deliver rehabilitation.

The extent of your involvement would be to be interviewed by me, or my research assistant, Liz Lightbody, usually in your own home, at a mutually convenient time. The interview would last between 30 minutes and one hour. It would be most helpful to me if I could make an audio recording of the interview which will be later transcribed. The transcription will not contain your name and the tape will be blanked out. You have my assurance that all information given will be treated with the strictest confidence. The interview does not have to be audio-recorded and your wishes will be respected.

This research has the approval of South Sefton Research Ethics Committee and of the Rehabilitation Services manager.

Should you require further information please do not hesitate to contact me either by telephone or letter.

I look forward to your support in this research project.

Yours sincerely,

Bernard Gibbon
Lecturer.

(wp51\servlet.fas)

University switchboard
Telephone: 0151 794 2000
Facsimile: 0151 708 6502

Department of Nursing,

University of Liverpool

CONSENT TO PARTICIPATION IN RESEARCH STUDY

Aims

This study is concerned with gaining an understanding of the way in which the multidisciplinary stroke rehabilitation team works together.

Queries

I understand that if I have any questions relating to the study I can contact Bernard Gibbon at the University of Liverpool on 794 5902 or 794 5901.

Consent

I confirm that a satisfactory explanation about the study has been given to me by the researcher, Bernard Gibbon. I understand that if I subsequently wish to withdraw from the study at any time without giving any reasons I am free to do so without deteriment to any care I may be receiving.

I understand that any information I provide will be treated with the strictest confidence and that my anonymity is assured but that the findings of the study may be published.

Audio-recording of Interview (Complete either A or B)

A I consent to audio-recording of the interview, and I have been assured that the tape recording will be transcribed without my name and that following transcription the tape will be blanked out.

Signed..... (Respondent)Date.....

Signed.....(Investigator)Date.....

B I **do not** consent to audio-recording of the interview and I understand that the interview can proceed without taping.

Signed..... (Respondent)Date.....

Signed.....(Investigator)Date.....

cc

Respondent
Researcher

Medical records as appropriate

(wp51\consent.faz)

Appendix 11

Staff respondents' biographical data

Staff Respondent Biographical Data

Reference Code	Profession	Sex	Age	Academic level of basic training	Years of experience	Additional Professional Qualifications	Additional Academic Qualifications
NR1	Nursing	M	3	Certificate	>10	ENB 998, 941 OU553	None
NR2	Nursing	F	1	Certificate	4-6	nil	BSc in progress
NR3	Nursing	F	1	Diploma	1-3	ENB n27	None
NR4	Nursing	M	2	Certificate	7-9	ENB 998, 941	None
NR5	Nursing	M	1	Certificate	1-3	None	None
NR6	Nursing	F	3	Certificate	>10	None	None
NR7	Nursing	M	1	Certificate	1-3	None	None
NR8	Nursing	F	1	Diploma	1-3	None	None
NR9	Nursing	F	3	Certificate	7-9	ENB 998, 941	None
NR10	Nursing	F	1	Certificate	1-3	ENB 998, 941	None
NR15	Nursing	F	3	Certificate	>10	None	BSc in progress
NR16	Nursing	F	1	Certificate	4-6	None	None
NR17	Nursing	F	2	Certificate	>10	ENB 941	None
NR18	Nursing	M	2	Diploma	1-3	None	None
NR19	Nursing	F	2	Certificate	>10	ENB 998	BSc
NR20	Nursing	F	2	Certificate	7-9	None	None
DR1	Medicine	F	1	Degree	1-3	None	None
DR2	Medicine	M	1	Degree	1-3	None	None
PT1	Physiotherapist	F	1	Degree	4-6	Bobath trained	MSc
PT2	Physiotherapist	F	1	Degree	1-3	None	None
PT3	Physiotherapist	F	1	Diploma	7-9	None	None

PT4	Physiotherapist	F	1	Degree	1-3	None	None
PT5	Physiotherapist	F	3	Diploma	>10	Bobath trained	None
OT1	Occupational therapist	F	1	Diploma	4-6	None	Certificate in NHS management services
OT2	Occupational therapist	F	1	Degree	1-3	None	None
OT4	Occupational therapist	F	1	Diploma	4-6	None	None

Appendix 12

Service User respondents' biographical data

Service User Respondents' Biographical Data

Respondent Number	Sex	Age	Days in Acute Stroke Unit	Days in Stroke Rehabilitation Unit	Total
1	M	84	2	16	18
2	M	47	4	10	14
3	F	83	2	28	30
4	M	76	1	23	24
5	M	68	2	9	11
6	F	80	10	9	19
7	M	78	8	0	8
8	M	68	6	0	6
9	F	68	16	11	27
10	F	81	5	4	9
11	F	80	9	1	10
12	M	82	7	0	7
13	F	75	9	53	62
14	F	79	10	126	136
15	M	76	7	11	18
	Mean	75	6.5	20	26.6
	Min.	47	1	0	6
	Max.	84	16	126	136

Appendix 13

Published papers emanating from the study

Journal of Advanced Nursing, 1991, 16, 1336–1342

A reassessment of nurses' attitudes towards stroke patients in general medical wards

Bernard Gibbon MSc RGN RMN RNT
Lecturer in Nursing, University of Liverpool, PO Box 147, Liverpool L69 3BX, England

Accepted for publication 22 April 1991

GIBBON B. (1991) *Journal of Advanced Nursing* **16**, 1336–1342
A reassessment of nurses' attitudes towards stroke patients in general medical wards
This paper summarizes a research study inquiring into the attitudes of qualified nursing staff and nursing auxiliaries towards stroke patients in general medical wards. The survey was undertaken on eight mixed-sex general medical wards in a large general hospital. All wards are used for clinical nursing experience for nurses in training. Each of the wards, despite having a particular interest in one or more medical specialities, regularly admit patients following stroke. All nurses were therefore familiar and in regular contact with this particular client group. A Likert scale with demonstrated reliability and validity was employed as the data collection instrument. Results indicated that nurses were largely ambivalent in their attitudes towards stroke rehabilitation. The patterns of responses indicate that the nurses who have the more positive attitudes about stroke patients consider that they have a role in stroke rehabilitation and that they value the nursing contribution. The nurses with less positive attitudes towards stroke patients see stroke patients as unco-operative and demanding. The findings suggest the need for specific education for the role of the nurse as a rehabilitator.

INTRODUCTION

Stroke patients constitute a large proportion of hospital patients and are not generally confined to one particular ward or speciality. The acute stroke patient is generally nursed in either a general medical ward or care of the elderly ward with an increased prevalence in care of the elderly wards as the acute phase of the stroke passes. Stroke patients are also nursed on surgical wards, not only when medical beds are full but admitted specifically to a surgical ward for surgical intervention of other pathology.

Stroke is known to be amongst the diseases responsible for the greatest number of deaths in the UK (and other industrialized countries) and additionally is the cause of much disability especially in the elderly population. Stroke patients can therefore be considered to have a high profile amongst the hospital patient population.

LITERATURE SEARCH

Myco (1984, 1986) commented on the dearth of nursing literature relating to stroke but the intervening years have done little to redress the balance, though there are some notable exceptions (for example, Hamrin & Lindmark 1990). There is, however, a proliferation of such papers in journals written by and targetting the medical and paramedical professions, e.g. Barer (1990), Bonita *et al.* (1987), Nouri & Lincoln (1987) and Stone (1987). These papers are often concerned with measurement of activity of living as an indicator of functional recovery following a particular intervention programme, e.g. Tallis (1989). Despite this, the role of the nurse in stroke rehabilitation remains vague, though the contribution that nurses make is still highly valued (Barer 1990). This seemingly contradictory position reflects in part an unwillingness of nurses to 'grasp the nettle' and define the parameters of the nursing role in the mainstream of rehabilitative care.

Myco (1984) suggested that rehabilitation appeared to be seen as a speciality that must be learnt after registration rather than as a basic rationale for nursing care. To what extent this holds true today is as yet unanswered. Empirical evidence suggests that rehabilitation is an integral part of the nurse training programme and usually achieves prominence in the care of the elderly component in a general training programme. Despite this, calls are still made for a national post-basic course in rehabilitation nursing (Henderson *et al.* 1990).

Stroke patients are not considered to be a glamorous group of patients (Wade & Tyler 1989) and as a consequence generally do not attract specialist services. Nor are they in the same league as paediatric services or heart transplantation when it comes to local or national appeals (Wales 1990). Perhaps unaccountably, stroke does not appear to carry the stigma or fear of cancer, despite the high mortality rate associated with cerebrovascular disease. Stroke patients are often viewed negatively and there is evidence that stroke patients are unpopular (Hamrin 1982, Stockwell 1972).

Unpopular patient

Stockwell (1972) found that this group of patients fell into the category of 'unpopular patient' though the respondents to her study expressed feelings of not wishing to regard them in this way. Some stroke patients do possess some of the attributes of unpopular patients, such as, 'protracted duration of stay, uncooperative, difficult to talk to, unlikely to progress', which gives some insight into why stroke patients are negatively evaluated.

Kratz (1978), in a study focusing upon the care of the long-term sick in the community, determined that the value that nurses ascribed to nursing interventions with stroke patients differed at different phases of the disease process. Nurses valued the care they gave when they understood the care they were to give. This occurred when the patient was either seriously ill or when the patient's condition was improving. Nurses were unable to value the care when they were unclear as to its nature, and this occurred when the patient's condition was not improving.

Hamrin (1982) demonstrated that a more positive attitude towards stroke patients could be achieved by an activation programme and concurrent nurse education. It may therefore be concluded that a poor understanding of either the nature of the illness, subsequent intervention or lack of clarity as to the role of the nurse may contribute to a negative attitude.

The quality of care given to patients may be affected by the attitudes held by health care workers (Corner 1988). Atkinson *et al.* (1983) suggest that the notion of attitudes determining behaviour is deeply ingrained in Western thinking and that in many instances this assumption holds true. Caution must, however, be exercised as attitudes do not necessarily determine behaviour and predictions of behaviour cannot be based on attitude alone. Furthermore, both attitudes and behaviour are probably not constant but fluctuate over time.

It is clear, however, that conflict between the individual's attitudes and behaviour will act as a stressor and that the individual will act to reduce the discomfort.

Observational studies by Bond (1978) have uncovered the fact that nurses' attitudes towards cancer patients include avoidance behaviour; that is, minimizing contact time between the patient and nurse. Corner (1988) refers to the study of Baider & Porath (1981) which found that when nurses were unable to reach their professional goals, negative attributes such as anger, fatigue and aggression were demonstrated. Whilst Corner's (1988) study was concerned specifically with cancer patients, a number of similarities can be seen. Stroke patients, like cancer patients, are often perceived as having a high mortality, an absence of cure and a period of incapacity/dependence.

It may be concluded from the literature search that nurses' attitudes towards stroke patients may be negative or at best neutral and that attitudes towards rehabilitation of this particular client group may be similarly viewed.

Prior to instigating an intervention programme in which the role of the nurse in stroke rehabilitation will be evaluated, it seemed appropriate to determine the current attitude of nurses.

MEASUREMENT OF NURSES' ATTITUDES

Approaches to attitude study have concentrated on two main methods; first, measuring cognitive attitudes through self-reports; and second, inferring attitudes from observed behaviour. Self-reports commonly employ attitude scales which consist of a number of attitude statements with which the respondent is asked to agree or disagree. Attitude scales are relatively crude measuring instruments and are used essentially to divide people into a number of broad groups with regard to a particular attitude. They place people on a continuum relatively to each other and not in absolute terms (Oppenheim 1984).

Oppenheim (1984) suggests five principles on which attitude scales are developed. These are, unidimensionality or homogeneity, linearity, reliability, validity and reproducibility. Unidimensionality denotes that the scale should measure one concept at a time as purely as possible and

correlation techniques are therefore used to determine the homogeneity of the items.

Linearity demands that the scale follow a straight line model and that a scoring system be devised. Reliability is an indispensable attribute of consistency. Thus, if the same measure was applied to the same object on two separate occasions separated by time, the results should be the same unless a real change in the object has taken place. The fourth principle, that of validity, implies that the scale measures what it purports to measure.

Finally, the principle of reproducibility infers that the researcher, by knowing a single figure (respondents' overall score), can state which individual statements the respondent agreed or disagreed with. This requirement is often not met in practice as scales are not amenable to progressive scaling as they lack unidimensionality.

Likert scale

There are a number of attitude scaling methods, none of which fulfil all the above principles. The importance lies in selecting the method appropriate to the particular problem. As this study was concerned with attitude patterning, the Likert procedure was selected as this is considered the most relevant (Oppenheim 1984).

The review of the literature revealed a previous study into nurses' attitudes towards activation of stroke patients (Hamrin 1982). A Likert scale composed of 14 items had been developed by the researcher for her study. The item pool from which the final homogenous items were generated consisted of 30 statements. Only those with a Cronbach's alpha coefficient of 0·60 or more were included (with the exception of one item with a score of 0·56). The 14 items were balanced between seven positive statements and seven negative statements. Each statement was followed by a five-point scale ranging from strongly agree, agree, uncertain, disagree to strongly disagree. In the analysis, scores for negative items were reversed.

Preliminary work

As part of the pilot work for the current study the researcher conducted informal interviews with general medical ward staff to compose an item pool with a view to determining if further or additional statements should be included in the Likert scale. In the event, the tool developed by Hamrin (1982) was used in its original form, the exception being to anglicize one of the statements to read 'staffing level' rather than 'personnel density' (see Appendix).

Sample population

All permanent members of the nursing staff of all medical wards in a large teaching hospital were invited to participate in the study. The sample consisted of 84 members of staff, of which 53 were registered general nurses, 19 enrolled nurses and 12 nursing auxillaries.

The questionnaire was administered as a hand-delivered postal survey with a covering letter explaining the nature of the research, a guarantee of confidentiality and an expression of thanks for assisting with the survey. A stamped (internal mail) self-addressed envelope was included for the reply. Fifty-nine (70%) questionnaires were returned within 4 weeks. A follow-up letter and repeat questionnaire to non-respondents increased the response rate to 76 (90·5%) by 6 weeks.

The questionnaire, in addition to the 14 attitude statements, asked respondents to indicate their occupational grade. They were also asked to indicate how long they had been in their current post, using one of four bandings (less than 6 months, 6 months to 1 year, between 1 and 3 years, and greater than 3 years).

ANALYSIS

A maximum score for the scale is 70 and the minimum score 14. As the results had a normal distribution curve, and in order to draw a comparison with Hamrin's (1982) findings, the categorizing of respondents in one of three groups was maintained. Those with a low score (<44 points), medium score (44–56 points) and high score (>56 points).

Questionnaires were scored by hand using a template and aggregated on a computer spreadsheet. Grades of nurse were separated, in an attempt to identify patterns of response particular to these groups. Similarly, length of service in present post was also used to determine patterns of response.

Patterns of responses

The scored responses were then placed in rank order in each of the occupational grades in an attempt to see if any discernable pattern was observable.

Some items were consistently scored low by all lower scorers and high by all higher scorers. Other patterns of association were less immediately apparent. Pearson's product moment correlation was applied to determine the degree of association between item scores and total scores (see Table 1).

Table 1 Degree of association between item scores and total scores

Item number	Registered nurses r=*	Enrolled nurses r=	Nursing auxillaries r=
1	0·56	0·68	0·65
2	0·16	0·44	0·49
3	0·24	0·48	0·53
4	0·35	0·18	0·84
5	0·60	0·50	0·35
6	0·45	0·16	0·53
7	0·12	0·24	0·52
8	0·56	−0·18	−0·20
9	0·47	0·69	0·59
10	−0·02	0·46	0·59
11	0·59	0·56	0·52
12	0·45	0·42	0·55
13	0·28	0·50	0·72
14	0·58	0·53	0·53

*r = correlation coefficient as measured by Pearson's product moment correlation.

Table 2 Overall results

	Total (n=76)	RN (n=48)	EN (n=17)	N. Aux. (n=11)
Response rate (%)	90·47	90·56	89·17	91·66
Maximum score	66	66	59	62
Minimum score	41	41	41	41
Mean	52·24	52·56	51·70	51·54
Standard deviation	5·06	4·71	4·94	6·83
Median	52	54	52	52

Table 3 Scores according to occupational grade

	High		Medium		Low	
	%	n	%	n	%	n
Registered nurses	15·21	7	83·33	40	2·08	1
Enrolled nurses	17·64	3	70·58	12	11·76	2
Nursing auxillaries	27·27	3	54·54	6	18·18	2

FINDINGS

The overall response rate was 90·5% (n = 76). There was no significant difference in response rate, range of scores, mean, standard deviation or median values between different grades of staff (see Table 2).

The distribution of high, medium and low scorers according to occupational grade (see Table 3) suggests that most nurses, irrespective of their level of training, do not hold particularly positive or negative attitudes towards stroke patients and their rehabilitation.

A positive correlation at the level of $r = 0{\cdot}5$ or greater was found with respect to items 1, 5, 8, 11 and 14 (see Appendix). This suggested that the more positive the nurse is toward stroke rehabilitation, then the more likely she is to regard stroke patients as interesting to nurse.

The more highly motivated registered nurses considered that their input in activation was impeded by staffing levels and, whilst they considered it realistic to apply the principles of stroke rehabilitation in general medical wards, they felt other patient groups could become neglected.

A weak correlation was found between all other items and a positive attitude toward stroke rehabilitation, suggesting that registered nurses are largely fairly neutral in their attitude toward stroke rehabilitation.

Enrolled nurses

Enrolled nurses' scores represented a similar pattern to registered nurses in that the higher scoring nurses felt that nursing stroke patients was both interesting and rewarding. This group did not suggest that staffing levels needed to be increased. They also felt that activation was realistic on general medical wards and suggested that this was part of the role of the nurse. Enrolled nurses were, however, similarly concerned that nurses' participation in patient activation was likely to lead to neglect of other patient groups.

Nursing auxiliaries

Nursing auxiliaries presented a different pattern of responses. Auxiliaries found it meaningful to work with stroke patients but also suggested that they could be difficult to nurse as such patients are unco-operative. They also suggested that incontinent stroke patients could be better managed by use of urinary catheterization. They felt that patient activation could be carried out on general medical wards and that all nurses and patients' relatives should participate.

Many of the auxiliaries suggested that they would like to work in long-term care and also felt that their motivation to participate in patient activation increased the more they learnt. Auxiliaries, like enrolled nurses, did not feel that the staffing level needed to be increased but felt that other patient groups became neglected when nursing stroke patients.

DISCUSSION

The Likert scale was able to separate individuals into groups according to their attitude towards stroke rehabilitation. Most nurses fell into the medium score group ($n = 58$, 69%) with a few in the higher scoring group ($n = 13$, 15·47%) and a few in the lower scoring group ($n = 5$, 5·95%).

As stated previously, the attitude/intensity characteristic of attitudes suggests that those with neutral attitudes tend not to have a high intensity of expression; that is, it can be suggested that the majority of nurses are ambivalent towards stroke rehabilitation.

The more positive nurses consider that they have a role in stroke rehabilitation and value the care that they give. This finding is congruous with that of Kratz (1978) who found that nurses valued the care that they gave stroke patients when the patient was either 'seriously ill' or 'really getting better'. It was, however, beyond the scope of her study to quantify the nursing input to patient activation and to clarify the role of the nurse in stroke rehabilitation.

The findings of the present study are largely congruous with those of Hamrin (1982) in that the majority of nurses and auxiliaries held largely neutral attitudes towards stroke rehabilitation. Hamrin (1982) demonstrated that an educational programme regarding stroke rehabilitation improved the attitudes of the nursing staff. The findings of this study suggest that, particularly amongst nursing auxiliaries, an educational programme would increase their motivation to participate in patient activation. It could therefore be suggested that this study supports the call for post-basic courses in rehabilitation (Henderson *et al.* 1990). The changing patterns of disease in our society with an increase in the prevalence of chronic conditions, however, may be sufficient justification to include or increase rehabilitation education in the basic nurse education programme.

This conclusion, however, presupposes that the role of the nurse as a rehabilitator has been clearly defined, yet no evidence exists to support this. Hamrin & Lindmark (1990) were unable to demonstrate an improvement in stroke rehabilitation following the introduction of systematic care planning and concluded that this may be attributable to nurses' unfamiliarity with care plans. It may have been due to a lack of identification with the care plans as they were devised by a research assistant. Despite being unable to demonstrate a relationship between systematic care planning and improved rehabilitation, both patients and nurses reported an increase in satisfaction, in itself valuable.

Lack of clarity about rehabilitation

It appears incongruous to find many nurses suggesting that staffing levels do not need to be increased whilst believing that the principles of stroke rehabilitation can be implemented on general medical wards and simultaneously feeling that other patient groups would suffer whilst caring for stroke patients. This finding may be attributable to a lack of clarity as to what is involved in patient activation and the nurses' role in stroke rehabilitation. It may also be that staffing levels do not need to be increased *per se* but that skill mix needs to be addressed, thus allowing those who are adequately prepared for their role as rehabilitators to be involved in direct nursing care.

Low scoring nurses view stroke patients as uncooperative, demanding and requiring more time than is available unless other patient groups are neglected. It was beyond the scope of this study to determine if other client groups were neglected as a result of nurses engaging in time-consuming work with stroke patients, but it is of sufficient concern to find that nurses' attitudes towards particular client groups could be prejudiced by the perception that stroke patients require more than their share of time. This finding may support the case for the establishment of specialized stroke units (Stevens & Isaacs 1984) where the patient population suffers from the same condition, thus eliminating the possibility of neglecting other client groups.

Conclusion

Nurses were found to be largely ambivalent about their role in stroke rehabilitation. All nurses and auxiliaries believed that the more they learnt about stroke rehabilitation, the more motivated they became. This provides the basis of support for specific education of the nurse as a rehabilitator which presupposes that the nurse's role in rehabilitation has been clarified. As yet, there is insufficient evidence that this is so and thus an area for further research is suggested.

References

Atkinson R.L., Atkinson R.C. & Hilgard E.R. (1983) *Introduction to Psychology*. Harcourt Brace Jovanovich, New York.

Baider L. & Porath S. (1981) Uncovering fear: group experience of nurses in a cancer ward. *International Journal of Nursing Studies* **18**, 47–52.

Barer D.H. (1990) Stroke rehabilitation; panacea or placebo. *Geriatric Medicine* **20**(9), 45–49.

Bond S. (1978) Processes of communication about cancer in a radiotherapy department. Unpublished PhD thesis. University of Edinburgh, Edinburgh.

Bonita R., Anderson A. & North J.D.K. (1987) The pattern of management after stroke. *Age and Ageing* **16**, 26–34.

Corner J.L. (1988) Assessment of nurses' attitudes towards cancer: a critical review of research methods. *Journal of Advanced Nursing* **13**, 640–648.

Hamrin E. (1982) Attitudes of nursing staff in general medical wards towards activation of stroke patients. *Journal of Advanced Nursing* **7**, 33–42.

Hamrin E.K.F. & Lindmark B. (1990) The effect of systematic care planning after acute stroke in general hospital medical wards. *Journal of Advanced Nursing* **15**, 1146–1153.

Henderson E.J., Morrison J.A., Young E.A. & Pentland B. (1990) The nurse in rehabilitation after severe brain injury. *Clinical Rehabilitation* **4**, 167–172.

Kratz C.R. (1978) *Care of the Long-Term Sick in the Community*. Churchill Livingstone, Edinburgh.

Myco F. (1984) Stroke and its rehabilitation: the perceived role of the nurse in the medical and nursing literature. *Journal of Advanced Nursing* **9**, 429–439.

Myco F. (1986) A new way of living. *Nursing Times* **82**(14), 24–27.

Nouri F.M. & Lincoln N.B. (1987) An extended activities of daily living scale for stroke patients. *Clinical Rehabilitation* **1**, 301–305.

Oppenheim A.N. (1984) *Questionnaire Design and Attitude Measurement*. Heinemann, London.

Stevens R.S. & Isaacs B. (1984) Stroke rehabilitation units in the United Kingdom. *Health Trends* **16**, 61–63.

Stockwell F. (1972) *The Unpopular Patient*. Royal College of Nursing, London.

Stone S.P. (1987) The Mount Vernon stroke service: a feasibility study to determine whether it is possible to apply the principles of stroke unit management to patients and their families on general medical wards. *Age and Ageing* **16**, 81–88.

Tallis R. (1989) Measurement and the future of rehabilitation. *Geriatric Medicine* **19**, 31–40.

Wade D.T. & Tyler G. (1989) Implementing a consensus on stroke poses problems. *Geriatric Medicine* **19**(1), 50–52.

Wales J. (1990) Accounting for the quality of human life. *Education Guardian* 30 October, pp. 6–7.

APPENDIX: NURSES' FEELINGS TOWARDS STROKE PATIENTS*

Here are some views expressed by nurses about nursing stroke patients. Please indicate your degree of agreement or disagreement with each of the statements. All information will be treated strictly confidentially.

Please answer *all* statements honestly. Thank you for your assistance.

Please circle your response

1. Present position
   - Nursing auxiliary 1
   - Enrolled nurse 2
   - Registered nurse 3
   - Pupil nurse 4
   - Student nurse 5

2. Sex
   - Male 1
   - Female 2

3. Total period of service in present position
   - Less than 6 months 1
   - Six months to 1 year 2
   - Between 1 and 3 years 3
   - More than 3 years 4

Please tick the box which indicates your degree of agreement or disagreement

	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
1. I feel it meaningful to work with stroke patients					
2. I like working with old people					
3. Carrying out an activity on his/her own strengthens the stroke patient's self-confidence					

	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
4. Stroke patients are often unco-operative					
5. Stroke patients are uninteresting, e.g. compared with patients with myocardial infarction					
6. I would like very much to work in long-term care					
7. Patient activation is an important part of nursing care: all types of nurses should participate					
8. It is impossible to devote more time to stroke patients unless the staffing level is increased					
9. Activation is the task of the physiotherapist and occupational therapist and should not be an additional load on the ward staff					
10. The motivation to participate in patient activation increases the more you learn					
11. Stroke patients take too much time in nursing work: other patient groups are neglected					
12. Incontinent stroke patients should have catheters to a greater extent					
13. Relatives should participate in the activation of the stroke patients while the latter are still on the ward					
14. It is unrealistic to practice activation and rehabilitation on a general medical/care of the elderly ward					

*Based on Hamrin (1982).

MEASURING STROKE RECOVERY

Bernard Gibbon discusses the feasibility of a standard tool to assess how patients have recovered from stroke

STROKE is extremely common in industrialised societies and ranks among the top three causes of death. In addition to high mortality, a large number of stroke victims have protracted periods of recovery and many are left with a residual disability.

The increasing emphasis on clinical audit raises the issue of measurement as a performance indicator in the evaluation of clinical services. Additionally, patients' demands for satisfactory care, treatment and management are unlikely to be fulfilled with bland and unquantified platitudes. The use of scales to measure and communicate progress appears, in part, to meet both these aims.

Tallis[1] argued that central government was indifferent to the plight of disabled people and that the average rehabilitationist was indifferent to scientific inquiry. Nurses must accept some share of the blame if the latter assertion is true. Certainly there is little evidence that nurses are proactive in either producing or using scales to measure functional recovery following stroke. However, nurses have often excluded from undertaking formal assessment of functional recovery[2]. Hamrin and Wohlin[3] were unusual in having devised an activities index for stroke patients.

Measurement tools have long been established to quantify aspects of patient care, including those related to stroke. Such indicators generally measure impairment, the physiological consequences of pathology, disability and the functional and social consequences. It is important to consider what exactly is to be assessed before employing a measurement tool. I feel

Activities of daily living, such as eating and drinking, are among the items assessed

assessment of disability is the central focus for measuring functional recovery following stroke.

Knowledge of existing measurement tools is necessary to determine an appropriate scale and avoid the temptation to devise yet another disability scale. Numerous scales include the same basic set of activities with variation in the assessment criteria and scoring method, and calls have already been made for standardisation[4]. Despite this proliferation, many measurement scales have not been published in nursing journals.

The concept of activities of daily living (ADL) scales[5] should be familiar to most nurses, although the term should not be confused with Activities of Living (AL), often associated with the Activities of Living Model[6]. ADL scales have become the mainstay of measuring disability. They are available in short or 'standard' formats and also in extended scales which have additional items relating to domestic/household activities (Table 1).

One commonly used scale is the Barthel Index[7], which is a summed index (1–3 points per item) assessing self-care, continence and mobility. It is administered either through formal testing, interview or informal assessment and has been validated for such approaches (Table 2).

The Rivermead ADL scale[8] was devised to assess stroke and head injury patients and includes additional domestic items. It is a hierarchical scale which was recently revalidated for use with elderly stroke patients, a move which resulted in some reordering of items[9].

The Nottingham 10-point ADL scale[10] was designed for use with stroke patients and, like the Rivermead scale, it is hierarchical but does not include additional domestic items. The Nottingham 10-point scale can, however, be administered by observation, interview or by post (Table 3).

Each of the tools has been evaluated and proved reliable. That is, the same score is attained when applied to the same patient on two separate occasions, unless a real change has occurred. The issue of sensitivity is closely related to reliability in that a measure of change is useful only if it can detect change relevant to the user.

Tools used in clinical practice must be simple but not at the expense of reliability or sensitivity. It is unlikely that one single test can usefully address all disability. Too many items can produce problems which reduce the usefulness of the tool[3].

Practitioners require tools which, in addition to their simplicity and sensitivity, give results which are easily communicable to others. The sensitivity of a tool may be compromised for the sake of simplicity. A single summary score that conveys the level of functional ability from one practitioner to another lends weight to the adoption of a hierarchical (Guttman) scale such as the Nottingham 10-point or Rivermead ADL. Although the Barthel Index is recognised to be a good measure of physical disability and requires only a few minutes to complete, it is not hierarchical and therefore does not result in a total score that gives a clear

Table 1. Items assessed in various ADL Scales

Standard scales

- Eating and drinking
- Continence/toileting
- Washing/grooming/dressing/bathing
- Transfers (such as bed to chair)
- Walking (indoors/outdoors/stairs)

Extended scales

- Domestic items: Housework/washing up/washing clothes
- Gardening
- Shopping
- Money management
- Crossing roads
- Using public transport
- Car driving/getting in and out
- Hobbies
- Reading/writing
- Employment

Table 2. Assessing levels of ability in relation to mobility

Score	Ability
3	Independent. Can walk 50 metres without help or supervision. May use walking aids but must be able to get necessary aids in position for use. Must be able to stand and sit down independently.
2	Partially independent. Requires help or supervision in any of above but can walk at least 50 metres with help.
1	Independent in wheelchair
0	Dependent. Unable to walk even with assistance.

Adapted from Mathoney and Barthel[7]

Table 3. The Nottingham 10-point ADL Scale

Task	No.	Instructions	Tick
Drink	1	Able to drink from a cup/beaker without help	
Eat	2	Able to eat a simple meal using necessary aids (food may be cut up in advance)	
Wash face	3	Able to wash and dry ha ind face at bowl/sink	
Transfer bed/chair	4	Transfer to a chair with arms from lying on bed	
'Walk' indoors	5	Able to walk (+/– aids) or propel wheelchair independently	
Toilet	6	Able to reach toilet/commode, transfer dress, clear and flush etc	
Undress	7	Remove day or night clothes, including socks and shoes	
Dress	8	Put on day clothes, including all vital fastenings	
Hot drink	9	Able to fill or lift kettle, prepare cup and drink, pour and clear up	
Get in/out bath	10	Able to get in and out of a bath (+/– aids)	

Adapted from Ebrahim, Nouri and Barer[10]

The scale is hierarchical. If the patient cannot do items 3–4 he/she probably cannot do items 7–10.

indication of the level of disability. Nevertheless, the completed assessment can be communicated either verbally or in writing in a matter of seconds.

The ability to communicate assessments of functional ability is hampered by the creation of hundreds, if not thousands, of scales already published or in use around the world[4], as practitioners in one hospital or one discipline are familiar only with their 'own' scale.

The usefulness of the scale is probably the most important issue. Measurement of functional ability should satisfy the demand for clinical audit and scientific inquiry. ADL assessments can be used for the management of individual patients, for measuring the functional consequences of specific diseases, clinical trials or for service management and audit[5].

Rehabilitation units are not widely used for the management of stroke[11], as stroke trials have yet to demonstrate their effectiveness fully[12]. Much rehabilitation is undertaken in general medical and care of the elderly wards. The principles of stroke unit management can be applied in general medical wards[13] but this pattern of management often leads to segregation of the various members of the multidisciplinary team. This may leave the patient in a void.

The importance of integrating services in rehabilitation cannot be underestimated and it is believed that adoption of a common assessment tool can help this process. Each discipline within the rehabilitation team can be accused of using its own jargon, which does little to gain cooperation and cohesion. The use of an ADL scale by all members of the team would demystify the contribution made by each of the various disciplines.

The nurse's role in rehabilitation remains vague and she is often perceived to undertake the supportive aspects of care while the therapy goes on all around her. Nurses are often excluded from completing the standardised assessment form relating to the patient's disabilities, and this may in some way contribute to the general lack of awareness of measurement tools.

The perception of the nurse as supporter rather than rehabilitator is far from the reality, however, as nurses are expected to continue the therapeutic aspects of rehabilitation at times when the therapists are not there, for example, at weekends and evenings. One study found that only about one hour per day was spent in therapy and that much of the day was spent in the ward undertaking no apparent activity[14]. The nurse, therefore, is not peripheral to

EXCLUSION FROM ASSESSMENT MAY CONTRIBUTE TO THE LOW AWARENESS OF MEASUREMENT TOOLS

the rehabilitation team; rather, she should be the key player. Nurses are in an ideal position to contribute to the rehabilitation process but the effect of nursing intervention is difficult to measure compared to the defined sessions undertaken by the physiotherapist and occupational therapist.

The Edinburgh Stroke Unit trial[15,16] demonstrated the benefits of stroke unit care in terms of accelerating the early phase of recovery. This may be attributable to earlier physiotherapy and occupational therapy rather than more therapy, but the nurse involvement was almost certain to have contributed to this process.

A measurement tool would serve to give direction to the rehabilitation process and facilitate the devising of both short and long-term goals when planning care. The tool could provide the focus for an activation programme.

Nurses play a vital part in the rehabilitation of stroke patients within a multidisciplinary team. Despite the development of numerous tools to measure functional recovery from stroke, there is no evidence that these are used other than by the practitioners involved in their particular setting.

Calls have been made for standardisation of measurement tools, as this would help communication both within the rehabilitation team and with other health-care professionals. Additionally, the use of a standardised tool would allow direct comparison between the results of interventions in different settings and help determine those factors that contribute positively to successful stroke management. **NT**

REFERENCES

[1]Tallis, R. Measurement and the future of rehabilitation. *Geriatric Medicine* 1989; 19: 31–40.

[2]Capildeo, R., Clifford Rose, F. The assessment of neurological disability. In: Greenhalgh, R.M., Clifford Rose, F. *Progress in Stroke Research 1*. London: Pitman Medical, 1978.

[3]Hamrin, E., Wohlin, A. Evaluation of the functional capacity of stroke patients through an activity index. *Scandinavian Journal of Rehabilitation Medicine* 1989; 14: 93–100.

[4]Wade, D.T. Measurement in rehabilitation. *Age and Ageing* 1988; 17: 289–292.

[5]Barer, D.H., Nouri, F. Measurement of activities of daily living. *Clinical Rehabilitation* 1989; 3: 179–187.

[6]Roper, N., Logan, W.W., Tierney, A.J. *The Elements of Nursing*. Edinburgh: Churchill Livingstone, 1985.

[7]Mahoney, F.I., Barthel, D.W. Functional evaluation: the Barthel Index. *Maryland State Medical Journal* 1965; 14: 61–65.

[8]Whiting, S., Lincoln, N. An ADL assessment for stroke patients. *British Journal of Occupational Therapy* 1980; 43: 2, 44–46.

[9]Lincoln, N.B., Edmans, J.A. A re-evaluation of the Rivermead ADL scale for elderly patients with stroke. *Age and Ageing* 1980; 19: 19–24.

[10]Ebrahim, S., Nouri, F., Barer, D. Measuring disability after stroke. *Journal of Epidemiology and Community Health* 1985; 39: 86–89.

[11]Stevens, R.S., Isaacs, B. Stroke rehabilitation units in the United Kingdom. *Health Trends* 1984; 16: 61–63.

[12]Garraway, M. Stroke rehabilitation units: Concepts, evaluation and unresolved issues. *Stroke* 1985; 16: 2, 178–181.

[13]Stone, S.P. The Mount Vernon stroke service: a feasibility study to determine whether it is possible to apply the principles of stroke unit management to patients and their families on general medical wards. *Age and Ageing* 1987; 16: 81–88.

[14]Tinson, D.J. How stroke patients spend their days. *International Disability Studies* 1989; 11: 45–49.

[15]Garraway, W.M., Akhtar, A.J., Prescott, R.J., et al. Management of acute stroke in the elderly: preliminary results of a controlled trial. *British Medical Journal* 1980; 280: 1040–1043.

[16]Garraway, W.M., Akhtar, A.J., Hockey, L. et al. Management of acute stroke in the elderly: follow-up of a controlled trial. *British Medical Journal* 1980; 281: 827–829.

Bernard Gibbon, MSc, RGN, RMN, RNT, is a lecturer, Department of Nursing, University of Liverpool

Int. J. Nurs. Stud., Vol. 30, No. 2, pp. 133–141, 1993.
Printed in Great Britain.

0020-7489/93 $6.00+0.00

Implications for nurses in approaches to the management of stroke rehabilitation: a review of the literature

BERNARD GIBBON

Lecturer,
Department of Nursing,
University of Liverpool,
P.O.Box 147,
Liverpool L69 3BX,
U.K.

Abstract—There is as yet no general agreement on how best to manage stroke rehabilitation in terms of the approaches to the management of this client group. Approaches include the Stroke Rehabilitation Unit (SRU), applying the principles of SRU management to general medical wards and the use of peripatetic stroke therapy teams. Each of these approaches has implications for nurses yet the contribution of nurses to the rehabilitation of stroke patients receives only scant attention in the literature. It is suggested that understating and undervaluing nursing leads to under use of this essential resource.

Introduction

Strokes are common, having an incidence of about 2–2.5 per 1000 per year and a prevalence of about 6 per 1000 in the U.K. (Wade, 1989). The incidence appears to be declining and this is particularly noticeable in the U.S.A. where the incidence fell to about 0.8 per 1000 per year during the 1970s. The prevalence, however, increased during this time by 20% to 6 per 1000 (Dombovy *et al.*, 1986). This high incidence and prevalence of stroke, therefore, makes it important to seek ways of effectively and efficiently managing stroke care both in terms of quality of patient care and in stroke care provision. A number of approaches, including the Stroke Rehabilitation Units (SRUs), Stroke Therapy Teams, and applying the principles of a SRU to general medical wards, have been tried. As yet there is no general

agreement on how best to manage stroke in terms of provision of stroke care services. The Kings Fund Forum meeting in 1988 suggested in a consensus statement a number of recommendations for the management of stroke (Kings Fund Centre, 1988). Since then Wade (1989) has suggested the characteristics of an ideal service which could act as criteria for use in the evaluation of stroke services.

There is a lack of scientific evidence that any intervention makes any difference and this may contribute significantly to the lack of general agreement on how best to meet the stroke patients' needs. The mainstays of stroke rehabilitation, despite the setting, are physiotherapy, occupational therapy and speech therapy, yet there is an absence of evidence of effectiveness (Barer, 1990) and a suggestion that traditional approaches to functional recovery are equally effective (Salter *et al.*, 1991).

The nurses' contribution to stroke rehabilitation appears to receive only scant attention in the literature and all too often the nurse is seen as the provider of "maintenance care" whilst the therapy goes on around her. Myco (1984), in a literature review concerning the perceived role of the nurse in stroke rehabilitation, suggested that it was time for nurses to develop the confidence, through the acquisition of knowledge and skills, to structure a specific role in stroke patient care.

Context

The needs of the stroke patient change as the patient progresses from "life supporting" care in the acute phase to the rehabilitation phase. During the acute phase the contribution of nurses to supporting life is highly valued and this phase of stroke care is consistent with the ethos of hospitals, that is, acute resolving disorders (Wade, 1989). The contribution of nurses to the rehabilitation phase is less certain. There is little doubt that nursing is valued (Barer, 1990) but the specific contribution they make is difficult to measure compared with the discrete sessions undertaken by therapists. Stroke trials, whilst researching the impact of intervention, appear to shed little light on the nurses contribution to the rehabilitation of stroke patients.

Stroke trials

The Edinburgh Stroke Trial (Garraway *et al.*, 1980a, b) is seen as a landmark in evaluating the effectiveness of stroke rehabilitation as it not only demonstrated the benefits of a SRU but also showed that such studies were possible. There remains, however, a dearth of randomized controlled trials, and differences in methodology and patient selection prevent direct comparisons being made. The Edinburgh Stroke Trial demonstrated an earlier improvement in functional recovery in stroke unit patients when compared with stroke patients randomly assigned to general wards. The improvement in functional recovery cannot be attributable to the amount of therapy given as patients in the stroke unit and general wards had similar amounts. A difference was, however, evident in that stroke unit patients commenced their therapy earlier than those in the general wards and this may explain the finding. The contribution that the nurses made to the patients in the rehabilitation phase is not documented, probably because of the difficulty of measurement, but it is not unreasonable to conclude that the finding of earlier functional recovery was in some way and to some extent attributable to nursing intervention. This earlier recovery of

functional independence was not sustained and no differences between the stroke unit patients and general ward patients was evident at 1 year.

The Dover Stroke Trial (Stevens *et al.*, 1984), where patients were randomly allocated to the SRU after the acute phase of the illness had been treated on a general ward, did not demonstrate any difference between the length of stay or of functional outcome at 4 months between stroke unit patients and general medical ward patients. At 1 year a third of the stroke unit patients were rated independent in activities of daily living compared with less than a quarter of those cared for on general wards. A higher mortality was noted in general ward patients and fewer of this group were living at home at 1 year. Patients discharged from the stroke unit generally received either out-patient appointments or day hospital follow up. This suggests the need to sustain the rehabilitation impetus. The decline in functional independence of patients discharged from the Edinburgh unit could be attributable to family overprotection (Andrews and Stewart, 1979) and prolonging the gain of early functional recovery requires patients' families to be involved in the programme. A recent randomized controlled trial in Sweden (Indredavik *et al.*, 1991) found considerable benefits to the stroke unit when outcome measures were compared with general medical wards and found to be better and significant in terms of mortality, discharge disposition and functional ability. The improvement was sustained over a 12 month period with the exception of mortality at 1 year. The stroke unit had a rehabilitation programme and a nursing programme and a stroke nurse had responsibility for liaising with the family. The stroke unit patients had treatment in addition to the rehabilitation programme and the authors suggest that this may be the best approach to stroke rehabilitation at the present time.

These trials, whilst not providing conclusive proof of the benefits of SRUs, have provided important information concerning the principles of stroke rehabilitation and these principles have been adopted as an alternative approach to stroke rehabilitation. SRUs are therefore necessary to determine principles of management which can then be transposed into general care settings. Additionally stroke therapy teams have been used in the rehabilitation of stroke patients.

Stroke Rehabilitation Units

The notion of concentrating stroke patients for treatment in SRUs is not new and has been gaining ground over the past 30 years. The number in the U.S.A. has increased considerably (Stevens *et al.*, 1984) but by comparison the number in the U.K. has remained rather small (Stevens and Isaacs, 1984). More research to establish their value is frequently called for and may be a prerequisite of such a development (Garraway, 1985). SRUs differ in a number of criteria but they must be discriminated from the "Stroke Unit" to which patients are transported for therapy sessions. The assumption upon which SRUs are based is that patients admitted to a specialized unit might fare better (Feigenson, 1979). These units all placed the major emphasis upon rehabilitation and generally operated a selection policy based on admission of those considered to benefit from intensive rehabilitation. Few units are able to admit all stroke patients admitted to their hospital and this has the effect of units concentrating on the "middle band of patients", i.e. the very severe and very mild cases excluded.

The advantages of SRUs are many (Feigenson and McCarthy, 1977; Stevens, 1989). Stroke patients are given high priority and do not have to compete with patients who are

ostensibly more ill (Stevens *et al.*, 1984) and therefore receive full attention by an enthusiastic team. Patients and their relatives are aware of the "expert team" which in itself offers reassurance and this is reinforced as carers are involved in the patient's programme and progress. Additionally bed turnover in acute wards is maintained. The SRU enhances team intercommunication and group effort overcoming some of the traditional obstacles to care (Spiby, 1988). Additionally the value of SRUs has been recognized as being research centres (Langton Hewer and Holbrook, 1983; Millikan, 1979).

Disadvantages of SRUs appear to be few in number. The movement of the patient from the ward of admission to the unit, perhaps on a different site, is unpopular with patients. Concern is also expressed that those patients not admitted to the SRU may be disadvantaged. It may also be that general ward staff lose interest in stroke rehabilitation knowing that the patient will be transferred.

SRU principles in general medical wards

An alternative approach in the care and management of stroke patients is to apply the principles of a SRU to the general medical wards. Stone (1987) reports on the feasibility of this approach and suggests considerable benefits can be obtained.

A multidisciplinary stroke therapy team co-ordinated by a medical registrar managed the care of stroke patients. The team met weekly and additionally developed a family support service. No additional staff were required and a ward did not need to be designated as a "stroke ward". Nurses were not part of the peripatetic team but were involved in all stages of the programme. Teaching sessions by therapists were arranged for nurses regarding positioning and patient handling skills. Benefits of this approach: speedy referral to therapists; development of the team approach; provision of better information and psychological support; provision of more speech and occupational therapy appear to compare favourably with the traits of and studies undertaken in SRUs (Langton Hewer and Holbrook, 1983) and go some way to satisfying the identified characteristics of an "ideal service" (Wade, 1989). Comparison of the SRU principles in general medical wards (Stone, 1987) with the stroke trials undertaken in SRUs (Garraway *et al.*, 1980a,b; Stevens *et al.*, 1984) are difficult because of differences in methodology. This approach did, however, overcome the problems of rejecting patients, becoming "overspecialized" and from becoming isolated from the rest of the hospital. The observation that the staff of two wards expressed an interest in having "dedicated" stroke beds suggests that when stroke patients were rehabilitated in general wards, general ward staff sustained their interest in stroke rehabilitation. The service does, however, appear to be dependent upon the commitment of the medical registrar. This was corroborated by Stone (1989).

The feasibility of applying the SRU principles in a general medical ward is in essence dependent upon the creation of a stroke therapy team, the use of such teams should not be ignored as it is unlikely that one management policy will suit all districts.

Stroke therapy teams

There is a dearth of information pertaining to stroke therapy teams in the literature. The organization of stroke services within each district appears to vary with the peripatetic stroke therapy team, as defined by Stone (1989) as comprising a medical registrar, physiotherapist, occupational therapist, speech therapist and medical social worker, being one of the

approaches. This group takes lead responsibility for managing the rehabilitation of the stroke patient. The admitting physician may continue to take responsibility for the management of the patient. Meetings or case conferences are usual practice to set the care plan and it is at this point that nursing staff become involved in the team. The benefits of this approach are as for the benefits of applying SRU principles to general medical wards and additionally claims are made that a stroke therapy team is more likely to undertake research and develop better ways of managing stroke patients than general wards. It is suggested that the stroke therapy team can give support to nurses but it is unclear as to what this support need is. The strength behind the case for developing a stroke therapy team rests in the notion that it is easier to develop this service than traverse the local administrative and political difficulties associated with developing a SRU.

The disadvantages of the stroke therapy team approach include conflicts between the medical consultants and the leader of the stroke team though evidence exists that such conflicts can be overcome (Bates *et al.*, 1981).

Discussion

Studies to date have not provided sufficient conclusive evidence to suggest a "one right" approach to the provision of stroke care services. Frequent calls are made for further research though methodological issues represent significant obstacles to achieving this goal (Garraway and Prescott, 1977). The principles of stroke rehabilitation have now reached consensus although scientific evidence is not yet available. It is contended that there are three principal ways in which stroke patients can be helped: therapy, caring and counselling. Each of these elements has implications for nurses.

The Kings Fund Consensus (1988) drew attention to professional misunderstandings and rivalry, poor communication and a lack of continuity of care. Nurses' traditional role has been one of "care" but the lack of definition of what "care" is in a rehabilitation context (Myco, 1984) limits the understanding of what nurses can contribute to the care of this particular client group. Despite this nurses are frequently the occupational group that are with the patients the most, expected to reinforce the rehabilitation programme (Henderson *et al.*, 1990) and liaise with the patient's family. More recently the therapeutic nature of nursing has received attention (McMahon and Pearson *et al.*, 1991) and the importance of establishing the appropriate organizational framework is emphasized (Wright 1991).

Whilst little attention to nursing input to stroke rehabilitation is made a recurrent theme in the literature pertaining to stroke intervention trials, the theme is that of providing additional (and thus specific) teaching sessions for nurses, though the need for education for other occupational groups is not documented (Stone, 1987; Hamrin, 1982; Henderson *et al.*, 1990). This raises a number of concerns which should be of interest to nurses and nursing. In particular what evidence exists to support the notion that nurses are lacking in the appropriate knowledge to contribute to the rehabilitation of stroke patients. The nurses' willingness to participate in tutorials is evident as is the eagerness to learn (Stone, 1987), but this does not provide evidence that knowledge was lacking. No objective data are put forward to demonstrate an improvement in the nurses' knowledge following the tutorials. The tutorials for nurses may serve to update knowledge or acquire the language of the "therapeutic team" and as such may enhance team building which is a prerequisite of the multidisciplinary approach.

Hamrin (1982) found an improvement in nurses' attitudes following the introduction of

a patient activation programme with concurrent tutorials but changes in the nurses knowledge are not appraised. It makes sense to provide information/updating as a forerunner to any change in the intervention as this may allow individual members of the multidisciplinary team to articulate their knowledge using a common language. If, however, only one group is to receive the information/education it does not give credibility to the equity of members of the multidisciplinary team. Wright (1991) suggests that this lack of equality in reality may be a hindrance to the development of nursing as a therapy.

The nurse also appears disadvantaged as she is peripheral to the stroke therapy team, that is, the multidisciplinary team tends to have stability of its membership with respect to the medical and paramedical staff but the nurse member differs according to the ward the patient is on and, appropriately, according to who is the Primary Nurse. The role of the nurse in SRU may be assumed to be one of "full membership" of the stroke therapy team but there is no evidence that this is so. It is acknowledged that reports from stroke trials are concerned with patient outcomes rather than the nurses' roles but the omission of detail concerning nurse input does little to define the parameters of their responsibility. Nurses have been given specific responsibilities within SRUs including information giving to patients and relatives and participation in the screening of patients for admission to the unit (Indredavik *et al.*, 1991). It is noteworthy that this report refers to the "rehabilitation and nursing programme" giving the impression that the two are different.

Myco (1984) drew attention to the need for nurses to define the parameters of their contribution in rehabilitation and Henderson *et al.* (1990) suggested that a specific post registration rehabilitation course for nurses be established. Whilst it is self-evident that a general nurse training course cannot include all matters that a qualified nurse may encounter there is a lack of rationale as to why rehabilitation cannot be part of the preregistered nurse training programme thus obviating the need for specific tutorial support once qualified and in the clinical area. A post-registered course presupposes that the boundaries of nurse intervention have been determined and that a syllabus could be established; this clearly presents a dilemma. If the assumption is true that nurses lack the necessary knowledge then it must be asked why nurse education has failed to include this as part of the training programme as stroke is a very common condition and rehabilitation is a concept that applies to many different client groups. It may be that nurses see rehabilitation as therapy and as such beyond the role of the nurse. This parochial view is not tenable as rehabilitation is more than therapy and the nurse can play a key role in the activation of stroke patients (Barer, 1990; Henderson, 1990). This is not to suggest that nurses should become substitutes for therapists but the importance of continuity of care and consistency of approach promotes the notion of nursing as a therapy. The goals of care must be consistent across each of the disciplines if successful rehabilitation is to be achieved.

It may be contended that if nurses require education in the principles and practice of rehabilitation then this should be taught by nurses. Utilizing other occupational groups may enhance team co-operation but it perpetuates the unequal relationship within the team. It may also perpetuate professional rivalry and misunderstanding as therapists may perceive nurses as encroaching on their role. Nurses may see themselves as becoming substitute therapists and become resentful. Cox (1973) suggested the rehabilitation nursing was developed to compensate for the shortfall of therapists and whilst this may be true it does not make sense to have the duplicity of effort that this would produce. It may also be that if nurses see themselves as substitutes, i.e. second best, then this may give rise to negative or ambivalent feelings. Hamrin (1982) and Gibbon (1991), studying

nurse attitudes to stroke rehabilitation, found a high degree of ambivalence towards activation programmes.

The need to work as a team is not in doubt but nurses must establish their role in stroke care. If the three ways in which stroke patients can be helped are by therapy, care and counselling nurses must be able to quantify and qualify what they contribute in (each) of these areas. Nursing as caring in a rehabilitation context must inevitably include a therapeutic dimension and this may also embrace the area of counselling. The difficulty of measuring the contribution of these three elements has been identified (Stone, 1989) and separating activity undertaken in stroke care may not be possible, caring and counselling are therapeutic.

Successful stroke rehabilitation is dependent upon providing a continuously stimulating environment rather than being dependent upon discrete sessions of therapy (Barer, 1990) and it is in this domain where nurses may take the lead. Nurses are with patients continuously but studies have identified a paucity of activity in rehabilitating patients (Tinson, 1989; Ellul, 1991, personal communication) with much of the patients' day spent in inactivity staring into space. A balance needs to be struck between the physically exhaustive demands of activation and the need to maximize the full rehabilitation potential. Defining activities as rehabilitative or non-rehabilitative presents difficulties but passive patients having their needs met by others are unlikely to reach independence (Miller, 1985).

The nurse is also ideally placed to relate to relatives by both providing information and facilitating their involvement in care. Much value has been attributed to involving relatives (Stone, 1989) and family involvement through voluntary stroke support schemes has demonstrated benefits.

Changes in the organization of nursing at ward level are valuable in promoting the idea of nurses being the primary carer as Primary Nurse who acts to liaise with all other members of the multidisciplinary team in addition to the patient's relatives. The Primary Nurse, who assumes responsibility for the nursing care of the patient throughout their duration of stay (MacGuire, 1989), is able to ensure the compatibility of the nursing and therapeutic team goals. In essence the care plan embraces the collective goals. The Primary Nurse also liaises directly with the community nursing services, via the District Nurse Liaison Officer, thus ensuring the continuity of care (Armitage, 1991) necessary to maximize the rehabilitation potential of the patient and the rehabilitation impetus of the nurses.

The identification of the specific role functions for nurses in SRU trials (Indredavik *et al.*, 1991) suggests that the development of clinical nurse specialist roles is both feasible and appropriate. Clinical nurse specialist posts have been developed in a number of clinical specialities and given the size of the stroke population it is not unreasonable to develop a stroke rehabilitation nurse post as a clinical nurse specialist.

The stroke rehabilitation nurse would be well placed to promote the adoption of the principles of SRU management in general wards. Additionally she would be able to offer support to nurses and provide specific education and training about the nurses' role. Further development of the nursing role could result from appropriate research undertaken by and in conjunction with the clinical nurse specialist.

The absence of reference to the nurses' role is suggestive of undervaluing the contribution that the nurse can make and may lead to nurses being under or inappropriately used. The failure to make specific reference, when calling for more research relating to the effectiveness of approaches to stroke rehabilitation, to nursing input understates the value of nursing to stroke rehabilitation. Nurses must share responsibility for this omission and seek ways to define their role in the rehabilitation of stroke patients.

Conclusion

Although a number of approaches to the organization of stroke care services have been tried no substantive evidence exists to support one approach in preference to others. The nurses' contribution to the rehabilitation of stroke patients is understated which can lead to feelings of being undervalued and under used. Nurses are seen to require additional knowledge to participate in activation programmes suggesting the need for better preparation of nurses in terms of appropriate education. The parameters of nursing's contribution to stroke rehabilitation remain unclear and nurses must seek ways to establish their role. The lack of role definition suggests the need to develop stroke rehabilitation nurses as clinical nurse specialists in order to develop the role through practice and research and in so doing recognize and enhance the nurses' contribution. Recognition of the nurses' contribution to stroke rehabilitation may help conclusions to be drawn regarding the most appropriate approach to stroke rehabilitation.

References

Andrews, K. and Stewart, J. (1979). Stroke recovery: he can but does he? *Rheumatology and Rehabilitation* **18**, 43–48.

Armitage, S. K. (Ed.) (1991). *Continuity of Nursing Care*. Scutari Press, London.

Barer, D. H. (1990). Stroke rehabilitation: panacea or placebo. *Geriat. Med.* **20** (9), 45–49 (part 1).

Bates, T., Hoy, M., Clarke, D. G. and Laird, P. P. (1981). The St Thomas's Hospital terminal care support team. A new concept of hospice care. *Lancet* **1**, 1201–1203.

Cox, B. G. (1973). *Care and Rehabilitation of the Stroke Patient*. Charles C Thomas, IL.

Dombovy, M. L., Sandok, B. A. and Basford, J. R. (1986). Rehabilitation for stroke. *Stroke* **17** (3), 363–369.

Ellul, J. (1991). Levels of engagement of stroke patients in rehabilitation settings. Personal communication.

Feigenson, J. S. (1979). Stroke rehabilitation: effectiveness, benefits, and cost. Some practical considerations. *Stroke* **10** (1), 1–4.

Feigenson, J. S. and McCarthy, M. L. (1977). Guidelines for establishing a Stroke Rehabilitation Unit. *New York State J. Med.* **77**, 1430–1434.

Garraway, M. (1985). Stroke rehabilitation units: concepts, evaluation and unresolved issues. *Stroke* **16** (2), 178–181.

Garraway, W. M., Akhtar, A. J., Prescott, R. J. and Hockey, L. (1980a). Management of acute stroke in the elderly: preliminary results of a controlled trial. *Br. Med. J.* **280**, 1040–1043.

Garraway, W. M., Akhtar, A. J., Hockey, L. and Prescott, R. J. (1980b). Management of acute stroke in the elderly: follow-up of a controlled trial. *Br. Med. J.* **281**, 827–829.

Garraway, W. M. and Prescott, R. J. (1977). Limitations of the controlled trial in health care. *Health Bull. (Edinb)* **35**, 131–134.

Gibbon, B. (1991). A reassessment of nurses' attitudes towards stroke patients in general medical wards. *J. Adv. Nurs.* **16** (11), 1336–1342.

Hamrin, E. (1982). Attitudes of nursing staff in general medical wards towards activation of stroke patients. *J. Adv. Nurs.* **7**, 33–42.

Henderson, E. J., Morrison, J. A., Young, E. A. and Pentland, B. (1990). The nurse in rehabilitation after severe brain injury. *Clin. Rehabilitation* **4**, 167–172.

Indredavik, B., Bakke, F., Solberg, R., Rokseth, R., Haaheim, L. L. and Holme, I. (1991). Benefits of a Stroke Unit: a randomised controlled trial. *Stroke* **22** (8), 1026–1031.

Kings Fund Centre (1988). *The Treatment of Stroke: a King's Fund Forum Consensus Statement*. Kings Fund Centre, London.

Langton Hewer, R. and Holbrook, M. (1983). The Bristol Stroke Unit. *Health Trends* **15**, 15–18.

MacGuire, J. (1989). An approach to evaluating the introduction of primary nursing in an acute medical unit for the elderly. Part 1: Principle and practice. *Int. J. Nurs. Stud* **26** (3), 243–251.

McMahon, R. and Pearson, A. (Eds) (1991). *Nursing as Therapy*. Chapman and Hall, London.

Miller, A. (1985). Nurse patient dependency: is it iatrogenic? *J. Adv. Nurs.* **10** (1), 63–70.

Millikan, C. H. (1979). Stroke intensive care units. *Stroke* **10** (3), 235–237.

Myco, F. (1984). Stroke and its rehabilitation: the perceived role of the nurse in the medical and nursing literature. *J. Adv. Nurs.* **9**, 429–439.

Salter, J., Camp, Y., Pierce, L. L. and Mion, L. C. (1991). Rehabilitation nursing approaches to cerebrovascular accident: a comparison of two approaches. *Rehabilitation Nurs.* **16** (2), 62–66.

Spiby, J. (1988). A stroke of bad luck. *Nurs. Times* **84** (29), 21.
Stevens, R. S. (1989). Stroke Units. *Clin. Rehabilitation* **3**, 235–237.
Stevens, R. S., Ambler, N. R. and Warren, M. D. (1984). A randomized controlled trial of a stroke rehabilitation ward. *Age and Ageing* **13**, 65–75.
Stevens, R. S. and Isaacs, B. (1984). Stroke Rehabilitation Units in the United Kingdom. *Health Trends* **16**, 61–63.
Stone, S. P. (1987). The Mount Vernon stroke service: a feasibility study to determine whether it is possible to apply the principles of stroke unit management to patients and their families on general medical wards. *Age and Ageing* **16**, 81–88.
Stone, S. P. (1989). Stroke therapy teams. *Clin. Rehabilitation* **3**, 239–241.
Tinson, D. J. (1989). How stroke patients spend their days. *Int. Disability Stud.* **11**, 45–49.
Wade, D. (1989). Organisation of stroke care services. *Clin. Rehabilitation* **3**, 227–233.
Wright, S. (1991). Facilitating therapeutic nursing and independent practice. In *Nursing as Therapy* (McMahon, R. and Pearson, A., Eds). Chapman and Hall, London.

(*Received* 3 *December* 1991; *in final form* 20 *January* 1992; *accepted for publication* 17 *March* 1992)

Journal of Advanced Nursing, 1994, 20, 469–476

Stroke nursing care and management in the community: a survey of district nurses' perceived contribution in one health district in England

Bernard Gibbon MSc RGN RMN RNT
Lecturer, Department of Nursing, University of Liverpool, PO Box 147, Liverpool L69 3BX, England

Accepted for publication 2 December 1993

GIBBON B. (1994) *Journal of Advanced Nursing* **20**, 469–476
Stroke nursing care and management in the community: a survey of district nurses' perceived contribution in one health district in England
Little appears to have been written about how district nurses perceive their role in relation to the care and management of stroke patients in the community despite the high number of stroke patients on their case loads. A qualitative study using a semi-structured interview was undertaken with a convenience sample of 30 district nurses representing each locality in one health district in England. Findings suggest that district nurses do not have a major role in the rehabilitation of stroke patients in the community and generally become involved in their care once the patient's chronicity has reached the point of inability to meet self-care demand, or the carer is unable to cope.

INTRODUCTION

Stroke is a common disabling condition and each health district can expect to have some 750 patients with moderate to severe disability within its boundaries. Recovery from stroke can be protracted and incomplete but there is some evidence (Tangeman *et al.* 1990) that further gains in independence can be made following discharge from hospital. Most authorities agree that recovery is greatest during the first 3 to 6 months following stroke though there is some suggestion that additional recovery can be achieved beyond this time. Conversely there is evidence that the independence that stroke patients have achieved in hospital is not maintained following discharge home. The usual explanation for this is overprotection of the patient by relatives. The importance of independence lies not only in quality of life for the patient and his/her family; independence can also reduce the likelihood of long-term complications. The benefits are significant in saving health service resources and immeasurable in terms of the patient.

Following discharge from hospital many stroke patients return to the care of their families who in turn look towards the health and social services to offer support both physically and emotionally. A number of patients return to the day hospital for continuation of rehabilitation services whereas others receive intervention from the community services. A survey was undertaken to determine how the district nurse perceived her/his contribution to the rehabilitation and management of stroke patients in the community.

LITERATURE REVIEW

Stroke patients constitute a significant proportion of all patients visited by the district nurse. Previous studies have found that between 6% and 11% of district nurse visits are to stroke patients, for example Kratz (1978) reported a district nurse stroke case load as 10·67% whereas Poulton (1981) found 6% had a primary diagnosis of stroke. Whilst stroke patients figure highly as a diagnostic group on district nurse case loads little appears to have been written about how district nurses perceive their role in relation to this group. Hudson & Hawthorn (1989) suggested, following the King's Fund forum on the treatment and management of stroke (1988), that district nurses were placed to act as 'key worker' in providing an integrated service.

As yet there is little evidence that district nurses have risen to assume this role, with recent studies finding that district nurse intervention is mainly concerned with

maintaining the patients' personal hygiene rather than rehabilitation (Watkins *et al.* 1993) and that visits, in the spirit of skill mix, are undertaken by nursing auxillaries.

Early discharge from hospital

Community nursing services have been reorganized since the study by Kratz (1978) and indeed the present imperative is that of care in the community. A consequence of these developments is an increase in the number of patients discharged early from hospital and the impact of this strategy on stroke patients and their families is yet to be studied. Debate has continued on where best to manage stroke patients (Wade & Langton-Hewer 1985) and, despite recent trials suggesting that effective rehabilitation can be provided in the community (Wade *et al.* 1985), no general agreement has been reached.

Nursing intervention has been recognized as essential in the acute, life sustaining, phase of stroke but nursing contribution in the rehabilitation phase is less clear. This is especially so in relation to the district nurse's contribution to stroke rehabilitation in the community, and the fundamental question of how district nurses perceive their role in stroke care and management remains.

THE STUDY

A survey was undertaken to determine how the district nurse perceived her/his contribution to the rehabilitation and management of stroke patients in the community.

Interviews

A semi-structured interview schedule was devised as the data collection tool which would allow the major questions to be asked the same way each time but allow the interviewer to alter the sequence and probe for further information (Fielding 1993). The thrust of the questioning centred upon the clinical decision making of the respondent in relation to rehabilitation interventions (see Appendix A). Interviews were taped and transcribed verbatim. Additionally a profile of the district nurses was collected to determine if the preparation and length of experience as a district nurse influenced in any way the respondents perceived contribution.

Sample

The survey was undertaken in a health district with a population of 350 000 people. The health district boundary is not coterminous with the Local Department of Social Services boundaries and hence the sample of respondents was selected from each of the localities within the health district.

Access was granted at a senior nurse managers meeting early in 1993. A convenience sample of 30 district nurses representing each locality within the health district, covering both day and night duty, was identified.

Data collection

Twenty-eight respondents were interviewed, of whom 16 were on day duty and 12 on night duty. Two respondents were unable to attend the prearranged interview as a consequence of demands in the clinical area.

Individual interviews, lasting 20–30 minutes, were conducted with 14 district nurses, of which 12 were taped and two completed with the use of notes. One group-focused interview, was conducted with 12 district nurses due to the constraints of availability. The anticipation of a fuller discussion in the group situation was not fully realized, with information gained in the group session similar to that gained in individual interviews. Given the number of participants it was not possible to tape this session, reliance being placed on notes only.

Analysis

Transcribed interview tapes were subjected to latent content analysis (Field & Morse 1985) in order to elicit the major thrust of the response in the context of the statement. A number of themes emerged from the responses which are illuminated by direct reference to the subject.

FINDINGS

Profile of respondents

Respondents' experience of working as a district nurse (DN) varied from as little as 2 years to more than 20 years, with most respondents having more than 8 years continuous community service.

All had undertaken the district nursing course with the exception of one respondent, but very few thought that the course had prepared them to work specifically with this client group in the community. Most acknowledged that the subject of stroke care had been included in the course but did not feel that the teaching session(s) added much, if anything, to their previous knowledge and experience gained in the hospital setting during their general nurse training. A small number of respondents recalled the sessions on stroke as being taught by external lecturers from other disciplines, notably the physiotherapist, and these sessions concentrated on positioning and lifting.

All respondents without exception made a conscious decision to work as a DN rather than a hospital nurse and for most the reason for opting for this career route was the satisfaction gained through the continuity of care and undertaking direct nursing interventions in a one to one relationship. A number of respondents identified the

autonomy that DNs assume and highlighted their strength in clinical decision making as reasons for their career choice.

Caring in the person's home

A recurring theme concerned caring for patients in their own home, which was valued by DNs as the place where patients' wished to be cared for. Whilst they acknowledged the benefits of hospital admission for reassurance and 'specialist care' there was a strong feeling that once patients were over the initial or acute phase they should be cared for in their home environment. Precisely how this view correlated with rehabilitation interventions in the current context of community services was not clear.

District nurses viewed themselves primarily as a supporter to the carer rather than undertaking direct care, especially for chronic patients who were not deemed to have a 'nursing need'.

Mixed feelings were expressed in relation to DNs' subjective experience of caring for stroke patients in the community. Some found their role challenging whereas others identified it as frustrating.

Burden

Stroke patients were perceived to be few in number on district nurses' 'books', but those that were on the case load were considered to be high in dependency. Only one district nurse felt that she had a number of stroke patients and quantified this as approaching 10. Most DNs commented upon the burden of stroke patients in terms of the nursing time they take:

... they are mostly the 'heavies' which take up most of the time.

This notion of 'heavies' appeared to have been translated into occupational jargon:

... we call it the 'McAlpine run' because it is so heavy with all the stroke patients.

'McAlpine' refers to the construction company of the same name and is synonymous with hard physical work. This was particularly noteworthy with regard to the DN night service, which operates as a separate service from the day service and the shift appears to commence with a 'back to bed' service.

All respondents reported that the stroke patients they visited were each regarded as chronic strokes. This phrase was considered to mean both those whose stroke had occurred some considerable time previously and who were now physically dependent in terms of activities of daily living, and those whose stroke had occurred recently but who had been left with a significant level of functional ability which was considered intractable. The emphasis was upon physical disability but some respondents referred to the psychosocial consequences of stroke:

There is a lack of support for the emotional side ... little counselling [is] undertaken.

Purpose of home visits

In a number of instances the DN did not know the patient had had a stroke and this was particularly so if the stroke had occurred some time ago. This finding should not necessarily be viewed negatively as DN intervention is concerned with meeting nursing need rather than medical diagnosis. The medical diagnosis was invariably irrelevant to the reason for DN visits. Referrals usually came from the general practitioner or the hospital and in either instance the DN was requested to undertake an assessment visit.

The information that was conveyed to the DN prior to the visit was generally limited and frequently would not include past medical history. Variance was reported in the information conveyed. Consensus was reported on information pertaining to name, address and age though many respondents could recall incidents of errors in this information. Some requests contained information pertaining to diagnosis or state of the patient, whereas others simply identified the facet of intervention requested, e.g. catheterized. Social information was sometimes conveyed, e.g. 'lives alone' or 'lives in 3rd floor flat with son'.

Only one respondent reported having referrals solely for the purpose of rehabilitation. A number of respondents referred to 'promoting independence' as a secondary function of the visit, though this was not universally seen as either rehabilitation or the role of the nurse:

... I suppose that you go into this grey area as to whether it is a nursing duty as such or a rehabilitation role.

Most respondents saw themselves as dealing with chronicity rather than promoting independence, considering that referrals to them generally corresponded with highly dependent elderly individuals. Some categorically stated that it was not their job to do rehabilitation:

... we are not going in to promote any *more* independence. (emphasis by respondent)

This was taken to mean that the DN saw her role as maintaining the person's independence rather than commencing an activation programme. Others appeared to express concern that commencing intervention may give rise to patients and their relatives expecting rehabilitation or DN involvement in care:

... to start with we try not to put too much care in to start with, to see if the family can cope, we counsel the family to see if they can cope.

Early intervention

The notion of intervening early, especially where this meant providing equipment, such as lifting aids, resulted in DNs attempting to determine the primary carer's ability to cope without resources, prior to offering them if they failed to cope:

... once you have an aid or service in it is hard to withdraw.

Some respondents also indicated that early referral and intervention could lead to problems of withdrawal:

... if you have them from the start it is hard to back off from giving care.

Respondents almost always felt that once they had a patient on their books, of this type, that they would have them for ever, only discharging them if the patient moved area, took up residency in a nursing home or died.

Visits to this diagnostic group were primarily to undertake 'assessment' visits in order to determine 'nursing need'. Whilst DNs appeared to have a universally accepted definition within their kind of what constituted nursing need there was some difficulty in determining the boundaries of this concept other than in tangible task terms such as recommending the provision of aids, other services or bathing.

Frequent nursing needs

The most frequently reported nursing need was that of bathing/personal hygiene and in such instances the on-going visits would be undertaken by a nursing auxillary. A number of respondents stated that:

... if you wish to *really* find out about stroke patients in the community you should interview the auxillaries ... they are the ones ... the ones that *really* know, the ones that are going in week after week. (emphasis by respondent)

The assessment documentation is of a standard format and is closely allied to the Activities of Living model of nursing (Roper *et al.* 1985). No additional assessment forms were reported to be in use for strokes or any other client group, and measurements of patients' progress was not related to any particular objective rating scale.

Determining the subsequent frequency of visits when a nursing need had been identified, that is the clinical decision making, was a matter of professional judgement on behalf of the visiting DN. Factors influencing frequency of visits were related to the level of the patient's dependence, ability of the carer to cope and the need for specific interventions, e.g. bowel management. The frequency and intensity of interventions appeared in part to be influenced by the resilience of the carer in that DNs saw themselves as intervening once carers had demonstrated the inability to cope:

... we see how they get on ... how they cope basically and if they can't then we will.

Even in these situations the DNs often see themselves as providing a service to the carer rather than in direct nursing intervention. Offering support to the carer was sometimes by way of education, by showing relatives how to do things. Other support was by obtaining services or equipment and by facilitating respite care or the involvement of other agencies.

Rehabilitation

Rehabilitation following the stroke was either considered to have been completed or was on-going at a day hospital. It was not clear in this study how many stroke patients are simultaneously receiving DN intervention and attending the day hospital. Where patients were referred to the day hospital following discharge from inpatient care, DNs were of the view that day hospitals quickly reduced the patients' attendance and this served to reinforce the chronicity perspective. DNs considered stroke patients, amenable to further gains in functional independence, should be invited to attend the day hospital for rehabilitation. Additionally, DNs saw hospital admission for stroke as a positive event, with patients considered to prosper from the perceived intensive hospital-based rehabilitation:

I think all stroke patients should be admitted for intensive treatment, that's where they get them going.

Other DNs, whilst considering hospital admission to be beneficial, also regarded the admission as symbolic:

I think all of them [stroke patients] should be admitted for 4 or 7 days unless it is very mild, if only to offer reassurance and you would have been seen to have been investigated. If a doctor had visited at home and looked at you and said you have had a stroke and nobody had taken a blood test ..., OK a blood test might not show anything, but you [would] feel something had been done.

This response serves also to highlight the credibility given to hospital consultants as being 'specialists' and identifies the reassurance that people often get from such an encounter. Reassurance was considered important in promoting the confidence of carers to assume some or total responsibility for the care of the stroke patient at home. A lack of confidence in the carer was considered to result in over-protection:

There is not enough help for carers, all too often they do not know how to handle the patient, I don't just mean physically but emotionally as well. They sometimes appear to smother the patient and wrap them in cotton wool, then the patient does less and less.

Preparation for discharge

DNs also reported various levels of preparation for discharge home following stroke and in part this was related to source of discharge. Stroke unit discharges and those being discharged from the care of the elderly units were seen as being more structured, with the patient frequently having a home assessment prior to discharge. Discharges from medical wards appeared to lack forward planning.

There was little expectation that the patient would make further gains in independence following discharge, irrespective of the source. If the potential for further gains existed then it was expected that the patient would either return to the hospital or attend the day hospital. There was universal agreement that the community therapy services were over stretched:

They might get community physio if they are lucky but there is a 6 month waiting list for OT. The community physio is very good but she can only make a one off visit and make a list of exercises and that is it.

When asked specifically what more, if anything, as a DN they could do in terms of rehabilitation responses varied from

We could do more, such as mobility or exercises

to the surprised:

What could *we* do? ... No ... see we don't rehabilitate them, they have OTs and physios who rehab them and they go back to the hospital for rehab. (emphasis by respondent)

It is noteworthy that this view was not attributed by the respondent to be due to either lack of skills or inappropriateness of the activity as a nursing function but due to the lack of time. This point was made by other respondents:

We haven't got the time to go in and work them and take them up and down stairs, that's why they go back to hospital and day units.

More patient activation

Many respondents did not see themselves as doing anything more than they were currently doing, but other respondents felt that DNs should be more actively involved in patient activation and that more stroke patients should be referred to the service:

I think we could do more for mobility with goal setting.

This respondent also went on to suggest that more could be done in regard to psychosocial aspects of care via counselling. Stimulating the patient was another emerging theme, such as motivating patients to get out of the chair:

... movement to music for example.

A number of respondents referred to their lack of preparation to undertake rehabilitation and felt that more should be done to update them upon handling skills and techniques:

I think they should update us ... tell us how to handle or move them ... when to push for independence ...

One respondent noted that when lifting and handling techniques were taught those they practised on were all fit and able, and suggested that instruction and practice was needed on how to handle disabled people. The updating request was not limited to physical care but about rehabilitation in more holistic terms.

DISCUSSION

There is little doubt that stroke patients constitute a considerable demand upon the district nursing service and that the demand is likely to increase rather than decrease in the current climate of care in the community (Department of Health 1990) and early discharges home from hospital. Indeed much debate has centred upon the most appropriate place to manage stroke care – hospital or home (Mulley & Arie 1978) – and this debate continues in the 'new NHS' with purchasers eager to know the efficacy of a particular service or intervention (University of Leeds, University of York, Royal College of Physicians 1992).

District nursing interventions for stroke patients were found to arise as a result of the person's inability, or that of their primary carer, to cope with the dependence of the patient in their activities of daily living. That is, the DN is concerned with chronicity rather than rehabilitation and this is manifested in the concept of dependency. The more highly dependent the patient is on others is not, however, the determinant of DN intervention; it is the ability of the person's primary carer to cope with the demand placed upon them.

This issue is accepted by the DNs and is based upon the construct of caring for the family unit rather than the individual. This is in keeping with the professional requirements of approved courses of preparation of DNs. Twigg (1989) refers to the 'carers as co-workers' model where agencies (i.e. DNs) work in parallel with the informal sector (i.e. carers), aiming at a cooperative and enabling role. This model can be seen as instrumental in that maintaining a high carer morale will lead to the likelihood that care will continue to be offered.

Preparation of carers

Carers have expressed concern over their lack of preparation for the role of caring for a dependent relative (Anderson 1992). Given that DN intervention usually arises as a result of the patient's increasing dependence

and carer's decreasing ability to cope, the current system, which appears to place reliance upon the hospital staff to prepare relatives for the immediate post-discharge period, does little to help relatives learn the skills which are required to care for this challenging task. This situation appears to be complicated by the reluctance of DNs to become involved in giving care and in some instances providing aids for fear of the patient becoming dependent upon them and the DNs not being able to withdraw either aids or services.

Stroke patients are vulnerable to regression in self-care activities on discharge home to primary carers. This is attributable to the lack of preparation of carers for the role and a lack of confidence (Anderson 1992) leading to overprotection (Garraway et al 1980a, 1980b), so that patients do not carry out those activities of which they are capable (Andrews & Stewart 1979). Indredavik *et al.* (1991) highlighted the need to involve carers in the discharge planning of stroke patients from a stroke unit. Hudson (1988), in a similar community study, noted that some carers felt that they were at the mercy of the visiting nurse, who sometimes appeared to ignore the advice of the carer even when the carer believed they had found out what worked best for them and the patient.

Nursing need

'Nursing need' is a difficult concept to define, given the lack of definition as to what nursing is and especially so in the area of rehabilitation. DNs in this study appeared to have an understanding as to what 'nursing need' was and this was most often expressed in tangible terms, such as bowel management, personal hygiene or catheter care. Rehabilitation was not universally accepted as a legitimate nursing role. Some respondents maintained they could do more if they had the time and others dismissed the notion as being beyond their role. There was greater recognition for the notion of maintaining independence rather than promoting independence. Hospitals were symbolized as the venue for 'intensive' treatment and rehabilitation, though it was not clear what interventions they regarded hospital nurses as undertaking in this domain.

Previous studies have identified particular 'patient types' that nurses prefer to care for, for example Kratz (1978) found nurses were comfortable visiting those who were dying and those who were getting better, whereas Stockwell (1972) suggested that nurses preferred to care for patients who get better quickly and did not like caring for terminally ill patients. Hockey (1968) found that district nurses liked giving care to old chronic patients, and Hamrin (1982) found nurses held negative attitudes towards stroke patients. Whilst each of these appear to be different (Hudson 1988) the common theme is that of 'tangibility', when nurses see that there is something real to do they will do it. Rehabilitative interventions have a rather invisible tenure when compared with dressing a wound.

Rehabilitation

The low priority apparently given to rehabilitative interventions by DNs may reflect a lack of preparation for the role and or a lack of policy or clinical leadership in regard to this client group. It may be argued that professional boundaries, especially those determined informally in hospital settings during the DN's general nurse training, maintain the view that rehabilitation is not a part of the nurse's role. To what extent this is maintained by, for example, the therapy and medical services is not clear and represents an area for further research. It may be that failure to involve DNs in rehabilitation is a missed opportunity (Watkins et al 1993).

If the patient career following stroke is visualized as a continuum with one pole representing immediate post-stroke and the other pole representing chronicity, it may be contended that if DN intervention was re-polarized to the immediate post-stroke end of the continuum, then quality of life for the stroke patient and his carer would improve and the financial cost of caring for highly dependent chronic patients would be reduced. This assumes that DN intervention would bring about a positive improvement in the patient's functional ability and suggests an area for further research.

Limitations to the study

It is inevitable that different health authorities will have different approaches to the care and management of stroke patients in the community, and that informal learning within one district may become the pattern or approach to care. This study was conducted with a convenience sample in one health district and as such the findings may not be generalizable to other areas and suggests an area for further research.

Additionally the sample size was small and concerned with what DNs reported their contribution to be rather than an observational study of what activities they undertook with this client group. Although there is an oral tradition in nursing whereby information is conveyed from nurse to nurse verbally rather than in writing, there are inherent difficulties in articulating the contribution of nurses in a practice based discipline.

CONCLUSION

The district nurse in England does not appear to have a major role in the rehabilitation of stroke patients in the community and only becomes involved in this client group once the patient's chronicity has reached the point of inability to meet daily living needs, in particular hygiene

and continence, and the carer is unable to cope. When community nursing services become involved it is most frequently the nursing auxillary who visits the patient to undertake care in relation to personal hygiene. District nurses tend to visit stroke patients to undertake assessments or to complete tangible interventions.

Rehabilitation interventions are not actively undertaken though district nurses, when visiting a stroke patient, promote the notion of independence in activities of living. The lack of district nurse involvement in rehabilitation appears to be explained by lack of available time, lack of preparation and as being beyond their role. The present imperative of care in the community is likely to lead to changes in the role of the nurse with this client group.

References

Anderson R. (1992) *The Aftermath of Stroke: The Experience of Patients and their Families.* Cambridge University Press, Cambridge.

Andrews K. & Stewart J. (1979) Stroke recovery: he can but does he? *Rheumatology and Rehabilitation* **18**, 43–48.

Department of Health (1990) *Care in the Community.* Department of Health, London.

Field P.A. & Morse J.M. (1985) *Nursing Research: The Application of Qualitative Approaches.* Croom Helm, Beckenham, Kent.

Fielding N. (1993) Qualitative interviewing. In *Researching Social Life* (Gilbert N. ed.), Sage, London, pp. 135–153.

Garraway W.M., Akhtar A.J., Prescott R.J. & Hockey L. (1980a) Management of acute stroke in the elderly: preliminary results of a controlled trial. *British Medical Journal* **280**, 1040–1043.

Garraway W.M., Akhtar A.J., Hockey L. & Prescott R.J. (1980b) Management of acute stroke in the elderly: follow-up of a controlled trial. *British Medical Journal* **281**, 827–829.

Hamrin E. (1982) Attitudes of nursing staff in general medical wards towards activation of stroke patients. *Journal of Advanced Nursing* **7**, 33–42.

Hockey L. (1968) *Care in the Balance. A Study of Collaboration Between Hospital and Community Services.* Queen's Nursing Institute, London.

Hudson M.P. (1988) The role of the nurse in the care of the stroke patient in the community. Unpublished MPhil thesis, Nursing Studies Unit, University of Nottingham, Nottingham.

Hudson M. & Hawthorn P. (1989) Stroke patients at home: who cares? *Nursing Times* **85**(22), 48–50.

Indredavik B., Bakke F., Solberg R., Rokseth R., Haaheim L.L. & Holme I. (1991) Benefits of a stroke unit: a randomised controlled trial. *Stroke* **22**(8), 1026–1031.

Kratz C.R. (1978) *Care of the Long term Sick in the Community.* Churchill Livingstone, Edinburgh.

Mulley G. & Arie T. (1978) Treating stroke: hospital or home. *British Medical Journal* **278**, 1321–1322.

Poulton K. (1981) Perceptions of wants and needs by nurses and their patients. Unpublished PhD thesis, Department of Human Biology, University of Surrey, Guildford.

Roper N., Logan W.W. & Teirney A.J. (1985) *The Elements of Nursing.* Churchill Livingstone, Edinburgh.

Stockwell F. (1972) *The Unpopular Patient.* Royal College of Nursing, London.

Tangeman P.T., Banaitis D.A. & Williams A.K. (1990) Rehabilitation of chronic stroke patients: changes in functional performance. *Archives of Physical Medicine and Rehabilitation* **71**(11), 876–80.

Twigg J. (1989) Models of carers: how do social care agencies conceptualise their relationship with informal carers? *Journal of Social Policy* **18**(1), 53–66.

University of Leeds, University of York, Royal College of Physicians (1992) *Effective Health Care: Stroke Rehabilitation.* University of Leeds, Leeds.

Wade D.T. & Langton-Hewer R. (1985) Hospital admission for acute stroke: who, for how long and to what effect? *Journal of Epidemiology and Community Health* **39**, 347–52.

Wade D.T., Langton-Hewer R., Skilbeck C.E., Bainton D. & Burns-Cox C. (1985) Controlled trial of a home care service for acute stroke patients. *Lancet* **1**, 323–326.

Watkins C., Gibbon B., Downes-Grainger E. & Barer D.H. (1993) Nurses and community rehabilitation: a missed opportunity? Paper presented at the Society for Research in Rehabilitation, July 1993, Dundee.

APPENDIX A: INTERVIEW SCHEDULE – DISTRICT NURSES

(1) Do you feel that you have many stroke patients referred to you?

(2) How many stroke patients do you currently visit? Of these, how many are recent referrals (last 6 months)?

(3) Where do your referrals come from (say the last five patients)?

(4) What information comes with the patient?

(5) Do you use any objective measures or rating scales when undertaking the district nurse assessment? For example, are objective measures of health status, social status, functional ability, etc., measured and recorded?

(6) What do you see as the main purpose(s) of your visits?

(7) Upon what criteria do you base your plan of intervention, including the number, frequency and the withdrawal of visits? Or do you plan the intervention for EN or nursing auxillary?

(8) To whom do you report progress and what are the consequences?

(9) Do you observe any difference in terms of patient progress between sources of discharge? For example, those patients discharged from hospital and those not hospitalized, or between those discharged from one hospital arena and another, e.g. Stroke rehabilitation unit compared with general medical ward, or general medical ward compared with care of the elderly ward?

(10) What do you consider to be the district nurses greatest contribution to stroke patients to be?

(11) What do you see as the main deficiencies in community stroke care at present?

(12) In terms of rehabilitation, what more as a DN do you think you could do and what prevents you from doing it?
(13) How long have you worked as a district nurse?
(14) Did you feel the district nursing course prepared you for dealing with stroke patients in the community?
(15) Why do you work as a district nurse rather than a hospital nurse?
(16) How would you summarize your experiences of working with stroke patients in the community?
(17) Do you have any questions you wish to ask me?

Journal of Clinical Nursing 1995; 4: 93–100

Improving stroke care through action research

BERNARD GIBBON MSC, RGN, RMN, RNT
Lecturer in Nursing, University of Liverpool, PO Box 147, Liverpool L69 3BX

VICKI LITTLE RGN
Ward Sister, Royal Liverpool University Hospital, Liverpool L7 8XP

Accepted for publication 10 May 1994

Summary

• Stroke accounts for ~20% of beds occupied on general medical wards yet nurses felt inadequately prepared to participate fully in the interdisciplinary approach to stroke rehabilitation.

• An action research project was established to improve stroke care and rehabilitation in a general medical ward.

• Results indicate a correlation between knowledge and attitudes: the greater the nurse's understanding the more positive the nurse is towards nursing involvement in rehabilitation.

• It was concluded that nurses have a vital part to play in the rehabilitation of stroke patients and that their contribution can be enhanced through greater understanding.

• Further research is needed to determine the effects of greater nursing involvement in terms of quality of patient recovery and length of patient stay.

Keywords: stroke rehabilitation, action research.

Background

The incidence of stroke in the UK remains high with approximately 100 000 first strokes per annum (2–2·5 per 1000 per year) and about 30 000 recurrences (6 per 1000 per year); it accounts for about 80 000 deaths per year. Not all stroke patients die, however, and recovery is varied and protracted. A high number of stroke patients survive the initial cerebral catastrophe but regain only partial independence in the activities of daily living.

Although stroke can occur at any age the incidence increases with age and ~80% of stroke patients are aged over 65 years. There are approximately 11 000 000 people of pensionable age in the UK representing 20% of the total UK population.

Data collected at the study hospital, which serves a population of ~500 000, indicate that over 300 new stroke patients are admitted each year with the greatest number being admitted to general medical wards (more than 50%). In addition a number of patients who have suffered a recurrent stroke are admitted. Many stroke and recurrent stroke patients remain in hospital for a considerable period of time and about 50% stay for more than 4 weeks and ~10% for more than 3 months. Thus stroke patients constitute a high proportion of hospital in-patients in both general medical wards and care of the elderly wards.

The study ward, a general medical ward, expressed interest in undertaking a project to improve the care of stroke patients after providing data collected for a Stroke

Register which is maintained in the university department of geriatric medicine. The main concern for the ward staff was to introduce research findings into practice and by so doing reduce the theory–practice gap (Hunt, 1981). The climate in the ward area was such that the pre-conditions of action research were met and the opportunity to enable practitioners to act more intelligently and skilfully was available. Nolan & Grant (1993) summarized the requirements for action research as:

- that there is a shared and explicit set of values acting as a guide for practice;
- there is recognition that a problem area exists;
- that there is a common understanding of the problem;
- there is a perceived need for change;
- that the situation is amenable to change;
- that there is a focus of involvement and team building.

In the context of this study the ward had an agreed philosophy of nursing in which the value of promoting self-care and independence were central. Additionally the nursing staff recognized that improvements to the delivery of care for stroke patients could be achieved. Courage is required to recognize deficits in care delivery and the nurses are to be complemented on their willingness to reflect on current practices. A series of (short) ward meetings were arranged to identify the problems as seen by the nurses and to consider a way forward. The issues/problems were categorized as follows:

- theory/practice gap,
- interdisciplinary nature of rehabilitation,
- 'poor relation',
- unhelpful admission assessments,
- generalized goal setting and planning,
- lack of objective measure of progress,
- the patient's day.

THEORY/PRACTICE GAP

The ward nurses were well aware that there were developments in the field of stroke rehabilitation but were unsure what these developments were. Typical comments centred upon basic nurse training preparing nurses for acute short-term care type illnesses and interventions, but a lack of focus on chronic illness and rehabilitation itself. They were aware of measurement tools to monitor progress but not how to apply them and if, in fact, they were allowed to apply them. Developments in physiotherapy, such as use of the Bobath technique, instead of enabling nurses, had the reverse effect and nurses were frequently unsure of what physiotherapists were doing and what they themselves were to do, to or for, the patient.

The traditional 'caring' role of the nurse appeared in some way to be in conflict with the 'risk taking', stimulating role necessary for rehabilitation.

INTERDISCIPLINARY NATURE OF REHABILITATION

There was universal acceptance that stroke rehabilitation required the services of many members of the interdisciplinary team. The position taken was that the patient got the specialist input at the cost of fragmentation and a plethora of different personnel. Whilst all the disciplines co-operated with each other there was little evidence of collaboration. Each discipline maintained their own records and plans of care. Case conferences were the exception rather than the rule and not all members of the multidisciplinary team joined the ward round.

'POOR RELATION'

In a system designed for short-term acute care it appears almost inevitable that the chronically ill and disabled will become the victim of those in acute need, and this was evident in regard to rehabilitation interventions. A contrast was noted between the planned and delivered nursing care in the acute phase and that planned and delivered in the rehabilitation phase. The ward nurses openly referred to the needs of the acutely ill taking precedence over those with non-acute needs during the ward meetings to consider the issues surrounding improving stroke rehabilitation. Ambivalent feelings of nurses towards stroke patients and their care was discussed during these planning meetings and these feelings were explained as attributable to a perceived futility in interventions and a sense of hopelessness.

UNHELPFUL ADMISSION ASSESSMENTS

The ward used standard Nursing Process documentation to record patient assessment, however, even though these records were loosely based on the Activities of Living Model (Roper *et al.*, 1985), it appeared that inadequate detail was obtained and recorded. This was determined by auditing the records against a 'gold standard' agreed by members of the rehabilitation team. To some extent the shortcomings were attributable to confusion over the term 'nursing history'. Some assessment records regarded nursing history as prior to the stroke whereas others completed the assessment as post stroke. The most helpful situation of knowing the status of the patient both pre and post stroke was rarely recorded.

GENERALIZED GOAL SETTING AND PLANNING

The audit also exposed a lack of goal-directed rehabilitative care and, irrespective of the comprehensiveness of the assessment, there appeared to be little connection between the assessment and the plan of care. In essence a record of the identified problems was missing. Planned nursing interventions tended to be vague and unrelated to planned interventions of therapists. Nurses reported being unsure of what to do and commented during group meetings that physiotherapists 'are very strict', implying that they would not do anything unless the physiotherapist directed them. Clearly nurses were implementing care but the reluctance appeared to be to document it.

LACK OF OBJECTIVE MEASURES OF PROGRESS

Nurses were frequently asked to report on a patient's progress during ward rounds and tended to do so by using unquantifiable statements such as 'seems to be getting better' or 'he's better in himself'. Nurses reported their sense of frustration during the group meetings in not having a way to be objective and felt this undermined their role.

THE PATIENT'S DAY

During the group meetings the ward team considered the issue of how the patients spent their day and concluded that most of the patient's day was spent in the direct care of nurses. Patients on average had less than 1 h of therapy a day and they usually left the ward for therapy input. Much of the patients' time was spent in inactivity.

The identification of problems and issues is not an admission of bad practice but a recognition that situations can develop and improve.

A selected review of the literature

Many studies have been undertaken into stroke rehabilitation, yet concern is still expressed on how best to approach the rehabilitation of stroke patients (Wade & Tyrer, 1989), that is, in terms of organizational structure. Gibbon (1993) contended that there are implications for nurses in each of the documented approaches.

Stroke patients at the project site tend to be cared for and managed throughout the hospital, that is, not managed and cared for in one specific or specialized unit. Some institutions do, however, have 24-h care stroke units and in these situations nurses manage and staff the unit 24 h per day. These units also provide an educational and developmental role. Where these units do not exist the patient often has to be transported from the ward to a stroke rehabilitation unit daily for therapy.

This situation poses a number of problems for nurses. Despite the fact that stroke patients often have a long duration of in-patient stay the nurse is separated from the therapy and has no objective way of measuring progress. The continuity of rehabilitation is therefore interrupted and communication problems inevitably occur (Cox, 1973).

Cox also contended that rehabilitation nursing was a new concept. It appears that nurses' involvement in stroke rehabilitation was introduced due to the limited time that physiotherapists had available. The relegation of the nurse's role to that of 'stand-in' physiotherapist may explain the negative attitude that some nurses express towards stroke patients and their rehabilitation (Hamrin, 1982; Gibbon, 1991). It may also be suggested that the nurses' uncertainty about their role in the rehabilitation programme may contribute to these feelings.

Despite this, nurses do play a major part in the care and management of stroke patients and their rehabilitation because rehabilitation involves producing a stimulating environment throughout the day. Studies (e.g. Edinburgh Stroke Unit Trial, Garraway *et al.*, 1980) have demonstrated the benefit of early activation programmes in terms of speeding up the functional recovery of patients thus decreasing the duration of in-patient stay. There is also evidence that where 'Early Activation Programmes' are implemented the patients, their relatives and nursing staff are more satisfied with the care (Hamrin & Lindemark, 1990) and patients subsequently have a better quality of life. These findings are not due to increased therapy but possibly earlier therapy.

The input of nursing staff has been less clearly defined and this is largely due to the difficulty in measuring nursing input compared with the defined sessions of physiotherapy and occupational therapy. It is reasonable to conclude that nursing intervention rather than being peripheral is in fact central to the rehabilitation process.

The lack of continuity between the physiotherapist/occupational therapist and the nursing staff is perhaps largely attributable to the separation of therapy from ward areas, and hence from nurses, and subsequently variation in co-ordination and communication were observed. The lack of understanding of the nurses' role and lack of clarity as to what therapists are attempting to achieve may give rise to a lack of knowledge and therefore a lack of value and a lack of confidence in the rehabilitation process.

The introduction of the Nursing Process into the UK is now widely acknowledged to have been ill planned (Walsh & Ford, 1989) and the consequences of this are still evident in many areas. The quest for simplicity and brevity has all too

Hamrin E. (1982) Attitudes of Nursing Staff in general medical wards towards activation of stroke patients. *Journal of Advanced Nursing* 7, 33–42.

Hamrin E.K.F. & Lindmark B. (1990) The effect of systematic care planning after acute stroke in general hospital medical wards. *Journal of Advanced Nursing* 15, 1146–1153.

Hunt (1981) Indications of nursing practice: the use of research findings into nursing practice. *Journal of Advanced Nursing* 6, 189–194.

Kirkwood B.R. (1988) *Essentials of Medical Statistics*. Blackwell Scientific Publications, Oxford.

McMahon R. & Pearson A. (1991) *Nursing as Therapy*. Chapman and Hall, London.

Mahoney F.I. & Barthel D.W. (1965) Functional evaluation: the Barthel Index. *Maryland State Medical Journal* 14, 61–65.

Nolan M. & Grant G. (1993) Action research and quality of care: a mechanism for agreeing basic values as a precursor to change. *Journal of Advanced Nursing* 18, 305–311.

Roper N., Logan W.W. & Teirney A.J. (1985) *The Elements of Nursing*. Churchill Livingstone, Edinburgh.

Tinson D.J. (1989) How stroke patients spend their days. *International Disability Studies* 11, 45–49.

Wade D.T. & Tyler G. (1989) Implementing a consensus on stroke poses problems. *Geriatric Medicine* 19(1), 50–52.

Walsh M. & Ford P. (1989) *Nursing Rituals; Research and Rational Actions*. Heinemann, Oxford.

Waters K.R. (1992) *Rehabilitation of elderly people in hospital: the role of the nurse*. PhD Thesis, University of Manchester.

Appendix 1 Knowledge questionnaire

Please answer each of the following true/false questions. All answers will be treated in the strictest confidence, if you are unsure of an answer please circle D/K ('don't know').

Biographical data (please tick)
Qualification: RGN ☐, EN(G) ☐

Length of time qualified: >1 year ☐, 1–3 years ☐, <3 years ☐

Questions (T = true, F = false, D/K = don't know) (please circle)

1 The Bobath rehabilitation technique has improved the quality of recovery T F D/K

2 Activating (medically stable) stroke patients early helps recovery T F D/K

3 The key to success is a highly motivated patient T F D/K

4 The aim of stroke rehabilitation is compensatory training of the sound side T F D/K

5 The nurse's role is one of counsellor and motivator and not therapist T F D/K

6 Long-term goals are more effective than short-term goals T F D/K

7 Stroke patients should be advised to take it easy T F D/K

8 Positioning of the patient is the key element to rehabilitation T F D/K

9 The nurse's role is to provide supportive care whilst therapists treat the patient during the rehabilitation phase T F D/K

10 The pattern of recovery is similar in most stroke patients T F D/K

11 Intensive stroke rehabilitation is ineffective T F D/K

12 The members of the multidisciplinary team should have common goals and use a common language T F D/K

13 Sensory stimulation of the affected side should be encouraged T F D/K

14 Most stroke recovery occurs within 3 weeks of initial stroke T F D/K

15 Patients who regain bladder control are more likely to have a good recovery T F D/K

16 Stroke patients should be encouraged to do things only using their good side T F D/K

17 Most stroke recovery is spontaneous T F D/K

18 The patient's affected hand should be supported in a supine position T F D/K

19 The patient should be encouraged to walk as soon as soon as they feel able T F D/K

20 Activity of Daily Living Measurement Scales are useful for monitoring progress T F D/K