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**The Construction of Delegation in the Utilisation of Physiotherapy  
Assistants**

**by**

**Liz Saunders**

**A Doctoral Thesis**


**Submitted in partial fulfilment of the requirements**

**for the award of**

**Doctor of Philosophy of the Loughborough University of Technology**

**1st February 1999**

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## ABSTRACT

This research studies delegation in outpatient physiotherapy and attempts to solve its deficiency by designing a theoretical model of constructive delegation (CD model). The CD model is functional and uses a systematic and rational approach to plan the level of delegation by using task and cost-benefit analysis and it supports delegation dynamically by organising training, working partnerships, communications and the working environment.

An initial survey of tasks carried out by physiotherapists and assistants at ten sites found inconsistent approaches to delegation, with 80% of physiotherapists expressing concerns. This mirrored similar experiences in the literature where there was evidence of some delegation of technical clinical tasks, but also resistance within the profession. Generally in the literature delegation was defined and eluded to, but was not constructed in order to provide a planned system. The CD model was offered as a tool to, by construction, implement delegation safely and without loss of quality to ensure appropriate skills for appropriate tasks and to analyse current practice and implicitly suggest improvements.

A pilot study, followed by field studies at four sites including a control site, was carried out to test the use of the CD model to implement delegation by comparing activity, cost-benefit, outcomes and patient satisfaction before and after implementation.

Semi-structured interviews of physiotherapists and assistants were carried out at five further sites using the framework of the CD model to generate the questions. The assistants were then observed at work to measure current practice and to implicitly make suggestions to improve practice.

Measurements were taken at the pilot site three years after implementation of delegation to analyse the costs of the service, the changes in practice and the quality of care to see if the level of delegation had been sustained.

From the experience using the CD model during this research, aids to improve delegation were designed to facilitate the process of delegating clinical tasks to assistants elsewhere.

This research concludes that the CD model was used successfully to both implement delegation cost efficiently and beneficially and to measure current commitment to delegation. The increase in workload per physiotherapists due to the increased clinical activity carried out by assistants suggests that this method if applied generally would reduce the costs of care and enable expertise to be applied appropriately, thus helping a specialist professional group to reach more patients.

This research found that there was some resistance to delegation by physiotherapists at all stages of the research. There were departments that refused to be included in the study due to decisions not to delegate clinical tasks to assistants. Yet there were physiotherapists who demonstrated considerable commitment to delegation but yet who initially experienced psychological difficulties in passing clinical tasks to assistants. The resistance to delegation in the profession and the psychology and social interaction of delegation need further study.

**Key words:**

Delegation, physiotherapy assistants, tasks, skills, cost-benefit analysis, training.

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## **CHAPTER ONE**

### **INTRODUCTION AND RESEARCH OBJECTIVES**

#### **SUMMARY**

This chapter introduces the reader to the lack of consistency in delegation in physiotherapy and discusses why it was perceived that there was a need for a rational approach to delegation to produce a structured system of working that would take quality and value-for-money into consideration. The concept of managing delegation using a functional model is explained as a solution to the problem. The research using the model is then outlined chapter by chapter.

#### **1.1 BACK GROUND TO THE RESEARCH**

Skill mix has become an important issue in the National Health Service (NHS) following publication of the Government White papers "Working for Patients" (DoH, 1989a) and "Caring for People" (DoH, 1989b). Reforms have resulted in the purchaser and provider approach to delivery of health care, with quality and value-for-money called for. This has put the emphasis on unit labour costs and therefore on the need to use all grades of staff efficiently.

To be efficient where there are various grades of staff necessitates decisions on skill mix; the ratio of qualified to unqualified staff and their pattern of working. Delegation of tasks by physiotherapists to assistants has been found to vary considerably from one location to another (McNeil et al, 1990, Bashi and Domholdt, 1993). This suggests variation in the costs and quality of services; the costs of the services is increased where physiotherapists

do not delegate clinical tasks to assistants, and the quality is reduced if insufficient qualified input is available to patient care.

It is possible that health professionals will be reluctant to pass on tasks to assistants if delegation is not managed in a structured way. Without effective delegation, assistants would not have the scope to build skills and become competent. Appropriate training of assistants to match the responsibilities of the tasks being undertaken would be an investment if delegation resulted in a cost-beneficial service. If competence could be acquired with little training and the task delegated were carried out frequently enough to make delegation worthwhile; the investment in training would pay off. However, if extensive training was required delegation may well be inappropriate for it would be easier and less costly for the professionals to carry out the task themselves.

If delegation is managed, those tasks suited to delegation within an appropriate context could be identified. Complete jobs may be unsuitable for delegation, but if the job is split up into functional units of operation, parts of tasks, or subtasks, may be found to fulfil the criteria for delegation. Thus task analysis should be an important adjunct to the management of delegation.

In the caring professions, the duty of care that professionals have to their patients will result in a reluctance to delegate caring to someone less qualified unless trust and co-operation exist between the health professional and assistant. The professional, in delegating, remains accountable for the patient's care and needs to maintain responsibility for that care but to assign control of certain actions to a suitably competent assistant. Responsibilities have to be clearly understood to enable the professional to pass on the responsibility to carry out some of the caring to the assistant. Trust and co-operation should exist between physiotherapist and assistant, so that delegation of tasks becomes like passing on the baton in a relay race, the giver on handing over the task trusts the receiver to carry on and thus becomes free to do something else. To supervise

each task by looking over the assistant's shoulder would not release the physiotherapist from the task. This form of parrot delegation (Oates, 1993) would be more expensive, as two people would be involved simultaneously instead of one.

The physiotherapy profession in the United Kingdom has reached an important stage in its history. It is now an all degree profession; all students now register for a degree. Furthermore in 1993 physiotherapists, after years of debate, voted in favour of offering assistants associate membership of the Chartered Society of Physiotherapy (CSP) and in 1995, after further debate, the CSP agreed to change the name "helper" to "assistant" to reflect more clearly the role of the assistant.

In a recent Institute of Manpower Studies (IMS) report "Understanding Physiotherapy Staffing Levels" (Stock and Seccombe, 1992a) wide variation in staffing levels per population was described throughout the country; this included the variation in the ratio of physiotherapists to assistant. Regional variation described in the Joint National Professional Manpower Initiative (JNPMI) in 1992 showed variation across the country in the physiotherapist to assistant ratio from 8.31: 1 to 3.81: 1 (figure 1.1). The IMS report pointed out that numbers of physiotherapists employed in the NHS had increased by 17% between 1986 and 1991, but there had been no growth in the number of assistants employed. Vacancy rates for physiotherapy posts as a percentage of establishment rose from 7.6% in 1992 to 8.2% in 1994 (CSP, 1995). In 1996 20% of physiotherapy posts were reported as being vacant, with extra demand on physiotherapy services from Fundholding General Practitioners being cited as a cause for what was described as a growing crisis (CSP, 1996a). Although one solution to this crisis would be to train more physiotherapists, another must be to increase the usage of physiotherapy assistants, particularly in areas where the ratio of physiotherapists to assistant is high.

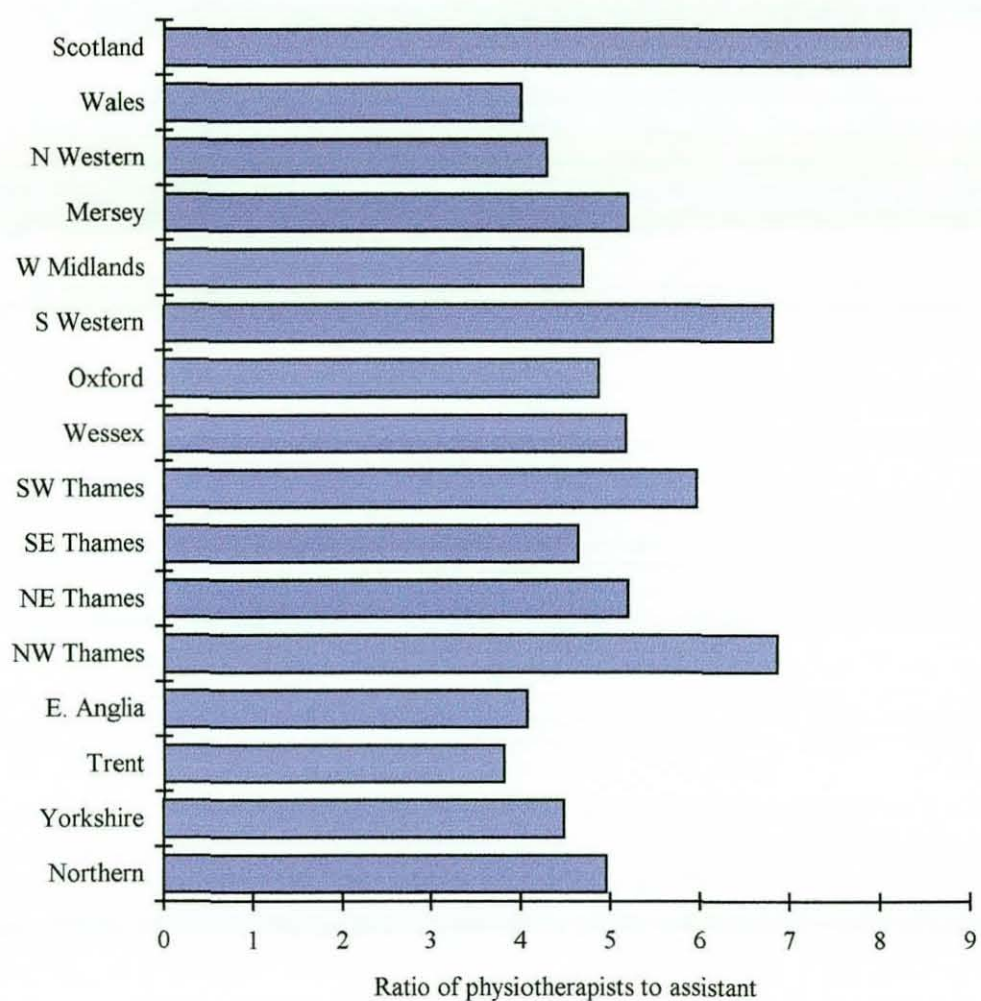


Figure 1.1. The ratio of physiotherapists to assistant in the UK by Regional Health Authority in 1992

In the IMS report physiotherapy managers were interviewed about skill mix and their reported consensus was that assistants could be used as a greater resource in physiotherapy outpatients and in care of the elderly. Outpatients accounts for one of the largest specialities in physiotherapy with 23% of physiotherapists working in outpatients in 1992 (JNPMI, 1992); skill mix changes, if effective, could have a considerable impact on the national shortages of physiotherapists and on the cost of physiotherapy for purchasers.

Just as skill mix varies across the country, so may the tasks that assistants are carrying out. If assistants are carrying out clinical work in one area, why are they not in another? The difference can be as diverse as from no clinical tasks to technical clinical tasks carried out by assistants. This difference was experienced by the author whilst working in three Regions within a two year period in physiotherapy departments offering similar musculo-skeletal services. At the first hospital, a large District General Hospital there were no assistants available to help. All tasks, including housekeeping, were carried out by the physiotherapists. At the second, another District General Hospital, assistants were readily available to carry out housekeeping duties but were not allowed to carry out any clinical tasks; they waited around to tidy up. At the third, a Community Hospital, two assistants worked with one physiotherapist. The assistants did all of the electro-therapy and tractions largely unsupervised, whilst the physiotherapists worked in the gym. The potential for a structured system to allow patient access to the physiotherapist, but to make use of available skill cost-effectively, shouts out from this example. The first hospital offered a high quality but expensive service compared with the cheap service at the third hospital, a service that was low in quality due to the lack of input from the physiotherapist. The second hospital was inefficient; assistants were under-utilised although available.

With no systematic evaluation of tasks, division of work is left to local policy. Availability of staff may well influence the need to use assistants; where there are no



recruitment difficulties there may have been no pressure to use assistants. This should then be reflected in the number of physiotherapists and assistants employed, with those areas with low numbers of physiotherapists per population making up the shortfall by employing more assistants. However this does not appear to be the case in Trent Regional Health Authority where the ratio of physiotherapists to assistant is the lowest in the country, there are still marked variations from District to District in the physiotherapist to assistant ratio (figure 1.2). There are also wide differences in the numbers of physiotherapists and assistants per population, but greater numbers of assistants are not available to the Districts where lower numbers of physiotherapists are employed (figure 1.3). Nor is the variation in numbers of physiotherapists and assistants per population changing with time (figure 1.4) or the recent influences of purchasing, as four years on the JNPMI figures in Trent (JNPMI, 1995) remain much the same. A systematic approach to the problem of skill mix in physiotherapy is called for, to ensure that staff are being used efficiently at both assistant and professional levels, and to unify the safe delegation of clinical tasks to assistants.

National training is now available for assistants in the NHS. Health care assistants can now train to certain levels of competence in the National Vocational Qualifications (NVQ) scheme, with level 3 said to be part way between an assistant and a physiotherapist. The investment in this training is considerable (CSP, 1996b) with the trainee studying for a day each week for approximately six months. Will this investment benefit the service in future? In a specialised area generalist training may be lost, as skills learnt may be too broad to be of use. This aspect of NVQ training has been criticised by Green (1991) who, as an occupational therapist, thought the broad skills gained did not help in specialised areas. In physiotherapy outpatients, it is possible that assistants are carrying out specialised clinical tasks learnt on-the-job and that training to NVQ level 3

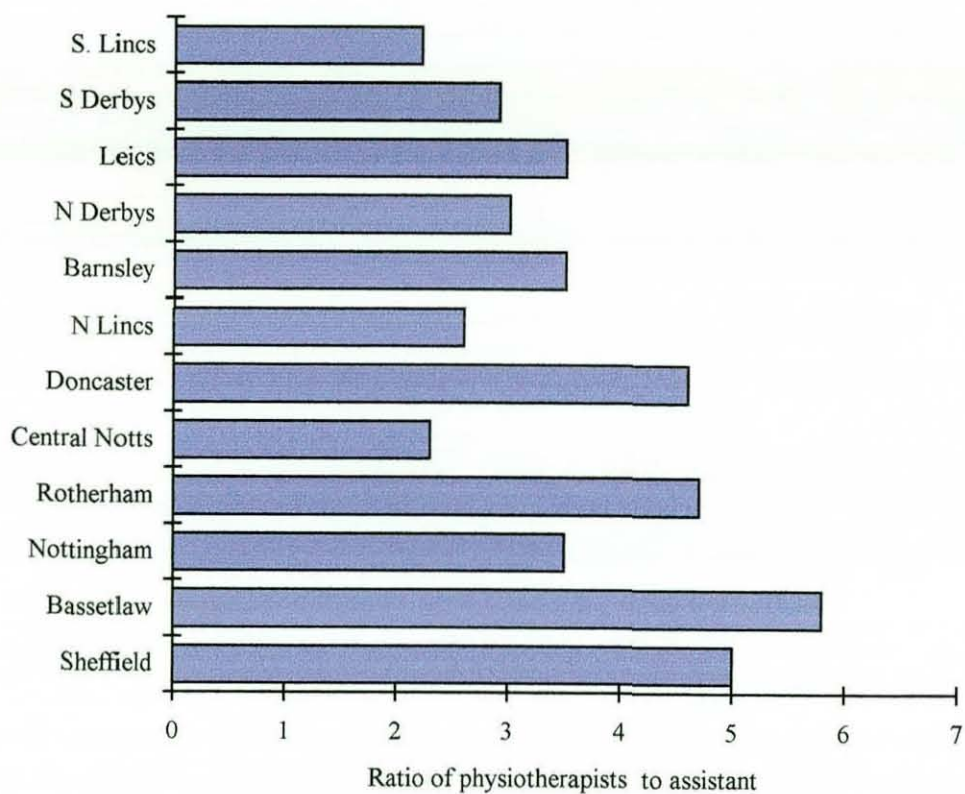


Figure 1.2. The ratio of physiotherapists to assistant in Trent Regional Health Authority by District in 1991

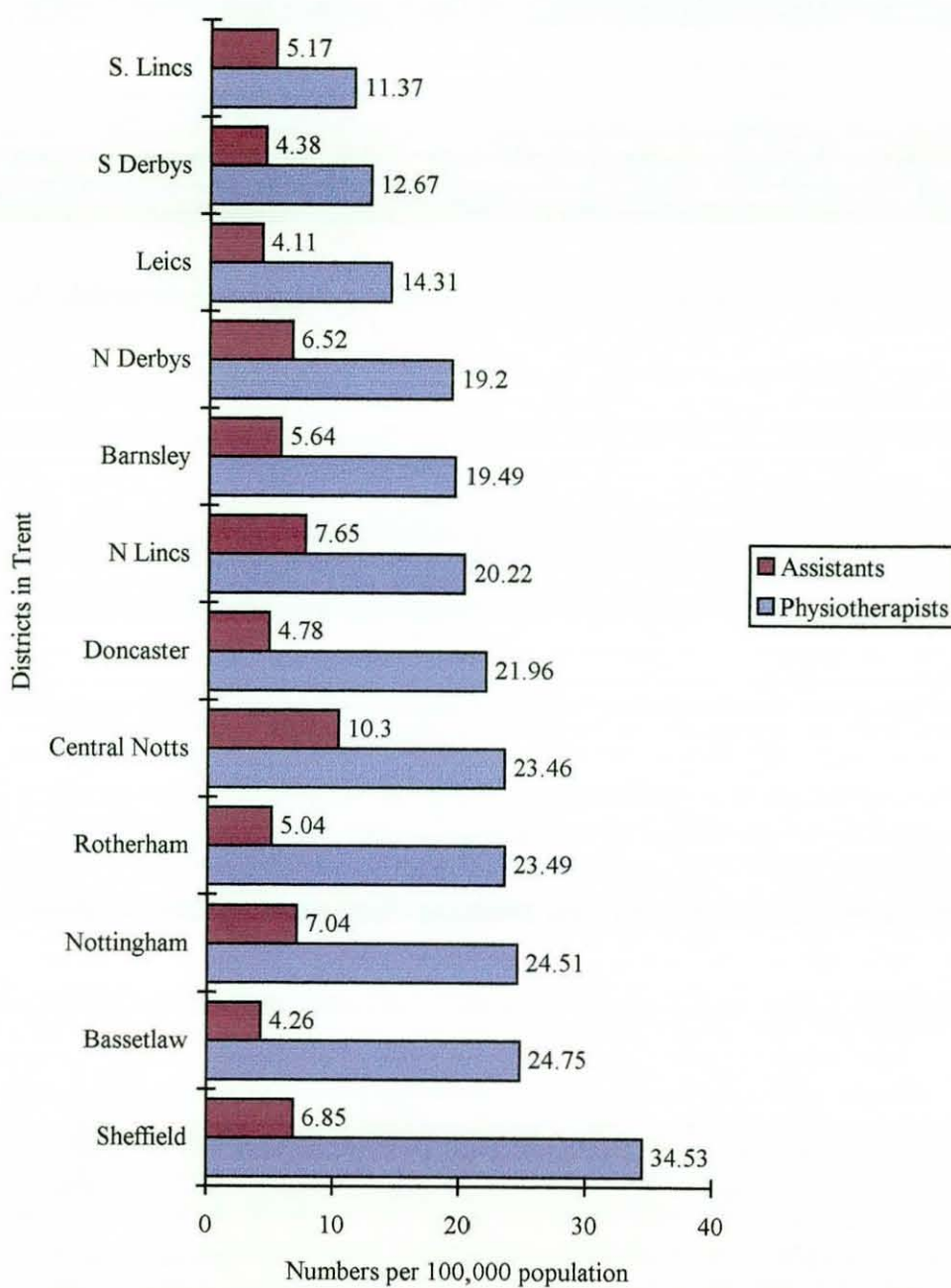


Figure 1.3. Comparison of the numbers of physiotherapists and assistants per 100,000 population by District in Trent in 1991

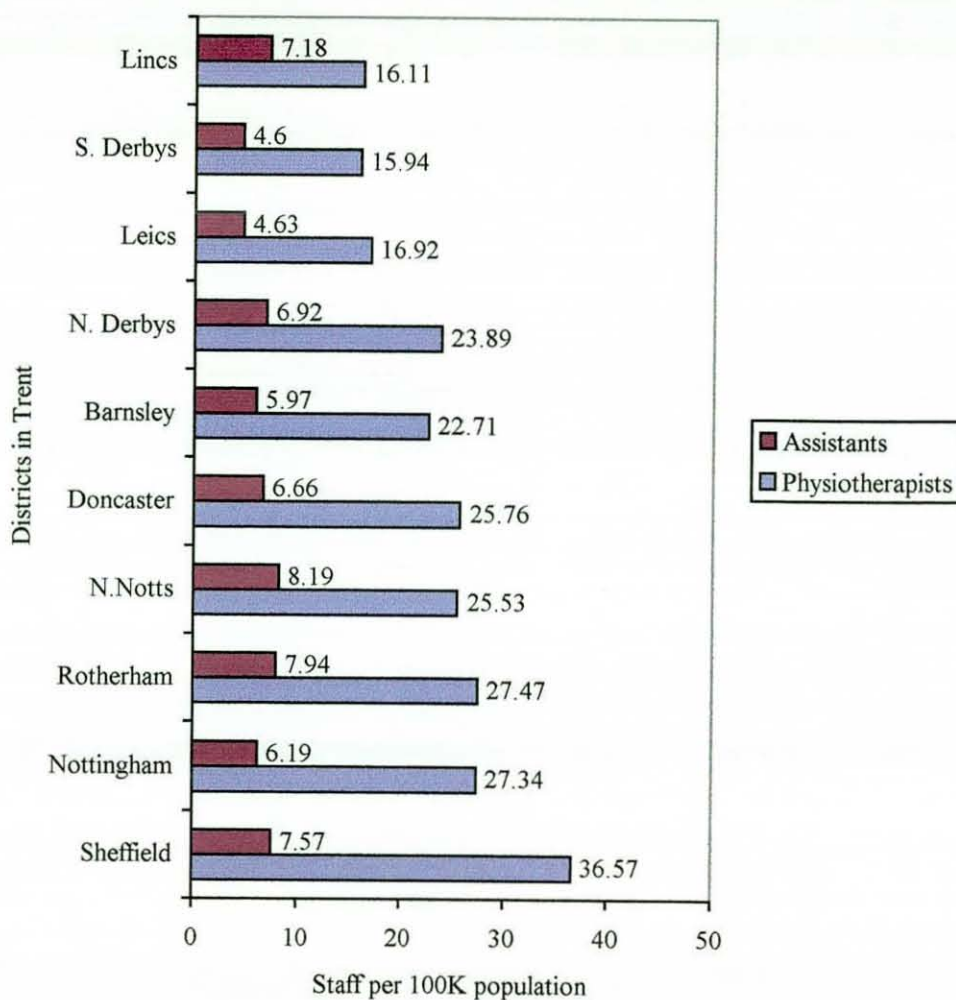


Figure 1.4 The numbers of physiotherapists and assistants in Trent in 1995

would therefore be a poor investment, as the cost and time out would bring few new skills to the area.

Delegation, cost-benefit analysis and training issues are the concern of all professionals in the NHS. With an ageing population and fewer people in employment to pay for caring, value-for-money is no longer desirable but a necessity. This research has implications for health professionals at large.

## **1.2 RESEARCH OBJECTIVES AND IMPLICATIONS**

In outpatient physiotherapy services there is a problem with delegation of work between physiotherapist and assistant. Lack of a rational and structured approach to the problem leaves delegation, and therefore jobs, undesigned. This is likely to result in a lack of cost-benefit in physiotherapy and in fewer patients having access to physiotherapists. Cost-benefit in delegation in physiotherapy involves the cost of the training of assistants and the effort in on-the-job performance coaching until the assistant is competent to carry out tasks safely, the benefits are then accrued in reduced costs and thus in physiotherapy budgets being used to benefit of greater numbers of patients. There are shortages of physiotherapists in the Health Service. Although the current vacancy rates suggest a need to train greater numbers of physiotherapists, there is also evidence to suggest greater use could be made of assistants, reducing the pressure on the limited number of physiotherapists.

An initial search of the literature in the Online Public Access Catalogue (OPAC) at Loughborough University revealed only thirty references under the key word "delegation", only four of these were about delegation of authority between people; others being about the delegation of power in local government, devolvment of finance in education or about delegations of officers as representatives of groups. "Participation", in contrast, had four hundred and ninety-five listed references. This may reflect the lack

of direct focus that delegation has had in the literature. Human Sciences, Social Sciences and Management literature were examined using synonyms such as leadership and control, and although delegation was referred to, there was little on systems of delegation of tasks between different levels of workers, perhaps due to the fact that this would normally be the remit of managers in organisations using task allocation techniques. In Health, delegation is carried out in the context of caring, the task being only part of a programme of care delivered by health professionals, thus delegation must be left to the discretion of the health professional responsible for the care. The manager can, however, create system conducive to delegation and it is this approach that is unique to caring professions that this research attempts to pursue.

Several issues need to be researched and addressed. These include task analysis and task suitability for delegation, communication to support delegation, training investment and subsequent cost-benefit analysis of the effect of the training, the organisation of the working environment and the need for monitoring of delegation once set up. These issues will be addressed by the creation of the model of constructive delegation (CD model), which will be tested as a tool to analyse practice and to implement delegation. Constructive delegation is the term given by the author to the process of organising and planning delegation, so that the end result is a system where the delegators can transfer part of their work to assistants who, through planning, have been given the authority to carry out and complete the task, and will remain accountable to, and give feedback to, the delegator once the task is completed. The purpose of the CD model will be to rationally approach delegation, to analyse suitability and cost-benefit of task delegation, to create a system where physiotherapist and assistant are working together, yet independently, with communication formalised to reflect responsibilities. These issues will be addressed by producing the CD model. The CD model will be designed to manage delegation and will be tested out by using the model to analyse and to implement delegation.

Where professional staff work with assistants, there is an expectancy for the assistant to support the professional and for the professional to use the assistant. The statistics suggest that this may not be happening. This thesis will examine the problem, present the CD model and examine its use in practice.

The hypothesis of this research is that the CD model can be:

- a) Used to analyse present working arrangements in outpatient physiotherapy, including the absence of cost-benefit analysis.
- b) Used to implement delegation into outpatient physiotherapy services and to evaluate methods of improving cost-benefit.

### **1.3 THE STRUCTURE OF THIS THESIS**

This research titled "The Construction of Delegation in the Utilisation of Physiotherapy Assistants" includes the following chapters:

#### **Chapter 2. Literature review**

The literature was searched to examine the following:

- a) Delegation and skill mix in physiotherapy and allied professions, to examine delegation in health caring generally;
- b) Job design and the experience of job re-design in industry, looking at methods used and the evolution of the changes that occurred;
- c) Cost-benefit analysis in relation to delegation;
- d) Delegation, to establish the extent to which delegation is explained and structured, and to distinguish between decision-making and task delegation;

e) Skill and task analysis were examined in the Human Science literature to establish ways of breaking down and allocating tasks, forming communicating systems and building skills.

### **Chapter 3. The present culture of delegation in physiotherapy and the need for change**

This chapter looks at the physiotherapy service to outpatients in the context of the current philosophy of the NHS on skill mix and the development of primary care. A survey of tasks carried out by physiotherapists and assistants provides information on the types of tasks frequently carried out by both physiotherapists and assistants, and gives an insight into the attitudes of physiotherapists to delegation thus supporting the argument for the need for a structured process to delegation.

### **Chapter 4. The development of a strategy to investigate delegation in physiotherapy**

Using the information gained from the literature search and the survey of task frequencies, the constructive delegation model is designed to plan for and organise delegation dynamically. The CD model is offered as a framework to manage delegation between physiotherapists and assistants.

### **Chapter 5. Using the CD model as a framework for measuring disposition towards delegation**

A checklist generated by the CD model is used as the basis of a semi-structured interview to analyse the current disposition towards delegation encountered in the profession. A survey using the approach, carried out at five sites, is reported as drawing little evidence that delegation had been planned rationally.



**Chapter 6 to 9 describes the application of the CD model to improving delegation.**

**Chapter 6. Strategy for improving delegation: i) the strategy**

The issues involved in delegation in physiotherapy are discussed and the use of the CD model justified to provide the basis of a system where quality can be maintained during delegation, and outcomes of care sustained at acceptable levels.

**Chapter 7. Strategy for improving delegation: ii) the pilot study**

A pilot study is reported to test the CD model's suitability in providing a framework to implement a new level of delegation. Measurements to compare the old and the new service in terms of both efficiency and quality are described.

**Chapter 8. Strategy for improving delegation: iii) the field study**

The CD model is used to implement and compare delegation at three field sites, with a fourth site acting as the control.

**Chapter 9. Strategies for improving delegation: iv) the follow-up to the pilot site.**

An audit is carried out at the pilot site three years after the implementation of delegation and finds an increase in the cost-benefits of using assistants to carry out clinical tasks and a change in practice of the physiotherapists

## **Chapter 10. Delegation - improving practice**

From the experience gained in the research using the CD model, tools are presented to facilitate the implementation and running of a delegation system for both managers and physiotherapists.

## **Chapter 11. Discussion**

The outcomes of the research are discussed along with the implications for practice and for further research into delegation. The benefits of the CD model used to generate a reasoned level of delegation are presented. Limitations are discussed and areas of improvement suggested. The areas that were found to need further study are presented.

## **Chapter 12. Conclusions**

Using the results found from applying the CD model to implement and measure delegation, the achievements of the CD model are discussed within the limitations of the research. The implications for the profession and for further study are presented.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **SUMMARY**

This chapter explores the literature looking at the use of assistants by physiotherapists and other health professionals and shows the field to be very sparsely researched. As a consequence, literature on job design and task and skill analysis appropriate to task allocation in industry was examined with a view to identify its applicability to the field of delegation in physiotherapy. The issue of cost-benefit analysis was reviewed to see if there was evidence of its consideration in the training and utilisation of assistants. Finally delegation itself was explored to see if delegation had been constructed systematically; it was found that it was alluded to but that it was not systematically described. The literature search revealed that delegation was not planned in a systematic way with consideration of cost-benefit and it was concluded that there was a need to help solve the problem in delegation by generating a system to plan and manage delegation.

#### **2.1 INTRODUCTION**

This literature review aims to look at the allocation of tasks between physiotherapist and other health care professionals and assistants and at the issues that surround delegation and job design as discussed in the international literature. The experience of industry is taken into consideration where efficiency and quality control have had considerable focus for several decades. Delegation is reviewed to examine the process and the relationship between delegator and delegatee and to look for evidence of cost-benefit analysis.

Six different areas of work are examined:

1. Skill mix in physiotherapy
2. Skill mix in other caring professions
3. Job design
4. Skill and task analysis
5. Cost benefit analysis
6. Delegation

## **2.2 SKILL MIX IN PHYSIOTHERAPY**

The physiotherapy assistant role was updated in the United Kingdom in 1989, prompted by the emergence of NVQ training for support workers, the increasing numbers of elderly people in the population and the effect of the dwindling labour market (CSP, 1989). Following this, guidelines were issued on the use of support personnel by the Chartered Society of Physiotherapy (CSP, 1991) which largely left the decision to delegate with the individual physiotherapist who would make a judgement on delegation, dependant on the skills and competence of the assistant. The need for tasks to be delegated by physiotherapists in the 1989 paper was stressed, advising that there were three levels of tasks to be delegated: housekeeping; clerical duties; and the monitoring of simple exercise regimes. These recommended tasks fell short of the level of tasks being carried out by assistants currently in some physiotherapy departments (McNeil et al, 1990, Bashi and Domholdt, 1993).

The variation in ratios of physiotherapists to assistant throughout the country (JNPMI, 1992) from 10.8:1 in Inner London to 3. 5:1 in Trent suggest that assistants are used more in some parts of the country than in others, perhaps due to historical differences that have influenced staffing levels and the need to use assistants. More recently the Chartered Society of Physiotherapy's evidence (CSP, 1996c) has found that vacancy rates for

physiotherapists range from 8.5% to 12.5% in some areas such as inner London, having increased from an average of 7.2% in two years. Such rates put a strain on the profession and have resulted in an increase in the numbers of physiotherapists being trained. The percentage of assistants in establishment increased by only 1.2% for the same period. Increased utilisation of assistants does not appear to be taken into consideration as a solution to the shortage of physiotherapists. The wastage rate of training is high with 29% of newly qualified Professions Allied to Medicine staff choosing not to work for the NHS. Job redesign could result in more stimulating professional jobs that may be more attractive to staff who now qualify by degree. Increasing the amount of routine clinical tasks allocated to assistants may serve the purpose of reducing manpower shortages by both making use of the skills of assistants and reducing the percentage of unchallenging tasks physiotherapists carry out, thus making the jobs more interesting and thereby reducing the present wastage of professional staff.

The need for delegation in physiotherapy was recognised as far back as 1970 by Holmes (1970), in the USA in a paper on supervisory relationships. She looked at the responsibilities of the physiotherapists and assistants and discussed tasks that she felt would always remain the responsibility of the qualified staff. Examples given were tasks that involved knowledge and decision-making such as assessing patients, planning treatment, evaluating results, supervising delegated care and reporting back to referring agents. The actual carrying out of treatment was not included in this list, suggesting that carrying out treatments along with housekeeping, preparation and clerical work were all tasks that could be considered for delegation to assistants working under supervision. The therapist would then be involved, according to Holmes, with tasks that require problem solving and high-level decision-making. Holmes discussed the need for recognition of overlap of skills and responsibilities in order to achieve an increase in quantity whilst quality is maintained and called for functions of staff and task responsibilities to be identified.

Davis (1991) considered the task analysis of physical therapy to the elderly client. Concerned by the prospect of a greater percentage of elderly people in the World by the year 2000, she stressed the need to delegate tasks to assistants in order for adequate physiotherapy to be available. She referred in turn to work done over two decades before by Watts (1971) on a theoretical framework to direct the appropriate division of tasks between physiotherapists and assistants. Watts suggested that physiotherapy was divisible into two major components, decision-making and doing, with two types of treatment goals, expressive and instrumental, with expressive behaviour relating to the psychological aspect of care and instrumental behaviour relating to deciding and doing. Seven different levels of sophistication of the knowledge and skills needed for undertaking care were listed, with aides responsible for carrying out delegated tasks in levels 1 and 2, assistants in levels 3 and 4 with physiotherapist operating at level 5. Above level 5 was limited to managers of physiotherapy and researchers. An example of this treatment was applied by Watts to the treatment of acute low back pain by heat treatment. The aide showed the patient to the treatment cubicle, the assistant carried out the treatment and the physiotherapist planned the treatment and wrote the report. Such a simple treatment is unlikely to be carried out as the main approach in physiotherapy nowadays, low back pain being treated by manipulation (CSAG, 1994). Davis stressed the need for the wise delegation of tasks to assistants, along with the need for student physiotherapists to learn to delegate work and to teach the untrained assistant on-the-job.

The role of auxiliary personnel in physiotherapy has been covered in the literature in various countries. The more technical clinical tasks were found to be carried out by some aides in Canada and America following questionnaire surveys of physiotherapists (McNeil et al, 1990, Bashi and Domholdt, 1993). Where there was a desperate shortage of physiotherapists, assistants were trained to carry out specialised clinical tasks unsupervised on common conditions in order to provide a physiotherapy service at all in rural Africa (Murray, 1988). In Nepal high workloads and low staffing was coped with

by one physiotherapist supervising an in-house trained physiotherapy technician and an assistant (Schofield, 1992).

In the United States for almost three decades a three-tier system has existed in physiotherapy consisting of physical therapist, assistant and aide (Bashi and Domholdt, 1993). The physical therapist graduate by bachelor degree, the assistant by a two year associate degree, whilst aides are trained on-the-job. The assistant performs clinical tasks delegated by the physical therapist, including exercise therapy, electro-therapy and assisting the physical therapist with difficult cases requiring two people (Holmes, 1970). The aide undertakes domestic and clerical duties with minimal decision-making involved. Yet delegation by physical therapists has been found to have changed very little over the three decades since introduction of the assistant in the USA (Box, 1993). Concern has been expressed at the unsatisfactory supervision of the assistant by the physical therapist and the variation in levels of delegation (Schunk et al, 1992), with 64% of physical therapists surveyed in Indiana found to use aides to carry out patient treatments (Bashi and Domholdt, 1993). Rogers (1991), a physical therapist assistant, felt that assistants should be able to evaluate their own work and called for assistants to be trained to bachelor level so that they could carry out treatments without physical therapists' involvement, the physical therapists would then, she postulated, carry out research and evaluation tasks and qualify by master's degree. The training to associate degree level has resulted in a struggle for work between the assistant and the physical therapist, with the over-trained assistant dissatisfied with the control of their work by the physical therapist. This mirrors the problems caused by too many levels of work in organisations resulting in bypassing levels, duplication, low morale and excessive supervision (Rowbottom and Billis, 1977).

In Quebec rehabilitation technicians, who have three years training, can work under the direction of either a physiotherapist or a physician. These technicians were trained due to

the severe shortage of physiotherapists, but the physiotherapists preferred to delegate work to aides (McNeil et al, 1990).

Dyson (1990) discussed the shortage of therapists in the United Kingdom in an editorial. Dyson suggested that the role of the therapist was going to change in the 1990s with an increased usage of assistants and a need for a more flexible approach to recruitment and training. He suggested that physiotherapists were too qualified for many of the tasks they carried out.

There is evidence in the literature that doctors are delegating work to physiotherapists with the result that the role of the physiotherapist is enlarging; physiotherapists have been trained in outpatient clinics to undertake some of the work previously carried out by doctors, such as administering injections (Hockin and Bannister, 1994). If physiotherapists are to take on the skilled work previously carried out by doctors, it seems sensible that the tasks carried out by physiotherapists are also analysed to allow less skilled work to be considered for delegation to assistants, if training costs are not prohibitive. This will free physiotherapists to carry out more complex tasks.

There was little in the literature on physiotherapy on how to delegate, or to constructively delegate, apart from the work by Watts (1971) which resulted in several different grades of staff involved in one treatment, potentially fragmenting treatments. Watts may have over simplified the physiotherapy intervention by excluding the involvement of the more skilled level from the application of treatment. The example given was the administration of heat and exercises to the lumbar spine. The evidence based treatments for back pain nowadays are manipulative, unless contra-indicated (CSAG, 1994), the approaches requiring immediate re-assessment and therefore needing a highly skilled input. Although decision-making may not be required where little response is expected, patients may need to discuss their problem with the physiotherapist. There was no



mention of communication between levels of task delivery in Watt's model, to ensure that knowledge is available at the appropriate time. It is in this context of dealing with a patient with a problem that delegation in physiotherapy must take place. The patient's problem may remain whilst several treatments are carried out and although the application of the treatment may be routine, the problem is not and may require further assessment or discussion. Thus the need for physiotherapist and assistant to work closely together is indicated to allow appropriate skills and knowledge to be available to the patient during their treatment.

There is evidence in a single case study of an assistant being trained to carry out planned interventions for patients who have had a stroke. Parry and Vass (1997) report on the training required in order for the assistant to carry out physiotherapy treatments on the upper limb of patients. Comparison of the difference between those patients treated by a physiotherapist and those by the assistant will be made in a research study that is currently in progress. The reported training involvement on the part of the assistant however was high, with a reading list of five textbooks that physiotherapists are required to read during training. The assistant was required to understand the detail of anatomy, normal and abnormal movements in order to participate and was tested on her knowledge. The training investment was high both in time and personal commitment and one wonders if an assistant would be prepared to give such a commitment for no financial reward. The physiotherapists clearly felt the training was necessary, but practical application may have been possible without the need for under-pinning knowledge.

The literature into delegation in physiotherapy shows that the variation in delegation is wide. Where there are extreme shortages of physiotherapists, assistants have been trained to carry out treatments on common conditions without supervision from physiotherapists. Attempts to structure delegation over two decades ago has not solved the problem of inconsistent delegation today. The amount of training required for assistants is also a

source of wide variation from on-the-job training in practical tasks to self-learning to the level required by qualified physiotherapists. There was no evidence of cost-benefit-analysis of training methods to justify the investment in training of assistants.

## **2.3 SKILL MIX IN HEALTH CARE PROFESSIONALS**

The nursing profession has faced changes in skill mix due to the implementation of Project 2000 (UKCC, 1986) which has changed the role of the student nurse from one of delivering care as a team member to a learning and observation role, supernumerary to the team. The health care assistant has replaced the student nurse and there has been considerable debate in the nursing profession on the role of the assistant.

Dewar and Macleod Clarke (1992) spoke of the urgent need to make decisions on the allocation of work between qualified nurse and assistant. This was due to the emphasis being put on effectiveness and efficiency, projected demographic changes, the prospect of fewer trained nurses and the changes in the role of the student nurse. They implied that qualified nurses would have to delegate tasks to greater numbers of support workers and asked the same questions about the allocation of work between professional and assistant and their differences as Watts (1971) did in physiotherapy 25 years ago.

Ball and Goldstone (1987) undertook some research into the role of the support worker, which included a survey of first level nurses, to ask their opinions of the grade of nurse required to carry out 110 ward based tasks. Results showed a considerable portion of tasks listed as errands and housekeeping that were in fact judged as needing a trained nurse or required supervision if carried out by an assistant. An activity analysis supported this finding with 18 - 28% of nurses' time spent on non-nursing duties. The researcher suggested that nurses might not delegate due to lack of awareness, or due to the need to carry out non-nursing duties to reduce stress. Criticism of this research by Dewar and

Macleod Clarke (1992) pointed out the lack of independent analysis of tasks and the apparent reluctance of the researchers to allocate simple duties to unqualified nursing staff.

Salmond (1990) discussed a demand driven shortage of qualified nurses and questioned whether clinical support workers are a help or a hindrance. She argued that the key to the problem is that the person is an assistant to the nurse and should be educated and supervised by the nurse. She reported that a conference of concerned orthopaedic nurses collectively produced criteria on the use of clinical support workers and their role. These nurses recognised the need for professional nurses to develop delegation and supervision skills, and acknowledged that their own role would become more stressful and their workload increase, as they would inevitably have to oversee and motivate non-professionals. The group's decision on task delegation was largely dependent on the frequency of the task in order to build and maintain skills, with tasks rarely carried out in orthopaedics not considered for delegation despite their regular delegation in other specialities.

Draper (1990) saw the use of the support worker in nursing as similar to the traditional nurse/doctor situation. The division of labour between the primary nurse and the support worker being calculated in such a way that the low paid worker does the physically demanding repetitive work, with the primary nurse directing the activities. Draper argues that this position of power will do the nursing profession and their patients more harm than good, as they become involved in management and paramedical tasks, leaving many everyday essential aspects of care to the unskilled assistant, thereby inevitably reducing the quality of patient care.

Pearson (1986) argues that nursing tasks should be carried out by the trained nurse, and that efforts should be channelled into assessing the size of the case load a nurse can carry and not on the perpetual search to find the right skill mix.

The need for trust between two people working together to facilitate delegation was discussed by Manthey (1990) who advocated nurses working together to build confidence in each other. The trust level was said to be essential to allow for delegation of work and establishment of true competence. Hansen and Washburner (1992) also wrote of the skills involved in delegation, the need to be able to "let go" traditional tasks and accept help from others. The advantages of delegation were said to result in the patient getting more attention, nurses having more time to plan, greater feelings of participation for nurse and assistant, and overall increased efficiency because of the additional support for the nurse.

Actual research into the use of assistants in nursing is minimal. O'Byrne (1990) observed the newly created health care assistants settling into their new jobs in a project 2000 pilot site. The decision to delegate was being left to the ward sister, resulting in a fragmented picture of task delegation and frustration for assistants on wards where delegation was restricted to caring activities only.

The York Study (Carr-Hill et al, 1992), researching nursing practice in 15 acute medical or surgical wards at 7 hospitals, looked into skill mix in nursing and found that quality and effectiveness of care was dependent on the ratio of qualified to unqualified staff. Quality was found to be reduced where qualified staffing numbers were low, however quality of care of the lower grade nurses appeared to improve when working with a higher grade nurse.

Two papers discussed the cost of delivering care through increased use of the cheaper unlicensed assistive personnel (UAP). Manuel and Alster (1994) questioned the cost effectiveness of using the cheaper UAP. Reviewing the literature on the subject they argued that in practice qualified nurses had to work overtime to cope with the increased responsibility of higher workloads. Many newly qualified nurses had still to learn skills

and therefore were not in a position to delegate and hospitals were in fact employing UAPs in place of registered nurses, not because of difficulty in recruiting nurses but because of cost. A survey of the use of UAPs in 234 hospitals in California (Barter et al, 1994) concluded that most hospitals provided minimal training and inconsistent supervision of UAPs and that there was no monitoring of their use. Cost-effectiveness and outcomes were not measured so there was no analysis that employing UAPs was actually cost-beneficial. They called for studies to understand the effect of the growing practice of using UAPs in nursing. From both of these papers it was evident that there was a conflict between the professional nurse and the employer, the former wishing to protect their position as quality carer, the latter trying to reduce costs as much as possible.

A questionnaire survey of 400 school nurses on delegation (Josten et al, 1995) found that the nurses were concerned about the competence of assistants and about legal issues in delegating to assistants, *fearing being sued as the person with overall responsibility*. Some nurses reported delegating against their better judgement because they felt they had to. The response rate was low at 40%. Data on numbers of health aides the nurses delegated to was described as "Nurses reported delegating tasks to a median of 0 health aides, with a standard deviation of 3.05 aides". The majority of nurses were clearly not delegating to assistants as the data is highly skewed. Their views were not, therefore, based on experience in their present post but may well be the responses of professionals who would feel threatened by their employers employing assistants.

Nursing shortages received attention from Conroy and Stidston (1988) who warned that staffing shortages would replace finance as the single biggest constraint in the provision of services, dubbing the problem "the Black Hole". Grocott (1989) produced figures that showed that despite falling numbers of nurse learners, more trained nurses than ever were employed and accused nurse managers of distorting the facts when they proclaimed that nurses were leaving the profession in droves.

Kitson (1987) discussed the difference between lay-caring and professional nurse-patient relationships. She argued that if any one of the three main elements of the lay-caring relationship of commitment to caring, knowledge and skills and respect of persons were missing then the professional carer needed to take over the caring of the patient. As many of these qualities of caring are present in lay-caring, Kitson recognised that quality of nursing care needed to include how the nursing process respected the person, rather than just focus on the problem that caused hospitalisation. Her work also identifies that a large part of caring can be carried out by lay-carers until a part of the caring triangle is missing. In hospital that missing part will be addressed by the professionals, but the on-going caring can be carried out by assistants under the direction of the professionals.

Occupational therapists have a long history of utilising untrained assistants dating back to the First World War (Low, 1992) and support staff make up approximately half of the occupational therapy workforce (Atkinson, 1993). Atkinson remarked that the tasks these assistants carry out vary considerably from location to location and called for a re-profiling of the skill mix using skill analysis. Green (1991) saw professionalism as a bar to the development of the occupational therapy assistant. She suggested that a few occupational therapists should be responsible for a large workforce of assistants in order to meet the demands on the service and to concentrate on patient care, rather than on professional development or rarefied techniques. She saw the NVQ system as a pathway to assistants becoming professionals and thus promoting further growth of professionals at the expense of assistants.

In Canada the role of the support worker in the rehabilitation setting was the subject of an official report (Brockett, 1993) with a subsequent warning to occupational therapists to respond creatively and positively to skill mix changes or face the support worker becoming the replacement worker.

Medical staff are also letting go some of their work to nurses. The junior doctors reduction in hours prompted some research that showed that one third of the tasks carried out by house officers out of hours could have been performed by someone other than a doctor (McKee et al, 1992). A trained nurse was recently appointed to strip veins in preparation for heart bypass surgery, a task formerly carried out by doctors. This situation caused concern not only to doctors but also to nurses (Dimond, 1990).

There was little in the health professionals' literature on constructive delegation. It seems that delegation is expected to happen, was seen as desirable and necessary yet threatened the professionals who were the very people responsible for delegating and whose numbers would be reduced if delegation was increased. The literature demonstrates the dilemma of professionals. They are being asked to delegate to assistants to reduce costs, which inevitably increases their responsibilities and apparently threatens their jobs. For delegation to be acceptable to professionals it should be systematically set up so that the end result is a cost-beneficial service, with the professional at the helm and a quality service provided safely.

In the Health Service the power structure and values that make the organisation work depend on the professionalism of the people in the operating core and in the middle line; what the professionals do depends on their professional integrity (Mintzberg, 1989). The strive to reduce costs and improving customer satisfaction in British hospitals has led to standardisation and formalisation of procedures described by Payne (1996) as a machine organisation, the management, clashing with a professional bureaucracy, the nurses and doctors providing the services and has resulted in an uneasy alliance between management and professionals. The internal market in the National Health Service was seen by Payne as an attempt to improve the relationships of different professional groups whilst improving efficiency and customer satisfaction as a whole. Halal (1994) cites examples of considerable improvement in profits and innovations through internal

market initiatives that have increased in employees an awareness of costs and customer satisfaction.

## **2.4 JOB DESIGN**

The introduction of a system of delegation of tasks from one level of worker to another will result in a change in the job of both workers. If this were planned in physiotherapy, the physiotherapists would in theory be freed of routine tasks and would have more time to apply their knowledge. Skills could be used more appropriately. The assistant would experience an enlargement of their job as they undertook more skilled, yet routine, tasks.

Much work has been done in industry to redesign jobs in order to increase productivity, to enlarge and enrich jobs and to develop flexible teamwork. Decisions had to be made, as machines began to be used, on what tasks were allocated to man and what to machine. Early work on the division of labour was carried out by Taylor (1895, 1912) and is referred to as scientific management or Taylorism. Work was organised into a production process, so that workers repeatedly carried out tasks and were given financial incentives to increase productivity. The object was to increase work intensity and for work to be carried out in a more organised fashion. One result was the deskilling of craftsmen as workers were made to concentrate on one part of the overall process. Over time workers began to revolt against the monotonous and dehumanising jobs, leading to the need for flowline reorganisation. Planners began to consider the higher values of personnel's job attitudes and sought to take into account the interests of both employee and employer (Hackman and Lawler, 1971) by building into jobs variety, autonomy, responsibility and other desirable characteristics.

The introduction of work groups responsible for carrying out whole tasks occurred in the mining industry in the post Second World War years following automation and became known as sociotechnical systems (Trist and Bamforth, 1951). Responsible autonomy was



maintained by a group working together to perform a whole task, however individuals carried out a variety of tasks. This altered the role of the supervisor because decision-making was delegated to the group. The social needs of the workers were thus addressed, along with the technical needs of the system.

In an attempt to address the problem of narrow jobs, jobs were enlarged by stringing different tasks together (Conant and Kilbridge, 1965). Job enrichment was a further attempt to motivate the individual by adding more discretionary tasks such as deciding and planning. Herzberg (1974) pioneered the vertical role job enrichment. He saw workers as individuals and criticised the flexible group theory as restricting the work of the individual. If the workers gained psychologically by job enrichment, the employer would gain economically.

Davis and Wacker (1987) point out that some jobs remain today that have evolved traditionally and are protected by legislation and guilds. These jobs, that they describe as the professions, have not been subject to analysis or design and have "grown like Topsy". They give examples as the medical and nursing professions. Decisions on who does what are handed down from one generation to another, rather than being subject to scientific allocation.

In industry decisions on allocations of tasks between person and machine had to be made and criteria were designed and used to help make rational decisions. Fitts (1951) allocated functions between person and machine depending on ability, with machine and man competing for work. Jordan (1963) questioned this system due to the tendency to favour the machine. Jordan suggested that activities should be shared between the two working together and that one should complement the other. Pearn and Kandola (1993) describe Job, Task and Role analysis (JTR) as "Any systematic procedure for obtaining detailed and objective information about a job, task or role that will be performed or is

currently being performed” and go on to explain it is what needs to be done and how it is done in order to achieve a goal. JTR becomes necessary if there are changes in working practices, changes in technology affecting working practices or changes in employment legislation. They describe a functional job analysis as a flexible technique to gain detailed information on tasks and abilities in a system, using task statements on what is done and information gained at interview with staff to assess level of discretion, reasoning and ability. Actions, tools, methods and equipment are included in the statement. Training, including the investment in training and the level of knowledge considered necessary are investigated at interview. Cross (1990) describes a management approach to changing job structures by creating a climate for change and using management techniques to achieve group compliance and motivation, by involving the people at all stages of change and taking measurements to analyse change. The results are reported to the workforce prior to full implementation, the group work involves definition of the scope of the problem and the issues that need to be tackled. Similar functional analysis approaches using the knowledge of professionals in the field and group involvement may help decision-making on the allocation of tasks between health professional and support worker by the use of functional analysis of the work involved, followed by the allocation of tasks by using criteria. Health professionals have a high level of discretion in their work and therefore the use of reasoned criteria is important to justify allocation, and for acceptance in actual practice to be achieved.

In planning the delegation of work between people in health care, jobs will need to be designed so that a system is devised where work can be carried out according to the delegator's plan, achieving a satisfactory and timely outcome. Any changes in practice must be efficient without the loss of quality. This will involve decisions on task allocation, teamwork, and communication, planned work arrangements and training. It will lead to decisions on working arrangements, such as the working environment and communication networks, including documentation and work practices as the delegator

shares work formerly carried out by her or himself. The human science literature demonstrates that job redesign and allocation of work has been achieved in industry. It is possible that the experience in industry could be made use of in devising working arrangements in health care so that tasks can be carried out by assistants safely.

## **2.5 SKILL AND TASK ANALYSIS**

Skill mix suggests that workers with varying levels of skill are working in a team to achieve the team's goals. Decisions need to be made on the skills required to carry out tasks based on an understanding of the tasks, the nature of skills, the abilities of the team members and the circumstances under which the tasks are carried out.

Fleishman (1972) defined ability as the individual's basic trait, a product of earlier learning that becomes the basis for learning new activities; the individual with highly developed abilities being in a position to more readily become proficient in performing similar activities. Skill, however, refers to a level of proficiency obtained in a specific activity.

In analysing skilled performance, Welford (1976) argues that three of the brain's processing stages are involved, perceptual, intellectual and movement control skill but that different types of activities emphasise each of the different processes.

Bailey (1989a) describes further the three main components of skilled behaviour. Perceptual skill involves using the senses to relate new experiences to old in a meaningful way; it is the ability to efficiently combine new experiences with old. Intellectual skill entails the efficient linking of perception to an appropriate action based on reasoning, decision-making or problem solving. Movement control skill comprises of the response to perceived information and decision-making and is usually in the form of

a movement. Movement skills, as they develop, become highly co-ordinated and are often carried out automatically.

Rasmussen (1982) describes three levels of skilled performance, skill-, rule- and knowledge-based behaviour. Skill-based level is highly automated sensory-motor and cognitive performance taking place without conscious control as smooth, highly integrated patterns of behaviour. Rule-based level results in the selection of actions based on a hierarchy of rules stored in working memory, a reaction to a familiar situation from previous learning. Knowledge-based level is the response to entirely new, unstructured or complex problems and involves decision-making and problem solving.

In order to understand the skills used in carrying out tasks, the task must be described and the human behaviour analysed. Task analysis was defined as the study of what an operator, or team of operators, is required to do in terms of actions and/or cognitive processes to achieve a system goal and twenty-five different types of task analysis have been described (Kirwan and Ainsworth, 1992). Task analysis was said by McCormick (1976) to tend to focus on the human performance requirement and the skills and knowledge that need to be developed to enable people to perform the tasks as described. It involves the task analyst working with one or more experts in the system to be analysed (Drury et al, 1989). It is said to cover three main stages (Stammers, 1996), information collection, information representation and information interpretation. In the first stage information collection involves the gathering of information about the task from a range of sources including direct observation, interviewing job incumbents and running commentaries or "verbal protocols" from jobholders. Questionnaires and existing documentation can also be used to determine information about tasks. The second stage, or representation, involves task analysis and the third stage analysis of the information in the task analysis for training purposes and thus allows the basis of training programmes to be formulated and in itself leads to a task analysis of training function (Shepherd et al, 1992), to "manage and deliver training" for the organisation.

Hierarchical task analysis (HTA), described by Annett et al (1971) breaks complex tasks into subtasks, which are further described using a hierarchy of *operations*. *Plans* describe the circumstances under which the *operations* are carried out to achieve a goal, allowing scope for detailed analysis of performance, lending itself to be useful in work organisation and training (Shepherd, 1992). The detailed information involved in HTA renders it useful to plan the assistant's role in carrying out parts of tasks, such as carrying out ultrasound, that have been analysed as requiring largely skill-based behaviour, the plans being useful communication triggers. Ultrasound is used as part of a package of treatment in physiotherapy, its effects are cumulative and so it can be applied several times a week for as many as thirteen ten-minute applications (Herrera-Lasso et al, 1993, Low and Reed, 1994)), the dose being planned at the onset of treatment. The procedural steps for applying an ultrasound treatment and the rules on communication between the physiotherapist and the assistant can be documented in considerable detail in the operations and plans in the HTA, formalising the safe delegation of the task. HTAs use diagrammatic form of task hierarchy to show the structure and relationship between tasks and tabular form to allow detailed comments to be made by the user at each stage. Kirwan (1988) used HTA to demonstrate that operators could cope with their workload and complex tasks in a nuclear chemical plant safely. He also carried out an overview HTA for the operators' supervisor. This demonstrates the use of HTA for different levels of workers and thus its potential usefulness for analysing roles between physiotherapists and assistants. When HTA was used by Shepherd (1992) to analyse maintenance training, he found that the analysis provided the basis for organising a means of assessing apprentices and managing on-the-job training, as well as formulating safe practices and providing the basis for written procedures. Much of the work in physiotherapy involves the use of practical skills, but as with maintenance fitters, the skills are based on assessments of the situation, with the skills growing with experience. One of the main worries about passing clinical tasks to assistants is the safety aspect of the involvement of someone less skilled. HTA, already used for analysing and expressing safe working

procedures, can, in the context of delegation in physiotherapy, rationally link the activities of the assistant to the goals and responsibilities of the delegating physiotherapist.

Whilst working in a job it is assumed that skills are built due to experience in the job and that it is the skills that make job holders more proficient. However knowledge is also built as part of the experience of work and the growth of knowledge with experience was found to be the most important factor in the proficiency of administrators in organisations by Nass (1994) with the growth of technical skills alone not increasing efficiency with experience. This challenges previously held beliefs that skill building is the most important product of experience.

Hockey (1996) described manual work as having a skill and a cognitive component and cognitive work as having some overt actions whilst having a high degree of internal information processing. He explained that the differences between cognitive and manual work were a matter of degree rather than of kind. He described the difference between skill acquisition or competence and skill proficiency or performance by explaining that performance may fail due to factors such as motivation that restrict the ability to use the learned skill under prevailing work conditions, and by opportunities and constraints built into the work conditions. Thus varying degrees of knowledge and skills are necessary to perform tasks but the working environment must be conducive to the activity to allow good performance and thus to reduce any differences between competence (potential skill level) and performance (actual skill level).

Stammers (1996) distinguishes between knowledge and skills by viewing knowledge as “things in the world” and skills as “how to do things in the world”, proceeding to refer to them in the more psychological terms described by Anderson (1982) as “declarative knowledge” and “procedural knowledge”.

The Human Science literature has been found to provide a basis on which to apply a scientific and reasoned approach to task allocation, with the facility to include conditions to trigger responses and structure practice, and therefore to plan reactions in a dynamic setting such as health care and ultimately to provide a safe system of working.

## **2.6 COST-BENEFIT ANALYSIS**

Cost-benefit analysis is regarded as important because any act of delegation entails work and risk on the part of the delegator to provide opportunities for benefits to be derived from the contribution of the delegatee.

There is little in the Health literature on cost-benefit analysis. However clinical audit is beginning to raise awareness to issues of improving services for either the same or reduced costs. A policy statement from the Department of Health (1993) stated that clinical audit is widely recognised as the systematic analysis of the quality of clinical care, including the procedures used for diagnosis, treatment and care, the associated use of resources and the resulting outcome and quality for the patient. Audit can be used to reduce care and cut costs if benefits are not measured along with costs, as demonstrated by Hyslop (1993), where a group of chronic patients were "treated" by health education so that they could help themselves, rather than receive any hands on treatment. As expected the self-help interventions were cheaper than actual treatment, which would anyway have expected to include self-help.

Harrison (1991) described cost-benefit analysis as a systematic approach to aid the decision-making process, indicating its usefulness in change or in the delivery of new services. Suggested uses in physiotherapy were measuring the difference between delivering services in the department versus the community, and provision of an inpatient

specialised unit as opposed to a more generic pattern of patient care. Harrison, coming from a background in physiotherapy education, used a working example of various options for running a degree course for physiotherapists, from type of course and award to length of course, including distance learning. Costs and benefits were listed, but the long-term benefits were assumed rather than compared with present practice. Harrison however pointed out that benefits are not always easy to measure.

In health care it is obvious that if quality and quantity can be maintained and costs reduced, then the change is beneficial to both the service and the client. It is surprising therefore that there is little systematic analysis of cost and benefit. There is more in the applied psychology literature on comparison of training methods. Orlansky (1985) stated that new training technology should be recommended for adoption when it is more effective than current technology and cost the same or less, but should not be recommended if the reverse was the case. Levin (1983) provided an example of eagerness to adopt a device that increases performance without looking at long term performance or alternative devices, pointing out that equal and better devices were available and would have been more beneficial to adopt. Cost-benefit analysis would have helped the decision-making process by careful evaluation of the problem and alternatives, with a detailed analysis tailored to the audience.

If clinical tasks are to be delegated to assistants then there should be benefit to the service in terms of a reduction in the cost of the service, and the optimal use of scarce resources. Physiotherapists are a scarce resource, and yet there is no structured system to share work between physiotherapist and assistant. If assistants can be trained on-the-job to do some of the clinical tasks presently carried out by physiotherapists, a low investment in training would soon produce a trade-off if the assistant was used effectively. A formula to measure the cost of training and monitoring the assistant against the savings made by the difference in the salaries when the assistant carries out



the task would analyse the benefit to the service, assuming that there was no loss of quality.

Thus the literature of cost-benefit analysis of human resources was found to be sparse. The application of cost-benefit analysis to delegation was absent.

## **2.7 DELEGATION**

Delegation was described by McBreath (1966) as the allocation of tasks from the position holder with responsibility for achieving objectives to a subordinate who has been given authority to carry out the task and who reports to the position holder.

Oates (1993) defines further the three terms involved in delegation, responsibility, accountability and authority, explaining the following:

*"Responsibility relates to the ownership of the task that has been delegated. The subordinate has been entrusted to carry out the task and to see it completed. Authority is the power given to the subordinate to enable the responsibility to be discharged and necessitates ensuring the subordinate has the available resources and skills to carry out the task. However, the accountability for the task remains with the delegator."*

Oates goes on to postulate that it is perhaps the risk involved in handing over responsibility for the task completion, whilst remaining accountable, that causes a reluctance to delegate.

Delegation in the literature was, to the greatest extent, the term given to the devolvement of decision-making in structures of management in organisations; delegation was alluded to as something that happened and indeed was desirable, but the mechanics of how

delegation of actual tasks is organised was not included in the literature perhaps because task allocation is often a management decision and not left to the discretion of operational staff. The issues involved in delegation were, however, raised.

### **2.7.1 Delegation of decision-making**

There was little in the literature, scanning the past twenty years, on the construction or planning of delegation, although there was much on delegation of decision-making by managers or leaders. McConkey (1974) had discovered twenty years ago that delegation was given most attention in nonempirical management books and journals. Delegation was found to be referred to in the Management and Social Sciences literature in the context of delegation of decision-making in leadership styles and in organisational structures, but there was little on the facilitation of delegation of tasks from one level of worker to another.

Delegation was referred to in the context of control in organisations by Evans (1992a) who described the downward chain of delegation, where the shareholders delegate organisation of the business to the board of directors, who formulate policy and in turn delegate to the chief executive. The chief executive cannot do everything himself and so delegates to managers who in turn delegate to supervisors, who finally delegate to workers, who perform the tasks. At each level the accountability is upwards.

Child (1984), in looking at organisational design, describes four different styles of organisational control, with variation in the amount of delegation:

- 1) Centralised control, likely to be the control strategy of small companies, has decision-making kept centrally, often by one person, and supervision is direct.

2) Beaucroatic control, more likely in large organisations where it becomes impossible for one person to keep tight control, has responsibilities clearly defined and specified formally; delegation of routine decision-making being within clearly prescribed limits.

3) Output control, often used in organisations where product demand is high, allows delegation of decision-making on operational matters, with responsibility for complete outputs delegated to jobs and units so designed to act in a semi-autonomous manner.

4) Cultural control devolves responsibility down to workers who are often professionals and who have been selected, trained and developed to perform in a manner consistent with management objectives in an environment where there is a shared culture.

Levels of delegation, therefore, can be adapted to suit the needs of the organisation by creating a system of control that takes into consideration the objectives of the organisation and the skills and working practices of the workers.

Armstrong and Dawson (1989) point out that delegation becomes more necessary as the organisation becomes larger. As organisations diversify, the knowledge and skills required change and are more likely to be found close to the working unit; this situation favours delegation, with the result that the span of control is flat rather than pyramidal, instructions not needing to be passed down many levels and decisions made near to the work unit.

Different leadership styles have been described and although seen as methods of influencing subordinates, the end result is the amount of control needed to get the job done. Tannenbaum and Schmidt (1973) described management styles ranging from conservative to liberal but drew our attention to the effect of the prevailing organisation's influence on the relationship between manager and non-manager. A liberal style of

leadership is more likely where non-managers identify with the organisation and are competent. Fielder (1967) had the view that effectiveness of leadership styles, which were autocratic or democratic, were dependent upon the situation, the more favourable to the leader, the more autocratic the style. Vroom and Yetton (1973) argued that leaders should vary their style of management dependent on the quality of decisions to be made, the level of acceptability of the subordinate and the time scale of the decision-making process. Hersey and Blanchard (1977) pointed out that task behaviour and relationship behaviour were the important factors in the leadership style, and that situational leadership requires that leaders adapt to the situation at hand. A developed group of subordinates can take the responsibility and be "willing and able" but an immature group cannot. Group members' abilities will vary, so managers will need to demonstrate different styles, dependent on subordinate development and need to monitor outcome to see that the style is appropriate. Blake and Mouton's (1964) managerial grid described variation in leadership styles from concern for the task to concern for people in a 9 \* 9 grid. Redditch (1970) added effectiveness to the grid and described 8 types of style, the least effective being unconcerned with the task or people, the most effective caring for both, recognising individual differences and delegating tasks according to capabilities, thereby achieving maximum output and linking output and delegation with leadership style.

Handy (1993a) pointed out that there is a relationship in delegation between trust and control the sum of which is always constant; if managerial control is reduced then trust is increased, if control is tightened the manager is perceived by the subordinate to have less trust in him. Control can be relied on by the subordinate as a means of a double check by the manager on their work, however trust leaves the manager free to do other things and breeds responsibility, obviating the need for controls.

Bryam (1986) reviewing the literature on participative leadership found that participation with subordinates varied from directive or authoritarian, to negotiative or bargaining,

consultative or discussion, participative or joint decision-making to finally delegative or freedom to decision-make. These variations in participation and the factors likely to effect participation, such as task characteristics, personality characteristics of subordinates and the desire to participate along with the disposition of the leader, were explained as reasons why the outcomes of participation were not conclusive from the literature. Bryman concluded that participation and delegation contribute to job satisfaction and to a lesser degree to enhanced performance and other good outcomes, such as low turnover and absenteeism, but that findings were not conclusive with causality, experiments finding that poor subordinate performance resulted in "closer" or less participative supervision. He went on to discuss that other means of motivation may achieve similar or better results such as goal setting, job enrichment, control and rewards. Bryman pointed out that the evidence suggested a gradual shift from leadership style to leadership behaviour, where leaders were using behavioural techniques such as motivating, rewarding and controlling subordinates to achieve greater performance and satisfaction. It appears from this evidence that leaders managerial skills are changing to use increasingly behavioural techniques to manage the actions and behaviour of their subordinates.

Moorhead and Griffin (1992) discuss the degree of centralisation and the locus of decision-making in the organisation, favouring managerial control. They point out that managers can assign tasks to workers, by giving them authority over resources to carry out the task, and making them responsible for their actions but managers remain overall responsible for the outcome. They argue that the relationship between authority and responsibility is one of parity, that authority over resources must be sufficient to enable managers to meet the output expectations of others.

Horn (1984) on decentralisation, states that delegation not only brings benefits to the manager whom is freed from routine tasks, but also satisfies the recipient. For the

recipient delegation is one of the best training methods to develop in the organisation. Horn thus sees delegation as a means for personal development for staff.

Vinton (1987) also referred to the benefits of effective delegation as a process necessary for achieving optimum results in both outcomes and employee development. The connection between delegation and development was emphasised, as Vinton argued that 90% of a person's development is the result of his experience on the job, that learning is the result of doing, and thus of what one is allowed to do. Reasons why delegation is often underused were discussed. The transfer of undesirable tasks, with the resulting loss of respect for the manager by disillusioned subordinates, was given as one example of failure of delegation. Managers' feelings of loss (power, authority, meaning, personal expression and achievement) resulted in the delegated tasks being viewed as something taken away rather than additive, and therefore delegation was unlikely to be successful. Vinton went on to discuss the need for effective delegation to be managed, with managers understanding the delegation process and the diverse needs and skills of employees.

Haynes (1974) argued that delegation is not used to its maximum by many managers, and that employees miss out on involvement and the employer on the increased productivity delegation might bring. She then goes on to advise on how to delegate by giving guidelines; delegate by expected results, measure accomplishments, give staff all the information, use only qualified staff, establish controls to alert you to exceptional situations. She suggests that managers should examine their work and decide what can be delegated immediately and what can be delegated once someone is trained. Delegation is again in Haynes's paper looking at managers' decision-making tasks and not the delegation of tasks from one level of worker to a subordinate.

Stewart (1982) studied delegation in bank management and found a contrast in different management styles with some managers delegating internal bank management to

assistant managers and concentrating their own efforts in new business, whilst others emphasised staff supervision and kept tight control of internal matters.

In discussing role underload, Handy (1993b) describes the conflict individuals feel when the role definition is out of line with self-concept, the individual working below their capacity. Handy explained that delegation when first practised could result in a feeling of role underload, the delegating manager feeling naked and unneeded. This form of role conflict was described by Handy as being the most insidious and most ignored perverter of organisational efficiency.

Adair (1988) linked effective delegation to having the right staff, proclaiming that delegation did not happen “just at will” but that selection and training of staff was essential for delegation to be successful. Organisations should pursue definite policies on selection, recruitment and performance planning in order to create a climate for effective delegation. Dubrin (1990) remarked that personal productivity would improve through delegation but that the availability of competent and willing subordinates was essential along with the need to keep control by following up delegated work.

Murdock and Scutt (1995) advocated delegation, stating that “management is about achieving results through people” and therefore “all managers should delegate”. They postulate that successful managers delegate, but yet that delegation is very often dealt with badly if at all. Failure to communicate, lack of trust or inability to do it (delegate) were cited as the reasons for delegation not happening. If this is a problem for managers, then it is little wonder that it is a problem to a profession of non managers whose prime concern is to keep control of patient care, hence the need for delegation to be constructed, using tools that support delegation in the context of on-going patient care by the professional ultimately responsible and ensuring cost-benefit of the training to support delegation.

It appears from the literature on leadership that style of leadership and the amount of delegation is dependent on the organisation, the personal style of the leader, the task being carried out and the competence of the worker, and the influence of the organisation on the situation. However leadership and management are subtly different (Bennis and Nanus, 1985) with leaders "doing the right thing" and managers "doing things right"; leaders setting the purpose and vision for the organisation or department and managers implementing it. It is evident that empowerment of the workforce in organisations where decision-making is decentralised in an atmosphere of trust is likely to nurture a developing workforce. It is also evident that managers vary in their attitude to delegation due to their own personal style and their capacity to relinquish control. It follows that if delegation could be actively managed, with an initial investment in performance coaching there would be pay-off in both released time for the manager and in the development of the worker. This model could be used in the context of patient care, where a task can be delegated but the care will remain under the control of the delegating health professional.

### **2.7.2 Delegation of tasks**

It is perhaps the risk involved in handing over responsibility for the task completion whilst still remaining accountable that causes reluctance to delegate.

Castledine (1991) described accountability in nursing care as:

*"That special phenomena related to nursing practice which nurses are entrusted with, answerable for, take the credit and blame for, and can be judged within legal and moral boundaries."*

Castledine summed up by pointing out that nurses are accountable to society, to the employer, to the profession and to themselves.



Health professionals could carry out all patient care without delegating. Yet delegation of tasks to subordinates, according to Oates (1993) has many benefits, including the reduction of costs and the fostering of teamwork. If care can be delivered by a subordinate as effectively as if the delegator was carrying out the tasks, then the duty to society and to the employer should indeed be to delegate the task.

In order to provide the subordinates with the skills to carry out delegated work without loss of effectiveness or quality, delegation should be managed or constructed. "Constructive delegation" is the term given, in this thesis, to the process of organising and planning delegation, so that the end result is a system where the delegators can transfer part of their work to subordinates. The subordinates have, through planning, been given the authority to carry out and complete the task, and will remain accountable to and give feedback to the delegator on task completion.

The end result of delegation is that the subordinate achieves an outcome, although the delegator remains accountable to others for that outcome. The fact that the subordinate is carrying out the task instead of the delegator gives the subordinate the opportunity to build skills and develop further. Personal development of the subordinate could be an outcome itself. Oates (1993) described performance coaching as an important means of training, where delegation and empowerment is used as a means of developing staff on-the-job, thereby avoiding training costs. The subordinate is encouraged, by empowerment to use his or her initiative, with the delegator coaching and supporting in the front line.

A conflict may occur when professional ideals conflict with organisational objectives, described as a duality of functioning by Shaw (1984). Coke (1983) expressed concern that professionals may have a greater allegiance to their professions than to the enterprise that pays their salaries. Reluctance to delegate tasks to the subordinates outside of the profession in order to protect their professional standing is one example of possible

conflict. Glover (1978) points out that professions have been more concerned with the status of jobholders rather than performance. Health professionals are licensed to practice by State Registration regulations, with the professional body laying down rules of professional conduct. The individual health professional may be reluctant to delegate, according to Barter and Furnidge (1994), due to the fear that an unlicensed assistant will deliver care that departs from the standard that would have been practised by the registered professional. The relationship between the trained nurse and the assistant may be the biggest bar to delegation, del Bueno (1993) postulates. Trust and control are a necessary part of that relationship in delegation; trust is built up as two people work together. But the professional has to "let go" and pass on work to the assistant, which may detract from the image of the busy and harried professional who is able to "do it all" and cope. The professional needs to remain in control but to delegate to suitably experienced and competent assistants.

Leana (1986) discussed predictors of delegation in a paper. In the empirical study involving insurance claim's adjusters, supervisors' workloads, their perceptions of subordinates and the importance of decisions were found to be significant predictors of delegation. Supervisor predisposition to sharing authority and subordinate's job satisfaction were not significant predictors, but job competence and supervisor's workload did interact with delegation. This tends to support the view that competence and performance will improve with delegation, rendering delegation more acceptable to the position holder. It also suggests that an increase in the work intensity of the supervisor will result in their increasing the level of delegation. This, one of the few empirical studies of delegation, used the measure of the level of decision-making as the observation of delegation having taken place. It studied why delegation was happening, but no recommendations were made as to how to constructively delegate.

Managerial control of complex tasks was examined in a field study of the management of information systems development at thirty-two sites by Kirsch (1996), who found that

of four types of control, behavioural, outcome-based and self control were important factors in managerial control dependent on the project sponsor's level of system development knowledge and the measurability of behaviours and outcomes, but that clan control, an informal type of control involving the combined control of group members who shared common goals and values, had no relationship with the independent variables and therefore was not a relevant factor for control of projects. The researchers found that technical knowledge of the controller was an important factor in the behavioural control of technical tasks, and more knowledgeable controllers induced self-control. Domain specific knowledge, the researchers deduced, was critical to manage the activities associated with the task. Clan control, Kirsch suggested from the results, was not relevant for controlling budgets, schedules, requirements or standards and discussed the possibility that the agenda of informal controls by groups may be at counter purposes to the formal controls. This suggests a need for a professional manager to manage the activities of professionals, but that professional group control may not be relevant due to the possibility of conflict with organisational goals.

In a profession like physiotherapy, tasks are carried out as part of the larger goal of patient treatment which can be complex, involving several interventions including education of the patient. In industry the tasks would be divided between workers according to ability by managers who would apply task allocation techniques and redesign the jobs. In the health professions, the professional has the discretion to carry out a programme of care, of which one part may be to administer a particular task that could be delegated to an assistant. The manager can only set the scene by ensuring availability of the assistant with the ability and skills to carry out the task safely in a setting conducive to delegation, but the physiotherapist who is accountable for the patient's care must delegate the task to the assistant. The construction of a delegation process will facilitate this procedure through enabling delegation to take place by addressing the issues systematically, thereby addressing the concerns of groups of

professional staff and allowing for the building of trust between them and their in trained assistants.

## **2.8 DISCUSSION**

Although delegation is alluded to in the literature, there is little on how to construct delegation from one jobholder to another, particularly in the context where the jobholder must be left with the discretion to delegate, as with health professionals. In the literature the jobholder is often a leader or manager and delegation is described in terms of decision-making. This suggests that the delegator has knowledge of the level of competence of the subordinate, in order to trust the subordinate to carry out the task for which the delegator remains accountable. The delegation process therefore will, if used, allow the subordinate to develop skills dependent on the tasks delegated and the supervision available. As subordinates develop, so the outcome will be enhanced, with less time required to supervise, freeing the delegator to do other work and therefore, in the case of physiotherapists and other health professionals delegation will enable their expertise to build. There is a relationship between delegation, development, outcomes and supervision which, it can now be seen, McBreath's simple description misses.

Delegation will, as the literature has demonstrated, enable the recipient to develop skills and should therefore be a dynamic process, added to as the subordinate develops. There has to be a starting point for delegation to occur which will involve at least two people. The delegator has to start by handing over responsibility for part of their work to the delegatee. McBreath's description of delegation assumes the acceptability of delegation between position holder and subordinate. In practice the position between delegator and delegatee is one of teacher and student, if the delegatee is to learn new skills; as competence is achieved, so supervision is reduced. The delegator builds trust in the subordinate, whose development continues. Between professional health care worker and assistant, this process will need to be managed to overcome the conflicts found in the

literature search in both physiotherapy and other health care professions to be caused by professional feelings of loss of control of patient care and professional protectionism that could be motivated by the well-being of the profession rather than that of the organisation. The decision to delegate therefore may not be made unless there is a formal procedure in place to facilitate delegation.

The literature search into job design and skill and task analysis found that there are well established techniques for examining tasks and for allocating tasks to different skill levels, with tried and tested tools that could be applied to procedural tasks in health care. The ability to plan communications sequentially as part of the analysis could be used to formalise delegation of tasks structure reporting back mechanisms.

Delegation, if successful, will initially involve the investment of the delegator's time in supervising task delivery. As competence is built and the amount of supervision reduced, the investment will have been worthwhile. Task complexity as well as subordinate competence is a variable on which delegation will depend. Simple routine tasks will soon be learnt, unlike tasks that involve knowledge and decision-making. In physiotherapy the delegation of routine tasks from senior physiotherapist to assistant could be more productive than supervising an inexperienced junior physiotherapist carrying out the task. In the case of the assistant there will be little decision-making, but the junior will be expected to use her or his knowledge and experience to make decisions and will be in a learning situation due to the lack of direct experience in the speciality. Operationally it could be worthwhile for the senior to pass on routine work to a competent assistant, but delegation of patient care to an inexperienced junior, who might expect to work independently, might prove costly. Cost-effectiveness needs to be brought into the delegation equation both in the investment in training and operational costs. This literature search has found that there is a need for research into the construction of delegation in the professional's role in health care delivery and in its cost to the service in

order to develop skills in different levels of staff and to make good use of the developing expertise and knowledge of the health professional.

## **2.9 CONCLUSION**

The literature confirms that there is a conflict between health professional and employer in levels of skill mix, the professionals feeling that a cheaper service will be at the expense of quality, the employers demanding value-for-money. The result in nursing seems to be fragmented attempts at skill mix. A similar picture appears to prevail in physiotherapy, with physiotherapists to assistant levels varying around the country and indeed within regions, due to historical reasons for variation in growth.

In the health literature there is little on the allocation of tasks between professional and assistant. In the absence of task analysis, tasks delegated to assistants vary widely and appear to depend on the availability of physiotherapists rather than on the nature of the task.

Much has been done in industry in job design. Scientific techniques used in industry could be adapted for job design in the health professions. Task analysis could enable complex tasks to be broken down into elements and elements analysed for training and working procedures for assistants. This way the skills of the professionals could be used more for tasks that reflect the high investment in their education to degree level, and assistants could be developed on-the-job to work in close communication with their professional colleagues and carry out skill- and rule-based tasks. The planning of procedures and communications using HTA will set the safety rules for the assistant's role in task delivery. Cost-benefit of training and using assistants should be taken into consideration, for cost-benefit is a major consideration in using assistants as it enables the expertise of the physiotherapists to reach more patients.

From the literature on delegation, it has been demonstrated that delegation is an important factor in building skills in subordinates. Time spent on delegation has been found to be an investment, and, if tasks are frequently carried out will be cost-effective. As long as quality is not lost, and the professional remains in control, the delegation process will also be cost-beneficial. For this delegation will need to be planned and managed, or constructed. The problem in physiotherapy on lack of delegation of tasks to assistants was discussed in the literature over twenty-five years ago. It remains unsolved to this day. There is an urgent need to develop a system to manage the delegation process in physiotherapy, so that any anxieties expressed by professional staff about safety are answered with cost-benefit analysis incorporated, so that there is benefit to the service, to the patient and to society by reducing the cost of caring. This will involve the construction of delegation.

## **CHAPTER THREE**

### **THE PRESENT CULTURE OF DELEGATION IN PHYSIOTHERAPY AND THE NEED FOR CHANGE**

#### **SUMMARY**

This chapter looks at the present services provided in physiotherapy outpatient departments and considers the tasks that are carried out. It includes a survey of physiotherapists and assistants, in an area where the physiotherapist to assistant ratio was the lowest in the United Kingdom. This survey describes the tasks being carried out by all staff, the task frequencies and gains the opinions of the physiotherapists on the utilisation and training of assistants. The findings of variation in utilisation of assistants from site to site and the lack of consideration of cost-benefit of allocation of tasks confirm the need for delegation to be actively constructed and managed. The concerns expressed by 82% of the physiotherapists about assistants carrying out clinical tasks endorse the need for a systematic approach to delegation to both address the concerns and provide a system that the staff can be confident to use.

#### **3.1 INTRODUCTION**

This chapter will examine the variation in skill mix and look at tasks carried out by

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physiotherapists and assistants. The frequency of clinical tasks carried out by staff will provide information on the tasks available for further analysis for their suitability for delegation. The activities carried out by assistants in outpatient physiotherapy in the United Kingdom had not been researched before, according to the literature. The chapter also discusses the possible causes of lack of delegation in outpatient physiotherapy and the likely consequences to society of this.

### **3.2 THE PURPOSE OF PHYSIOTHERAPY**

Physiotherapy was defined in the 1984 Curriculum of Study as:

*"A systematic method of assessing musculoskeletal, cardiovascular, respiratory and neurological disorders of function including pain and those of psychosomatic origin and of dealing with or preventing those problems by natural methods based essentially on movement, manual therapy and physical agents."*

In outpatient physiotherapy physiotherapists specialise in musculoskeletal disorders. Patients are referred to the physiotherapist by their General Practitioner or by Orthopaedic or Rheumatology Consultants. The role of the physiotherapist is to make a clinical diagnosis, to set and implement a care plan, involving both education and treatment, and to evaluate the progress of the plan and the final outcome for the patient.

Musculoskeletal conditions are either the result of trauma, disease or degeneration due to age and overuse, such as work-related activities. Degenerative conditions are particularly common within the population and, with an increasingly elderly population, their incidence will correspondingly increase. Approximately 23% of physiotherapists in the NHS work in the outpatient speciality treating these conditions, according to a 1992 survey of physiotherapy staffing levels (CSP, 1992). Other specialities listed in the

survey in physiotherapy were acute (surgery, medicine and orthopaedics), medical elderly, mental illness, learning difficulties, obstetrics, specialist rehabilitation, community and paediatrics. Outpatients came second to acute services for the highest percentage of physiotherapists working per speciality.

The definition of physiotherapy reflects the diversity of skills required to practise in the various specialities. The central core of physiotherapy was described in a discussion document as developments around three core skills, massage, remedial gymnastics and electrotherapy (CSP, 1988). Physiotherapy practice was characterised by a strong patient-physiotherapist relationship and the solving of the patient's unique problem by direct intervention or through education, thus helping the patient to take responsibility for their own recovery and prevention of recurrences.

### **3.3 ORGANISATIONS WHERE PHYSIOTHERAPY OCCURS**

Physiotherapists in the NHS treat patients with musculoskeletal problems in physiotherapy clinics, usually called "physiotherapy departments", in District General Hospitals and Community Hospitals. Increasingly physiotherapists are working with General Practitioners in local practices.

Physiotherapists also treat patients in private practice, either in clinics, private hospitals or in industry.

### **3.4 THE STAFF EMPLOYED IN PHYSIOTHERAPY OUTPATIENTS**

Staff typically working in outpatient physiotherapy departments in the United Kingdom are qualified state registered physiotherapists supported by unqualified assistants.

Physiotherapists gain their qualification following further education, entry qualifications for which are usually three Advanced Level GCSEs, and qualification is by degree after three years of study. Post qualification physiotherapists are encouraged to work as junior physiotherapists in large hospitals where they can gain experience in the various specialities. After gaining two to three years' experience, physiotherapists begin to specialise in the area of their choice as senior 11 physiotherapists. Further progression to senior 1 level results in the physiotherapist taking clinical responsibility for physiotherapy in the speciality due to their growing expertise. Progression beyond this takes the physiotherapist into the managerial grades, with increasing responsibility for the organisation of staff.

Assistants are trained on-the-job to carry out tasks under supervision of the physiotherapists. The qualifications necessary for potential assistants are left to the physiotherapy managers who determine the selection criteria for assistant posts. Academic qualifications are not usually required; work experience in caring is preferred. Once in post assistants can undertake training externally to National Vocational Qualification (NVQ) level one, two or three. The tasks carried out by assistants are left to the discretion of the physiotherapist.

### **3.5 THE TASKS INVOLVED IN PHYSIOTHERAPY**

A functional analysis of the physiotherapy outpatient service is presented (figure 3.1). The main elements of the patient intervention can be seen to be assessment, planning, carrying out treatment or other intervention and discharge, described by Williams (1991) as the four stages of work in physiotherapy. These stages, plus information on the source of referral, form the structure for information collected in Problem Orientated Medical Records (POMR) now widely used as documentation for each physiotherapy episode of care (Jones, 1991). The functional analysis describes the elements involved in an episode

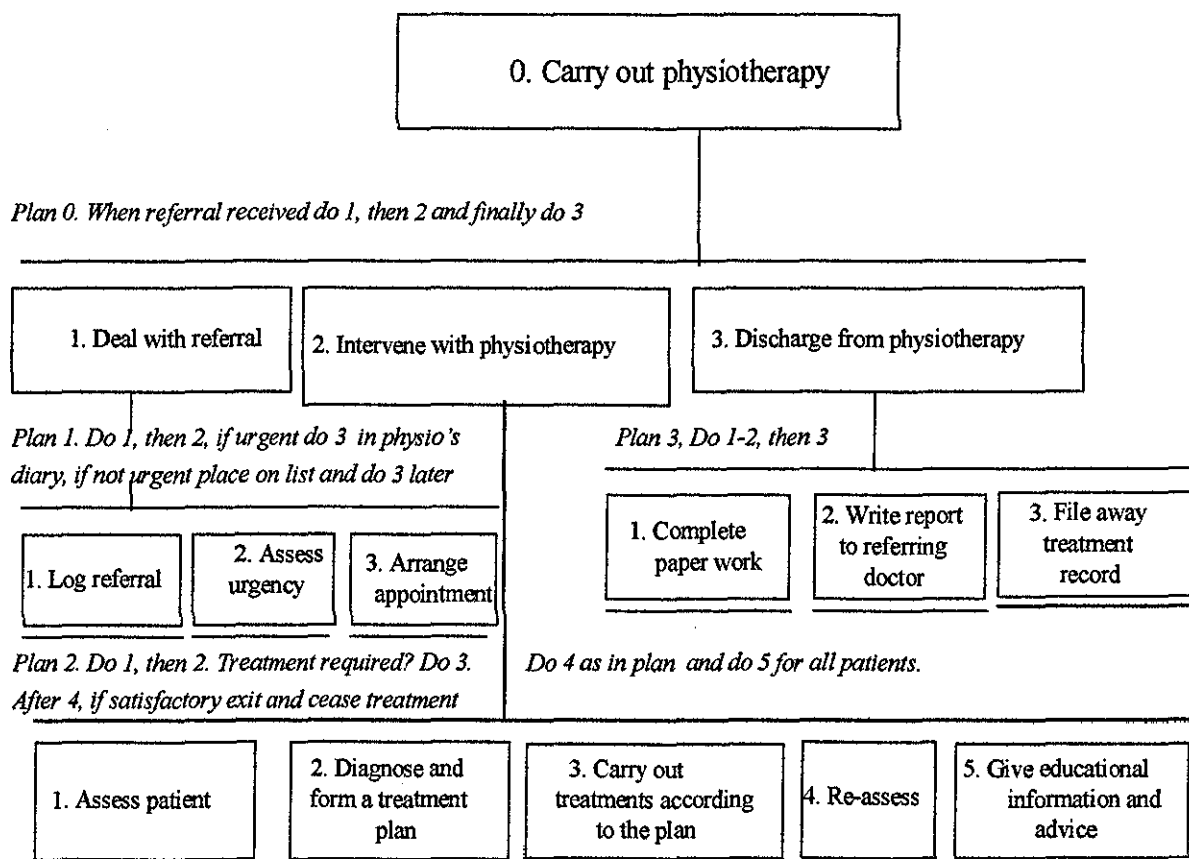


Figure 3.1 A functional analysis of the physiotherapy intervention represented in the format of hierarchical task analysis.

of care without reference to the grade of staff involved in the process; it examines what happens during the intervention. Functional analysis (Laughery and Laughery, 1987) is concerned with exploring and understanding the dynamic and static aspects of systems and is applied at either the design or operating phase of a system to reduce errors, optimise performance, consider safety consequences and solve problems in systems; the technique involves description of the separate steps involved in a process described in sequence. The information for the flow of events in physiotherapy outpatients was gained at interview with ten physiotherapy managers (Saunders, 1995b).

Carrying out treatment in physiotherapy can involve administration of treatment two or three times a week for several weeks for chronic conditions and once or twice daily for acute conditions (Low and Reed, 1994), due to the cumulative effect of the treatment in the tissues and the gradual response expected. This is supported by research into physiotherapy practice using electro-therapy (Binder et al 1985, Haker and Lundeberg, 1991, Vasseljen, 1992, Herrera-Lasso et al, 1993, Saunders, 1995a). Treatments may involve the three core skills of exercise therapy, electro-therapy and manual therapy. Task analysis of these treatments will enable analysis of the skill level required for the task to be carried out.

Examples of hierarchical task analysis (HTA) are given for the physiotherapist's (figure 3.2) and the assistant's (figure 3.3) role in ultrasound. HTA is a well established technique for examining the performance of tasks in terms of goals, plans and operations. HTA was developed by Annett and Duncan (1967) and refined and demonstrated by Duncan (1974) and Shepherd (1976). The concepts of validity and reliability are difficult to apply to HTA, as with most forms of task analysis. This can rarely be done formally, but depends on the analyst carefully checking the analysis with other sources, to make sure that the analysis is both consistent and properly reflects the task being analysed. Indeed, the sequence of events in the task analysis for ultrasound match those described by Low and Reed (1994) in their electrotherapy textbook. The physiotherapist's role

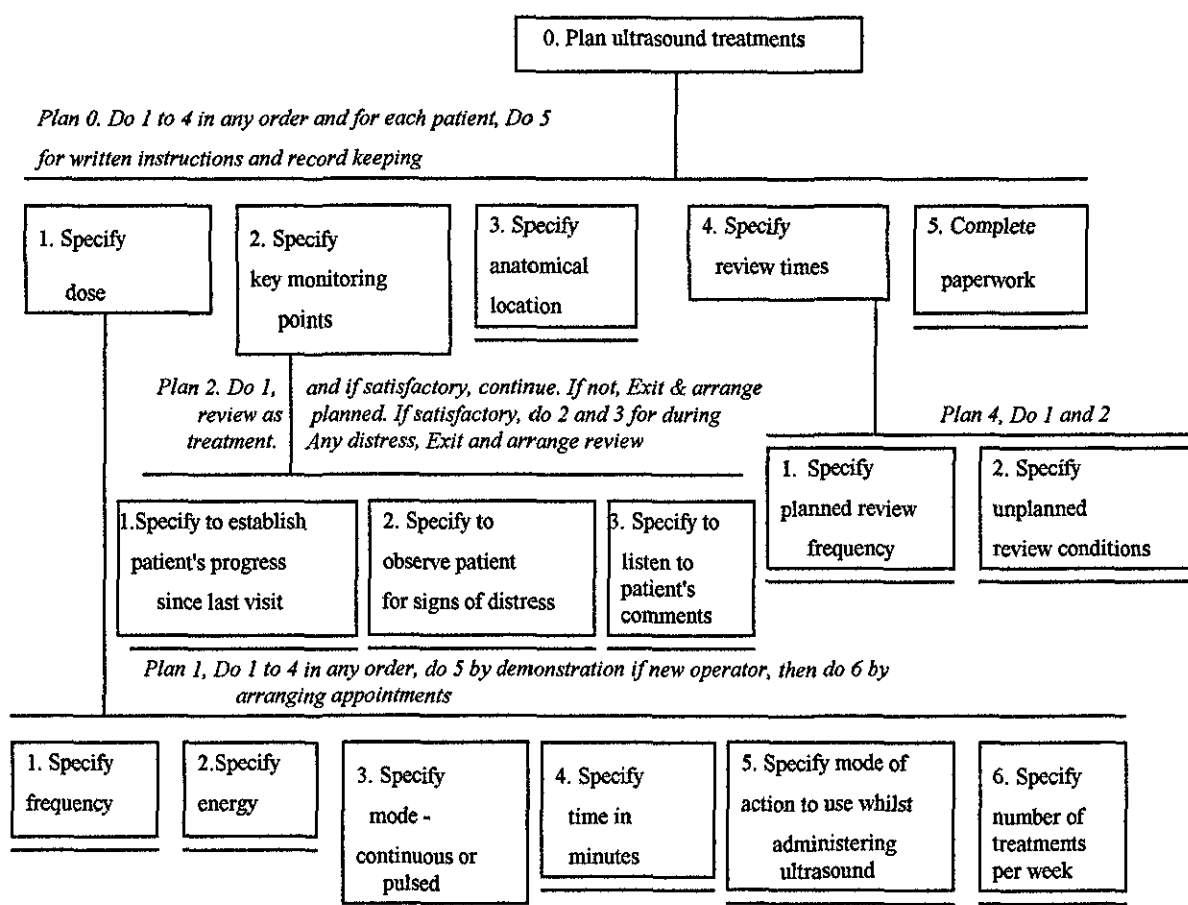


Figure 3.2 The physiotherapist's role in ultrasound treatment represented in hierarchical task analysis format.

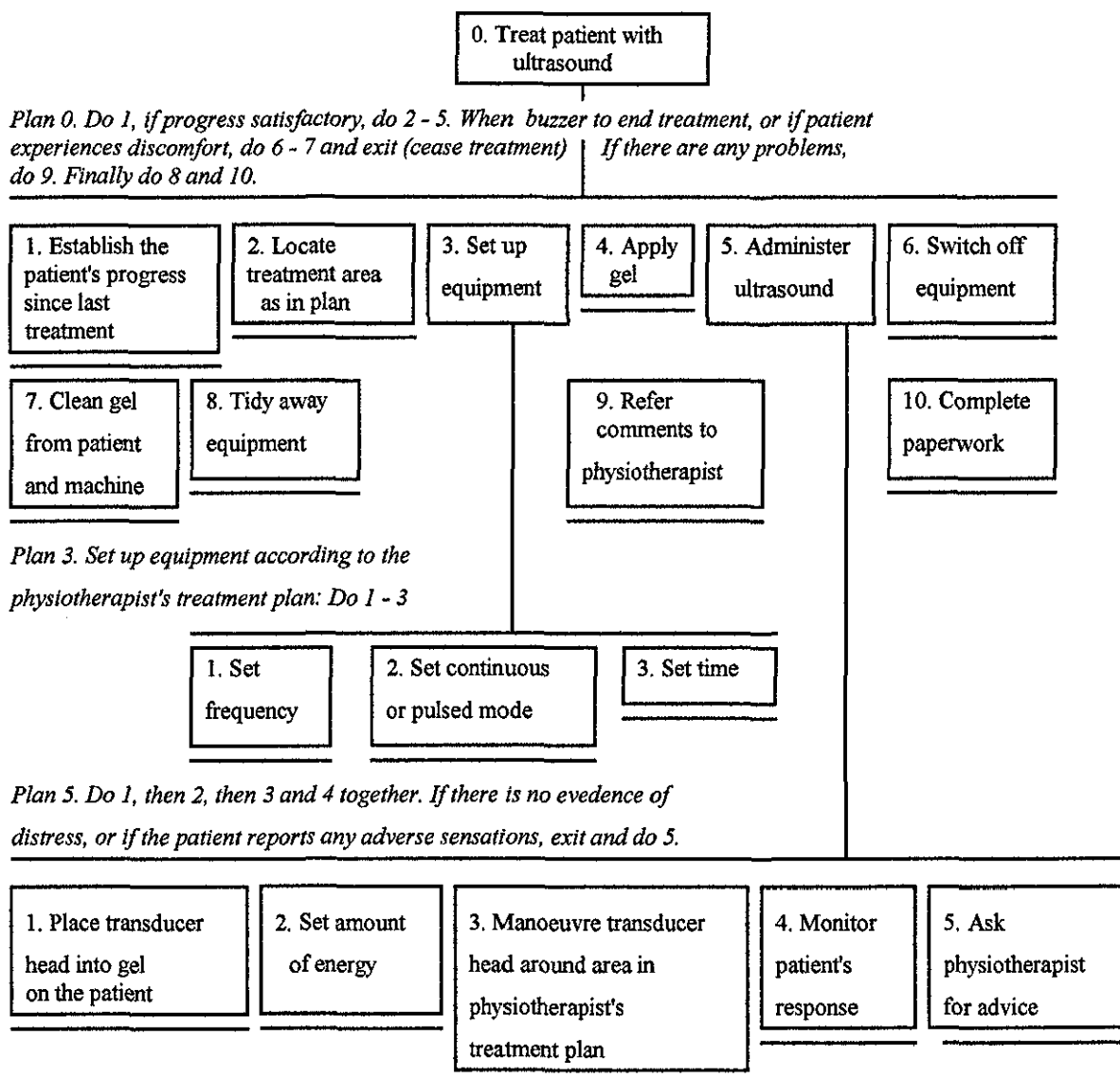


Figure 3.3 The assistant's role in ultrasound treatment represented in hierarchical task analysis format.

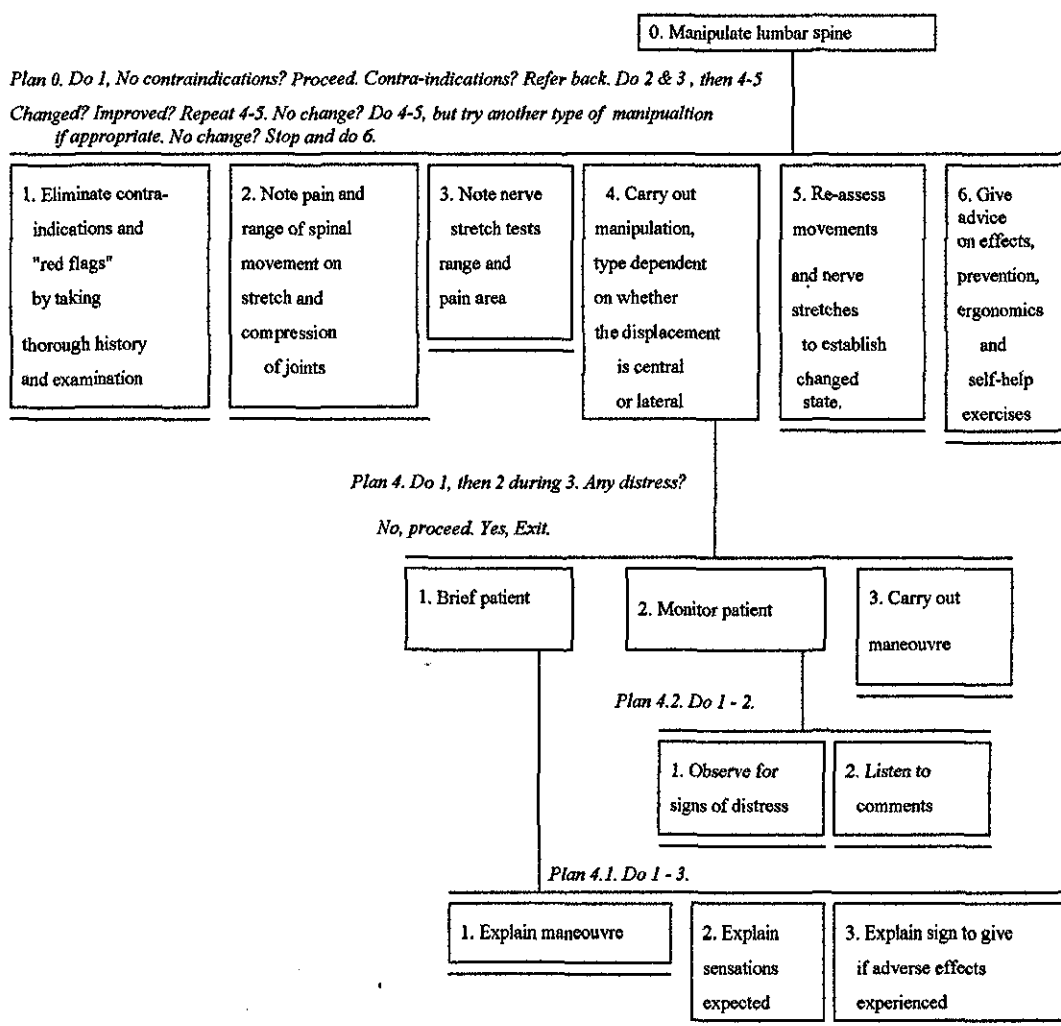


Figure 3.4 The physiotherapist's role in manipulation represented in hierarchical task analysis format.



(figure 3.4) is given as an example for the more skilled manipulation, using the same format. For manipulation, it can be seen that after each manoeuvre the patient is re-assessed. The manoeuvre also involves skilled interpretation of joint end feel to adjust force to achieve the desired effect. Thus the analysis provides information from which the skill level required for the task can be derived, and it follows that the high level skills required for manipulation render the task unsuitable for delegation to an assistant. However in the case of ultrasound there is no re-assessment immediately after treatment, the task does not involve sensory interpretation and is a set procedure, once planned, and is therefore suitable to be considered for delegation.

### **3.6 THE SOCIAL NEED FOR SKILL MIX CHANGES**

Skill mix, the subject of debate in the NHS for the last decade, involves managers in achieving a balance of professional and unqualified staff that results in the provision of a cost-effective and quality service. The NHS faces annual cost improvement programmes that result in the same service being supplied for less money. Inevitably, as year in and out services try to improve performance, there comes a time when there is nothing else to give. Yet, as we have seen argued in the literature review, professional jobs in the NHS have not been designed but have "grown like Topsy" with the professional bodies protecting the professionals and the profession. This implies that the skills actually required to carry out some of the tasks owned by professionals may be, on analysis, skills could be developed in a trained assistant. If working arrangements were such that patients had access to either assistant or professional, the service could be run at a reduced cost without loss of professional input when needed.

As the demographic changes have predicted an increasingly ageing population, there will be more demands on the rehabilitation services. It is therefore paramount that skill mix is at an appropriate level to provide an efficient and cost-beneficial service. The percentage of the working population unemployed also indicates that there will be less employed people to pay for the social and health needs of the population. It is owed to society that professionals make every effort to reduce costs whilst keeping up standards, outcomes and quality. If a system of working can be produced that will give value-for-money without loss of quality, then it follows that it should be used to allow more people to benefit from the stretched resources of the NHS.

### **3.7 VARIATION IN SKILL MIX AND TASK ALLOCATION: EXAMINATION OF THE PROBLEM.**

Although the available manpower data referred to in Chapter One found a variation across the country in the both the number physiotherapists and assistants per 100K of the population, the literature search into task delegation to physiotherapy assistants did not find any detail to cover practice in outpatient physiotherapy in this country.

For a more scientific approach to delegation, it is important to find out what tasks are being carried out by physiotherapists and assistants at present, and which tasks are being carried out frequently by physiotherapists in order to begin to analyse the tasks that are worth considering for suitability for delegation.

#### **3.7.1 Survey of tasks carried out by physiotherapists and assistants in Trent**

An investigation in to the skill mix experience in Trent Regional Health Authority where the ratio of physiotherapists to assistants was the lowest in the country was carried out.

The purpose of the study was to:

Examine skill mix.

- Establish what tasks were being carried out by physiotherapists and by assistants.
- Determine task frequency and therefore opportunity for practice.
- Determine what training assistants have had and what training physiotherapists feel assistants should have.
- Discover what attitudes physiotherapists have to using assistants for routine clinical tasks.
- Discover what attitudes managers have to increasing the role of assistants.

### **3.7.2 Method**

A total of 65 physiotherapists and 30 assistants were surveyed by questionnaire and ten physiotherapy managers were interviewed at ten sites in the Trent Region.

#### **Sample**

Five physiotherapy departments in District General Hospitals and five in Community Hospitals were selected from the Trent Handbook (Trent, 1992). The sites were chosen to include five large physiotherapy departments serving cities and five smaller departments serving small towns, and were chosen at random from hospitals in the Region listed in the handbook and represented 21% of the District General Hospitals and 24% of the Community Hospitals. Community Hospitals were defined as hospitals with General Practitioner beds.

#### **Interview Schedules**

A semi-structured interview (Appendix A1.1) was drawn up to obtain information and opinions about staffing levels, the role of the assistant in outpatient departments, ratio of physiotherapists to assistants, clerical support, work loads and training of assistants.

## **Questionnaires**

Questionnaires were designed for physiotherapists (A) and assistants (B) (Appendix A1.2 & A1.3) to identify what tasks they were carrying out and how frequently. Questionnaire A also focused on the delegation of tasks to assistants and perceived training needs of assistants and asked what physiotherapists' concerns would be if assistants carried out a treatment such as ultrasound under their supervision. Questionnaire B also investigated the extent of assistants' training, asking whether it had been formal by physiotherapists, on-the-job, for NVQs, or other. The questionnaires contained an identical list of tasks grouped into five sections: procedural, clerical, electro-therapy, manual and exercise therapy and assessment.

Respondents were given a choice of frequency at which each task was undertaken:

0 = "I don't ever do that task"

1 = "I do that task about once a month"

2 = "I do that task about once a week"

3 = "I do that task about once a day"

4 = "I do that task two to five times a day"

5 = "I do that task over 5 times a day"

## **Pilot Test**

Two questionnaires were designed and pilot tested for clarity and content on five physiotherapists and four assistants, who were asked if there were any tasks that they were carrying out that were not included. These staff were asked to complete the questionnaire for a second time six weeks later when it was considered that they would have forgotten their original responses. Many of the questions on the questionnaires for assistants and physiotherapists were the same. They were tested for reliability using the test-retest method ( $r = 0.91$ ).

## **Procedure**

The ten physiotherapy managers were invited by letter to participate in the survey and then contacted by telephone to arrange an interview in their department. The same person interviewed all managers and notes were taken of the responses. The interviews took about 40 minutes. At the end of the interviews questionnaires were left with them to distribute to all of their outpatient staff. Anonymity and confidentiality were assured in covering letters that explained the purpose of the survey and stamped envelopes were attached for return of each of the completed questionnaires. The numbers of questionnaires left at each site was recorded, to be checked against the number returned.

## **Analysis of Data**

Data from the questionnaires were put on to an Excel spreadsheet and descriptive graphs were generated. For the purpose of this study, to look at tasks that were carried out frequently by staff, tasks carried out two to five and over five times daily were described as being carried out frequently. The more detailed analysis of task frequencies was collected for a further study to make decisions on tasks suitable for delegation by using the criterion of task frequency giving opportunity for practice and therefore skill building.

Interview notes were analysed by hand per question.

The chi-squared test was used to determine significant differences between the frequency that tasks were carried out by physiotherapists and assistants, using the daily or greater frequencies compared with less than weekly frequencies. This test was used because the data were non-parametric. The degree of freedom was one. Calculations were done by pencil, paper and calculator.

### **3.7.3 Results**

#### **Interviews with Managers**

##### **Ratio of physiotherapists to assistant**

The ratio of physiotherapists to assistant ranged from 1.5:1 to 8.5:1 with a mean of 4.1:1. Six of the ten sites had in addition reception/clerical support. The district general hospitals had the highest physiotherapists:assistant ratio when compared with community hospitals (table 3.1); they also had more staff having 70% of the physiotherapists and 58% of the assistants in the study (table 3.2).

<b>Hospitals</b>	<b>(n)</b>	<b>Mean</b>	<b>(sd)</b>	<b>Range</b>
Community	5	3	(1.1)	1.5 – 4.5
District Generals	5	5.3	(2.3)	3.5 – 8.5
Total	10	8.3	(2.1)	1.5 – 8.5

Table 3.1 The physiotherapist to assistant ratio at the sites surveyed

<b>Hospitals</b>	<b>Physiotherapists</b>	<b>Assistants</b>
Community	18	12
District General	42	17
Total	60	29

Table 3.2 The skill mix at the different types of hospitals surveyed

### Waiting Lists and Waiting List Initiatives

In all ten sites there were waiting lists for first appointments ranging from 2 to 26 weeks from the doctor's referral, with a mean for the group of 7.8, standard deviation of 8.7 weeks. When asked how, given resources, they would help supply meet demand, all ten managers said they would employ more physiotherapists either as additional staff or by using existing staff to work overtime. Only one thought that, in addition to employing more physiotherapists, another assistant could be useful; this manager's physiotherapist to assistant ratio was the highest at 8.5:1.

### Roles of assistants

At nine of the ten sites assistants helped physiotherapists with patient treatments; a physiotherapist was always in the department supervising the assistant.

When specifically asked about skill mix and about enlarging the role of the assistant, four managers thought assistants could be used more, so long as physiotherapists supervised the assistants' work. Five managers felt that the assistant's role had become more of a clerical support role, due to increasing information requirements.

### Training of Assistants

All ten managers felt that learning on-the-job was the most important means of the assistant developing skills, but that this should be supplemented by education from physiotherapists. Three managers felt that the assistants should use NVQ training; seven felt that the NVQ skills were too broad to be appropriate for outpatient assistants.

## Workloads

When asked about the specific effects of using assistants under the supervision of physiotherapists to carry out routine clinical tasks, eight managers felt that outcomes to episodes of care would not change and that quality would not be lost. Nine felt that costs would be reduced and seven that throughput per physiotherapist would increase. There was concern that the physiotherapists would lose touch with their patients and that average attendances per patient could then increase. The need for physiotherapists to supervise delegated tasks was stressed by all managers, and for assistants to be tested for competence.

## **Questionnaires**

The response rate was 94% in total, with physiotherapists 92% (n = 60) and assistants 97% (n = 29).

## Characteristics of Respondents

Physiotherapists who responded held the following grades of post:

Superintendent	6	Senior 11	32
Senior 1	14	Junior	8

Physiotherapists' experience in outpatients ranged from less than one year to 31 years, assistants' experience from under one year to 28 years (table 3.3). 39% of physiotherapists had one year's experience or less in the speciality compared with 41% of assistants; 17% of physiotherapists and 52% of assistants worked part time. Of the physiotherapists, 23% did not delegate clinical tasks to assistants.



Staff	Mean	(sd)	Range
Physiotherapists (n = 60)	5.37	(6.65)	1 - 31
Assistants (n = 29)	7.71	(7.67)	1 - 28

Table 3.3 The length of experience (yrs) in outpatients of the staff surveyed

### Assistants' Training

93% of assistants responded that training had been on-the-job, 76% also had formal lectures from physiotherapists, and one assistant had NVQ training to level 2.

75% of physiotherapists felt that training should be on-the-job. 13% thought NVQs should be used. 3% felt that physiotherapy educational institutes should give training.

### Tasks

#### *Procedural and Clerical Tasks*

Both physiotherapists and assistants carried out this type of task (table 3.4). Over 90% of the assistants carried out procedural tasks more than five times a day. Physiotherapists were escorting patients from waiting areas and preparing patients as frequently as assistants (figure 3.5). Assistants were more likely to tidy up, answer the telephone and deal with referrals.

#### *Electro-therapy Tasks*

All electro-therapy tasks were carried out frequently by 20% of the assistants (figure 3.6). Assistants were more likely to carry out the simple electro-therapy tasks, such as ice, hot

packs and wax (table 3.5). Physiotherapists most commonly carried out ultrasound and pulsed short wave diathermy (SWD), followed by interferential and ice.

### *Exercise and Manual Therapy Tasks*

Assistants were most involved in monitoring exercises, with 38% progressing exercises frequently (figure 3.7). Suspension therapy was carried out by 50% of assistants, 25% frequently. 20% of assistants also applied neck and back traction frequently, but few assistants carried out mobilisations (table 3.4 and 3.5).

Tasks	Staff	Never do task	Less than weekly	Less than 5 times a day	More than 5 times daily	P value
Tidy up	P	8	15	65	12	NS
	A	0	0	45	55	
Escort patients	P	0	7	40	53	NS
	A	7	0	34	59	
Prepare patients	P	3	5	39	54	NS
	A	6	4	38	52	
Monitor exercises	P	2	3	40	55	NS
	A	17	10	48	25	
Suspension therapy	P	23	57	8	12	NS
	A	48	21	21	10	
Cervical traction	P	3	47	45	5	NS
	A	73	3	24	0	

Table 3.4 The comparison of task frequencies for physiotherapists (P) and assistants (A) where no significant difference (NS) was found

Tasks	Staff	Never do task	Less than weekly	Under 5 times a day	Over 5 times a day	Chi- squared value	P value
Interferential	P	8	42	45	5	4.32	< 0.05
	A	79	7	7	7		
Laser	P	50	20	28	2	4.7	< 0.05
	A	76	4	14	6		
Ultrasound	P	3	13	68	16	28.85	< 0.01
	A	76	0	17	7		
Pulsed shortwave	P	8	22	58	12	13.04	< 0.01
	A	69	4	21	7		
Wax	P	50	42	8	0	19.1	< 0.01
	A	17	31	48	4		
Ice	P	23	38	35	4	5.8	< 0.05
	A	14	17	55	14		
Hot packs	P	30	37	30	3	12.9	< 0.01
	A	10	14	62	14		
Progress exercises	P	0	2	38	60	13.2	< 0.01
	A	62	3	24	11		
Lumbar traction	P	3	42	50	5	10.3	< 0.01
	A	79	3	18	0		
Mobilisation	P	0	0	35	65	46.75	< 0.01
	A	97	0	3	0		
Take History	P	0	0	2	98	46.75	< 0.01
	A	80	10	10	0		
Plan treatment	P	0	0	13	87	46.75	< 0.01
	A	90	3	7	0		

Table 3.5 Comparison of the task frequencies for physiotherapists (P) and assistants (A), where a significant difference was found

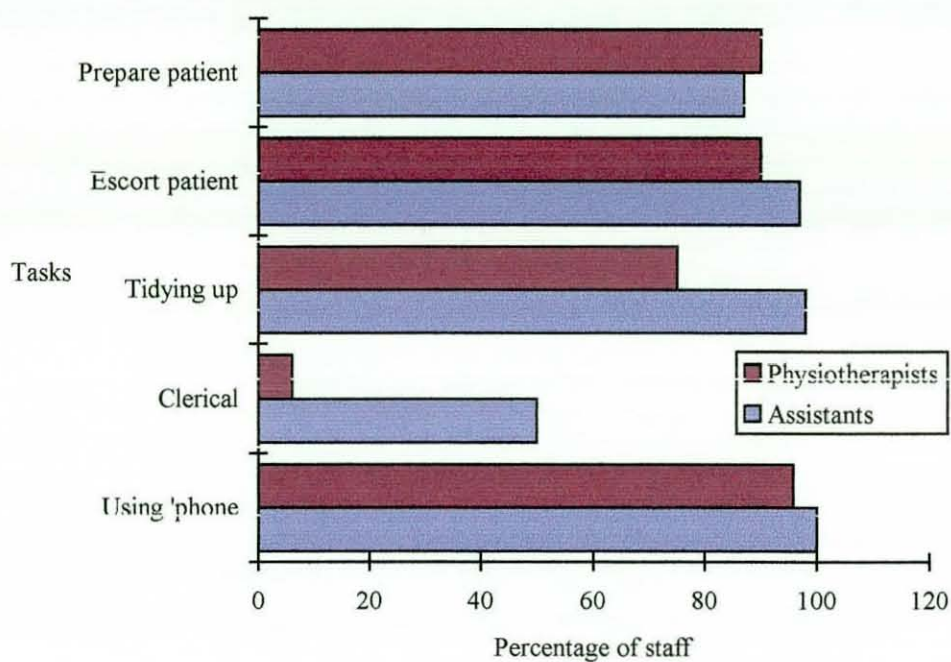


Figure 3.5. Comparison of the percentage of physiotherapists with the percentage of assistants carrying out procedural and clerical tasks frequently

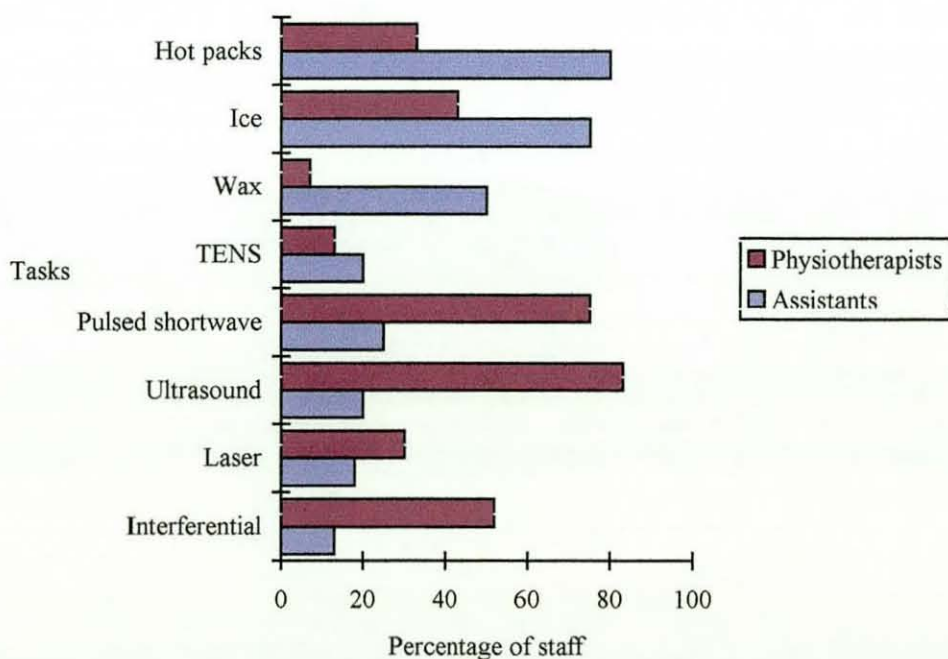


Figure 3.6. Comparison of the percentage of physiotherapists with the percentage of assistants carrying out electrotherapy tasks frequently

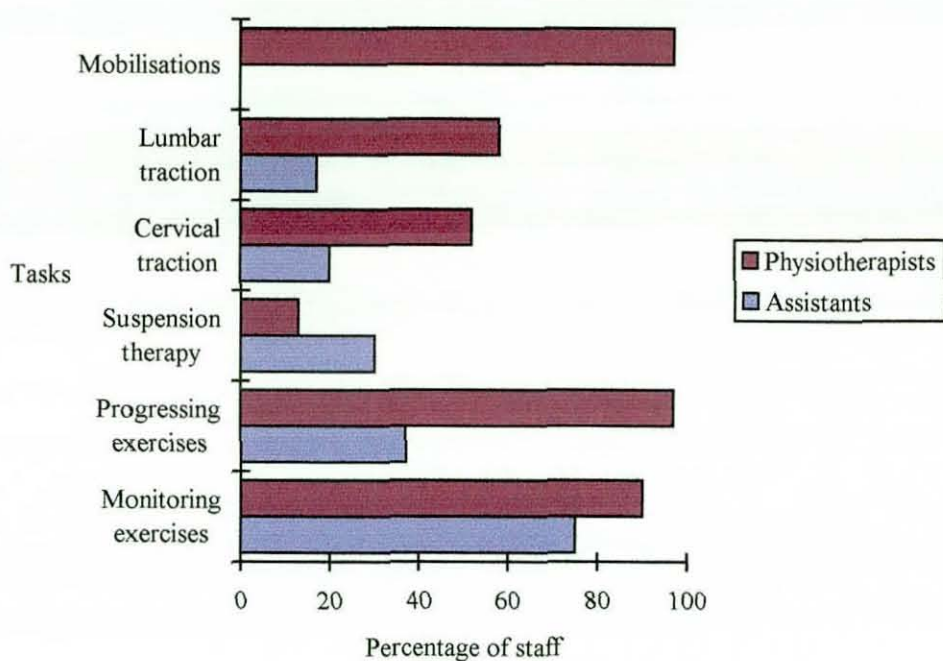


Figure 3.7. Comparison of the percentage of physiotherapists with the percentage of assistants carrying out manual and exercise therapy tasks frequently

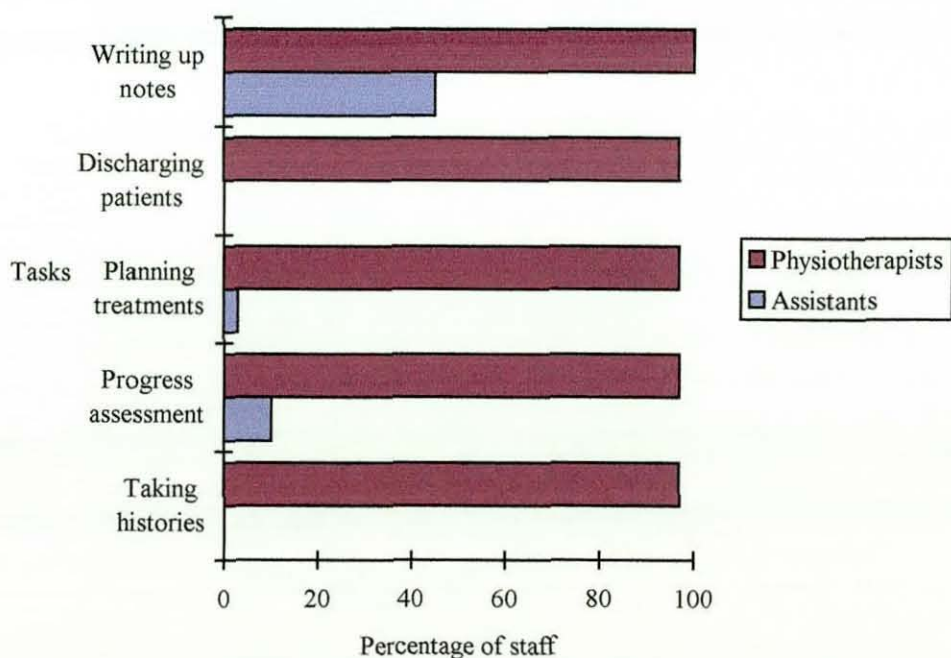


Figure 3.8. Comparison of the percentage of physiotherapists with the percentage of assistants carrying out patient assessment, planning and administration tasks frequently

Almost all physiotherapists carried out mobilisations frequently in this group of tasks. Monitoring and progressing exercises were carried out frequently by over 90% of physiotherapists. About 50% used neck and back traction frequently.

### *Assessment Tasks*

A few assistants (4%) took patients' histories (table 3.5). 10% carried out progress assessments and 7% planned treatments regularly. All physiotherapists took histories, carried out progress assessments, planned treatments and discharged patients frequently (figure 3.8).

### Clinical Tasks Carried Out by Assistants

Assistants were being used to carry out clinical tasks at nine of the sites, but the amount of these tasks varied from site to site. At two sites assistants carried out all electro-therapy tasks and traction (table 3.6).

### Attitudes of Physiotherapists to Using Assistants to Treat Patients

82% of physiotherapists said they would be concerned (table 3.7) about assistants carrying out ultrasound, 9% were not concerned and 9% did not respond to this question.

<b>Task</b>	<b>Assistants (n = 29)</b>	<b>Sites (n = 10)</b>
Wax	27	9
Hot packs	26	9
Ice	25	9
Monitoring exercises	23	9
Suspension therapy	15	5
Progressing exercises	12	3
TENS	11	3
Pulsed SWD	9	3
Ultrasound	7	2
Laser	7	2
Interferential	6	2
Cervical traction	6	3
Lumbar traction	6	2

Table 3.6. Numbers of assistants carrying out clinical tasks and the number of sites where they did so

Concerns	Physiotherapists (n = 60)
Assessment	11
Dangers	8
Localisation	7
Legalities	6
Professional erosion	6
Reduced advice	3
Loss of quality	3
Unhappy to allow it	2
Training	2

Table 3.7. Concerns expressed by physiotherapists regarding assistants carrying out supervised ultrasound treatments



### **3.7.4 Discussion**

#### **Skill Mix**

The debate on skill mix is not new. In 1970 in an article on supportive personnel and supervisory relationships Holmes wrote:

*"To gain an understanding and consequent acceptance of the physical therapy assistant, all of physical therapy must be studied - not the assistant alone or the therapist alone."*

Holmes went on to recommend that assistants carried out the routine clinical tasks, with physiotherapists evaluating, making decisions and supervising delegated care. She argued that the effective use of assistants would improve patient care and make physiotherapy available to all that needed it.

Watts wrote in 1971 of the unwelcome pressures on therapists to change a familiar and satisfying style of work, to relinquish tasks regarded as important and to assume new responsibilities for other workers and went on to attempt to divide tasks between therapists, assistants and aides.

Despite these papers written more than two decades ago, there is still no acceptable system, as this survey shows, for allocating tasks between physiotherapist and assistant in this country. Wide variation was found in skill mix between the outpatient research sites; the physiotherapist to assistant ratio varied between 1.5 to 8.5 to 1. The clinical tasks carried out by assistants varied between sites, the assistant from the 8.5:1 site not carrying out any clinical tasks. This begs the question, what should the physiotherapist to assistant ratio be? Should each physiotherapist be able to supervise two to four support workers in close proximity, as a joint Canadian physiotherapy and occupational therapy working party recommended (Brockett, 1993)? Should the ratio be dependent on site, be

it nursing home or hospital setting, as discussed by Schunk (Schunk et al, 1992)? The answer surely depends on what tasks an assistant can carry out under supervision.

### **Task Allocation**

There was a wide variation in the tasks being carried out by assistants in the study, ranging from no clinical tasks at one site to all technical electro-therapy tasks at another. Murray (1988) reported that assistants were used to help provide a service and compensate for a desperate shortage of physiotherapists by undertaking specific in-service training to enable them to treat common conditions. Schofield (1992) found that assistants became competent through experience and repetition, and by informal training on-the-job when physiotherapists were in short supply and assistants were used to fill the supply and demand gap. Training, opportunity to practice and experience have thus produced the skills in assistants to assist physiotherapists to treat more patients. From this study in Trent, tasks that are carried out frequently can be identified as tasks that provide opportunities for skill-building in those who practise them regularly; but still the question remains, which tasks can be delegated to the assistant? Perry (1966) pointed out that delegation of planned rehabilitation programmes that include the application of therapeutic machines does not relieve physiotherapists of the responsibility to judge patients' responses and adapt treatment, and emphasises that delegation is sharing. Perhaps the answer lies in the development of a close working relationship between physiotherapist and assistants, the assistants becoming an extra pair of hands for the physiotherapists.

Physiotherapists were frequently carrying out tasks that were procedural non-clinical tasks, such as escorting the patient in from waiting areas observed to be, at some sites, well outside the treatment area. These tasks could be carried out by assistants, or the use of space in treatment areas could be studied to introduce sub-waiting positions and allocate treatment areas to groups of staff, in order to reduce walking between

treatments, waiting areas and telephones. It may be that the increased information requirements in recent years have changed the assistants' role to reduce the clinical input in favour of clerical work. Managers in the survey voiced this as a problem.

The study provided information on the tasks that physiotherapists were carrying out frequently. Of the 14 treatment tasks, 3 were already carried out frequently by the assistants. Of the 11 remaining treatment tasks, 9 were carried out frequently by physiotherapists. The treatment tasks could be analysed for their suitability for delegation to assistants.

## **Training**

Training for assistants studied in Trent had been carried out largely on-the-job supported by some formal training by physiotherapists. Only one assistant had undertaken training to NVQ level 2. The majority of physiotherapists and managers favoured on-the-job and in-service training and it seems this approach had adequately provided the assistants with the skills to help the physiotherapists with a wide variety of tasks. The breadth of skills acquired by NVQ training were felt by the majority of physiotherapists and managers to be inappropriate for outpatient physiotherapy assistants. Many of the skills learned on NVQ courses would not be used in outpatients, such as nursing, occupational and speech therapy tasks. The electro-therapy skills included in NVQ level 3 training were already being carried out at nine of ten of the sites in Trent. This, as Green (1991) suggests is a strong case for enhancing specific skills of less qualified workers who can become more specialised in a limited area.

As in-house training is being used to extend the skills of professionals in the NHS (Dimond, 1990, Hockin and Bannister, 1994), if the professional role is extended, should the profession not consider the training and monitoring implications of extending the role

of the assistant? The question may be: Are the investments in training worth the benefits to the service?

### **Attitudes of Professional Staff and Managers to Delegation**

Physiotherapists in this study were concerned about delegating the application of ultrasound to assistants working under their supervision. The greater concerns were expressed by physiotherapists working in sites with a high proportion of physiotherapists to assistants. Managers were concerned that the increased use of assistants could lead to lack of assessment and longer episodes of care. This was found to be the case by Williams (1991) who found that junior staff without adequate supervision had, on average a 25% increase in number of contacts per case. However, this concern would be invalid when senior physiotherapists use assistants, as junior physiotherapists are qualified to treat patients independently, but assistants carry out treatments as instructed by the physiotherapist who retains responsibility for the patient's care.

In research analysing the relationship between occupational therapists and their assistants, Green (1991) found that occupational therapists appeared to be pre-occupied by their professional status and the pursuit of knowledge and qualifications, yet gave little recognition to the possibility that assistants could gain knowledge through experience. The assistants, nearly 50% of the workforce, were said to be "invisible" workers, whose potential was not being fully tapped by the therapists who were reluctant to pass on knowledge or use the assistants effectively. This professional protectionism may bar the delegation of tasks to assistants in the absence of a structured approach to task delegation. Many repetitive tasks in physiotherapy may be skill-and rule-based, requiring little knowledge to carry out once the decision to treat has been made. If these tasks were delegated to assistants close communication between physiotherapists and assistant could ensure that knowledge is available to make necessary modifications as

required. A structured approach to task delegation would need to address the communication network between physiotherapist and assistants.

### **3.7.5 Observations and Recommendations**

There is a wide variation in skill mix and in the delegation of tasks to assistants within Trent. Where there has been an investment in on-the-job training, assistants are carrying out clinical tasks delegated to them by physiotherapists. Physiotherapists were more likely to express concern about assistants applying ultrasound under supervision in sites where the physiotherapist to assistant ratio was high and where assistants mainly carried out procedural and clerical tasks.

A systematic analysis of physiotherapy tasks is called for, with criteria established for the allocation of tasks to either physiotherapists or assistants, with training and monitoring implications considered and communication networks planned, to allow for the safe delegation of tasks. Cost-benefit of training and allocation of tasks should be an integral part of the analysis. As the managers pointed out, assistants could be used to reduced costs without loss of quality. Their concerns that physiotherapists may lose touch with the patients they are responsible for would need to be addressed by setting up delegation in such a way that communication between physiotherapists and assistants prevented this from happening.

## **3.8 THE ISSUES AND PROBLEMS INVOLVED IN DELEGATION**

### **3.8.1 Responsibilities**

When delegating the responsibility for carrying out the task is given to the assistant, but the accountability remains with the delegator. Delegation can thus be seen as a risk.

In the context of patient care, the therapist may delegate a clinical task to an assistant, but retain the responsibility for striving for a beneficial result or outcome. Thus the delegation is partial, as far as the whole patient intervention is concerned. This may result in the therapist experiencing fear of loss of authority and control over patient care when considering delegating clinical tasks to the assistant.

### **3.8.2 Concerns**

Professionals may be reluctant to delegate in order to protect their work. They may fear loss of work if they give up part of their work to assistants. This may also make therapists reluctant to delegate to assistants but it does not justify lack of delegation.

Delegation in clinical practice must be dynamic, as even if a task is suitable for delegation there may be other reasons for not delegating, such as an unstable condition, or an anxious patient. Although the final decision on delegation must remain with the physiotherapist, it is important that delegation is managed, to overcome the reluctance to delegate for reasons of professional protectionism. The staffing mix must have available both the therapist and the assistant to support each other.

Therapists may fear that there are legal reasons for not delegating to assistants. Yet employers accept vicarious liability for any mishaps by their employees. The Chartered Society of Physiotherapy states that the physiotherapist is responsible for the assistant's mistake if the instructions were the cause of the error, however if the instructions were not followed properly by the assistant who acted independently and made the error, then the assistant is responsible. There have been very few cases of negligence involving assistants.

### **3.8.3 Addressing the concerns**

In order to address the concerns of the profession, it is important that delegation is set up systematically. This involves looking at the tasks and at the people. Task analysis and skill analysis help to match the two. Assessing the cost-benefit of delegating a task is vital to ensure that any investment in training and supervision pays off once the assistant carries out the task.

Working arrangements can help to facilitate delegation. Working in close proximity and in partnership will make communication easier. Formal communication rules will also address the concerns of loss of control of patient care by using triggers to initiate involvement of the physiotherapist.

Training the assistant to carry out tasks considered suitable for delegation should aim to prepare the assistant purely to carry out the task. It should be practical and not involve in-depth knowledge, as the physiotherapist is available as the knowledge source. However the assistant must also be trained to communicate with the patient and with the physiotherapist. Localising the area to treat was voiced as a concern by physiotherapists and should be included in the assistants' training for the localisation of all common conditions encountered. This initial training should be followed by on-the-job training.

## **3.9 CONCLUSIONS**

Issues surrounding delegation in physiotherapy are complex. The tasks being carried out cannot be viewed in isolation, but must be applied as part of patient care. Although each patient is indeed unique, conditions encountered in physiotherapy are often common and it can be deduced that for most patients the treatments for these common conditions can be considered for delegation. The solution to problems in delegation must be systematic

and rational. In order for physiotherapists to delegate clinical tasks structures must exist for them to feel sure that they remain in control of their patient's care. Consideration of communications, partnership and the designed working environment are necessary to practically set up delegation. Decisions on tasks to delegate must be carried out after systematic analysis of the tasks with cost-benefit considered, to justify delegating clinical tasks and to ensure value-for-money against a professional reluctance to delegate.

The survey of outpatient physiotherapy found a variation in tasks being delegated to assistants, with many concerns expressed about assistants helping to treat patients, even where delegation was being practised. A rigorous system of delegation is called for to address these concerns so that assistants can carry out clinical tasks safely. For this to happen delegation needs to be constructed so that procedures are in place to analyse training needs and working procedures, and to examine the benefits of giving assistants the authority to carry out parts of tasks in partnership with physiotherapists.



## **CHAPTER FOUR**

### **DEVELOPMENT OF A STRATEGY TO INVESTIGATE DELEGATION IN PHYSIOTHERAPY**

#### **SUMMARY**

This chapter considers the factors that are necessary to construct delegation, based on evidence from the literature. Methods required to systematically set up delegation are discussed and a rational model is designed to encapsulate all of the factors that need to be considered to both set up a cost-beneficial service and sustain a system of delegation that is safe and that will provide a service of quality. The model of constructive delegation (CD model) is presented in tabular and diagrammatic form as a tool that will both investigate and implement delegation in physiotherapy.

#### **4.1 INTRODUCTION**

The inconsistencies Stock and Seccombe (1992b) found in physiotherapy staffing levels in England were later described by them as "unscientific, haphazard and inequitable". They stated that the management of physiotherapy staffing was based on budgets, rather than workloads, notions of which were found to be vague and historically based. Yet

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The material in this chapter is published in the paper:

Saunders L (1996) "Managing delegation to physiotherapy assistants - Application of a functional analysis model" *Physiotherapy*, **82**, 4, 246 - 252

more fundamentally the reporters found a lack of knowledge, understanding and agreement about the appropriateness and amount of treatment for given conditions and they called for a review of activities and tasks specifically to allow determination of which grade of staff is appropriate to carry out which intervention and activity. This was a call from a major independent report into physiotherapy staffing for a systematic and rational approach to skill mix and therefore for delegation to be reviewed.

A step by step procedural guide to the factors required to manage delegation in the outpatient physiotherapy services is introduced and discussed. A framework emerges that rationally explores the factors that would be required in a system where delegation was operating satisfactorily. The functional model of delegation, by systematically offering the factors required for delegation, builds up delegation and therefore is referred to as a model of *constructive delegation* (CD model). The framework will enable the extent to which delegation is organised to be examined, as the factors it encompasses would, it is reasoned, be expected to be in place for delegation to be practised. It additionally establishes a framework for design by which change in practice can be organised systematically and coherently. The main components of the CD model are shown in diagrammatic form (figure 4.1).

## **4.2 THE ESTABLISHMENT AND JUSTIFICATION OF THE CD MODEL**

### **4.2.1 The Implication and uses of the CD model**

The CD model is presented, using the Hierarchical Task Analysis format in diagrammatic (figure 4.2) and tabular form (appendix A2.1). Hierarchical Task Analysis is used to systematically address all the factors involved in setting up and operating in a system of delegation. The diagrammatic form allows the relationship between task

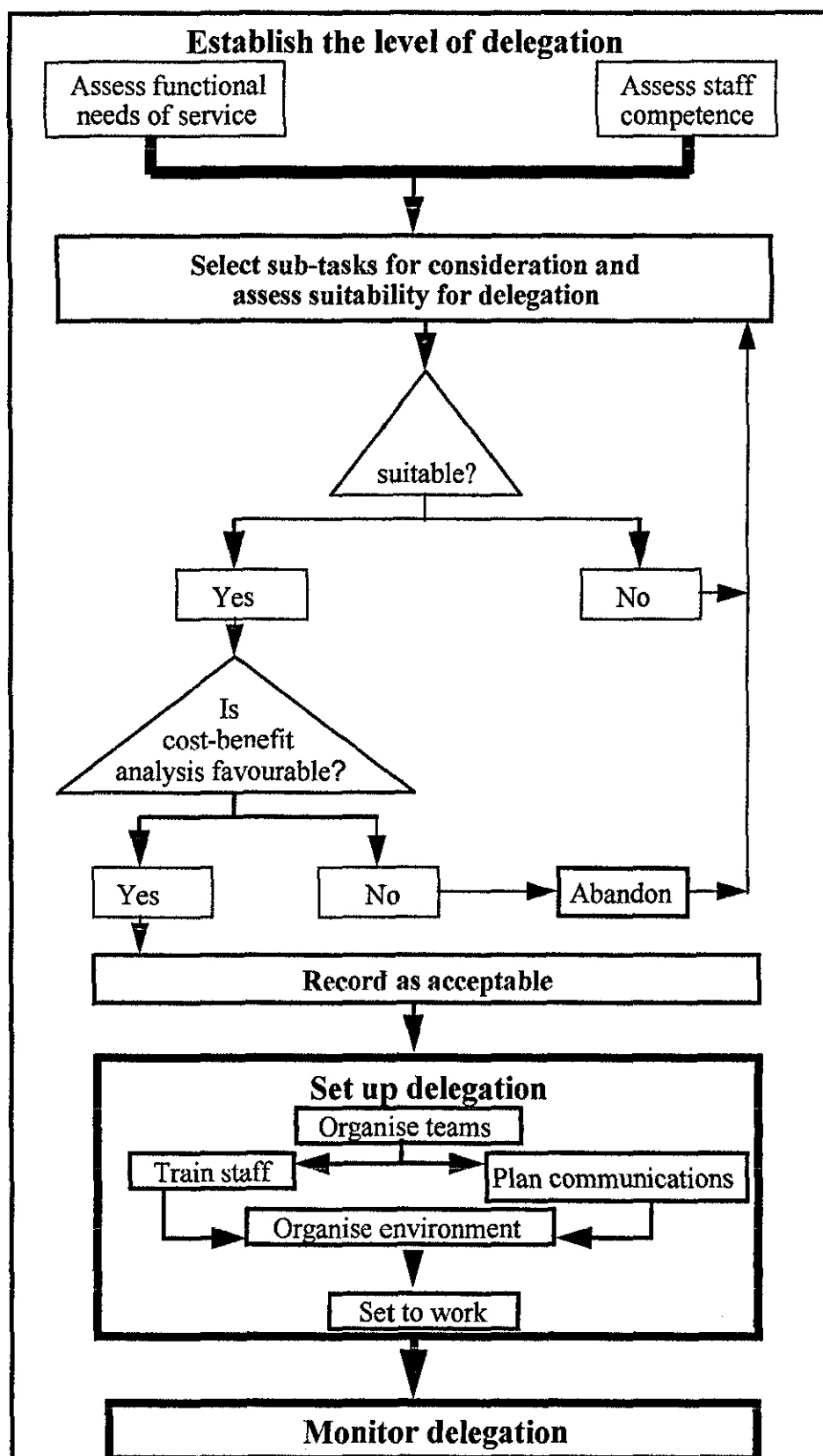


Figure 4.1 The functional CD model

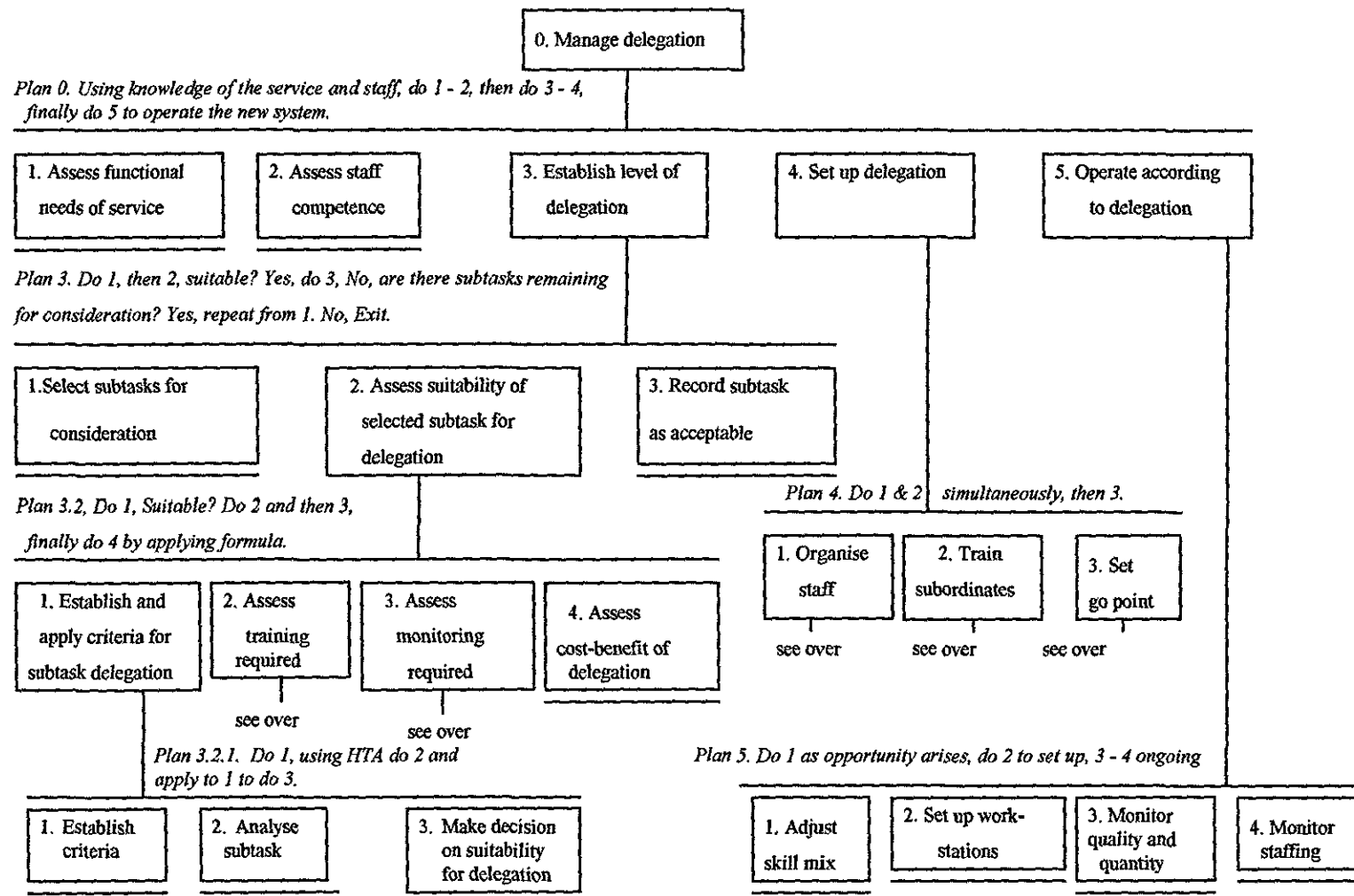


Figure 4.2 The CD model presented in diagrammatic form using the Hierarchical Task Analysis format

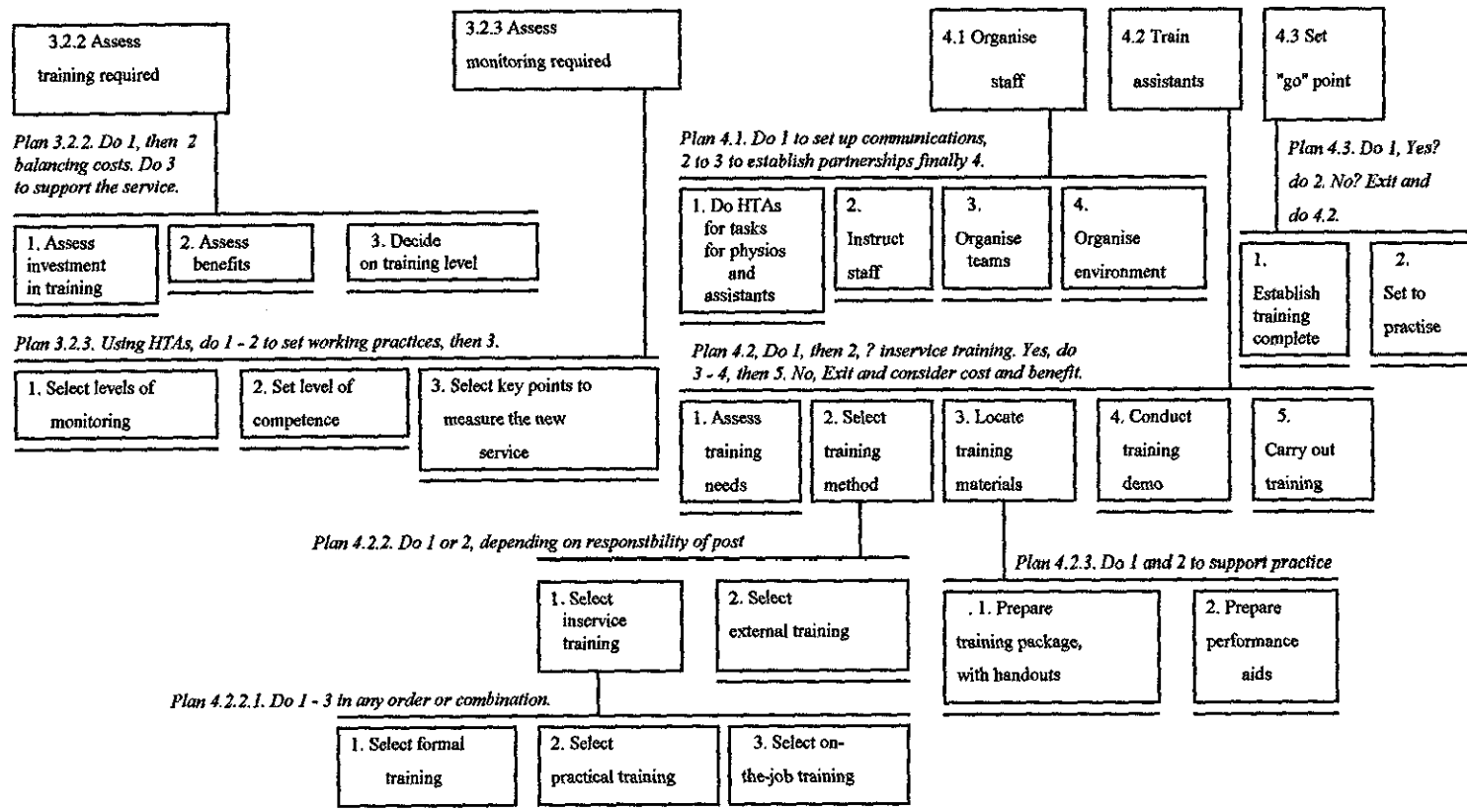


Figure 4.2 continued.

elements to be seen, showing sequential events and the consideration given at each stage to the factors involved in organising delegation. The tabular form of the CD model offers the user the ability to make notes against each of the operations in the plan and therefore to use the model dynamically in planning or analysis of systems. Thus delegation is constructed through application of the model, as without this approach people are likely to carry on working in the fashion they have been accustomed to, which often is the approach that is the easiest to get the task done now; that is to do it ones self. By formalising delegation, it should be possible for managers to use the CD model to manage delegation, and to build systems of work using the CD model as a framework.

As well as being used as a tool to implement delegation, the CD model could be used to analyse the extent to which delegation is taking place in systems. It will thus, by analysing current practice, help to identify factors that are missing in the system to help managers to make the necessary adjustments to their service to aim to improve the efficiency of the service and its value-for-money.

The CD model consists of four elements; the initial assessment of skills and functions; the establishment of the level of delegation considering task analysis and cost-benefit analysis; the setting up of the new level of delegation with the training implications and working arrangements; finally the operating and monitoring of the new system.

#### **4.2.2 Analysis of the present system**

##### **Assessing tasks in the system**

The CD model suggests that the system of working be analysed functionally to see what is required to be done irrespective of grade of staff member carrying out the task. As described in Chapter 3, the application of Hierarchical Task Analysis (HTA) techniques allows an in-depth analysis of the service from referral to discharge. It provides information on tasks, including procedures, communication required, and breaks the whole task into subtasks. This is necessary if tasks or subtasks are to be considered for delegation, so that the skills of the staff can match the requirements of the tasks in the context of the system.

People already working in a service will have an understanding of what is required to be done to fulfil the objectives of the service. However, they may be used to working in the present system and blind to the possibilities of re-allocation of tasks, or they may have a vested interest in not delegating tasks that are in fact suitable for delegation. If the system is analysed independently of who carries out the tasks, judgements on allocation of tasks can be made from consideration of the skills required to carry out the task instead of on custom and practice. Thus in a system such as physiotherapy decisions can be made systematically on task delegation between the physiotherapist and the assistant.

##### **Assessment of staff competence**

The skills of the staff working in the present service need to be assessed to see what level they are working at present. This can be done by interviewing the staff to find out what tasks they are carrying out. The tasks delegated by therapists to assistant can be assessed similarly by interviewing the therapist.

Assistants can be given a diary chart to assess the clinical tasks that they are carrying out and the task frequency. Similarly the tasks carried out by physiotherapists can be assessed to see the potential for delegation, by calculating task frequency and time involved in each task.

*From this information training needs can be analysed for tasks that are found on analysis to be suitable for delegation.*

#### **4.2.3 The establishment of the level of delegation**

Subtasks should be systematically analysed for their suitability for delegation based on the task analysis carried out already. This means that the communication required between physiotherapist and assistant is set up to allow delegation of tasks, in other words a subtask is not carried out in isolation of the planner and evaluator.

#### **Examination of the subtasks for delegation**

Using the information gained from the functional analysis of tasks, subtasks can be considered for delegation by applying criteria (figure 4.3). Once tasks have been analysed as suitable they should be further analysed to see if they are cost-beneficial for delegation, for which a simple formula can be applied to assist decision-making (figure 4.4).

Criteria for consideration for suitability for delegation will need to consider the condition being treated and the task being carried out. Knowledge required to plan a task may not be needed at the same level to actually carry the task out, and if the procedure for doing the treatment is easy to learn and produces no immediate effects and therefore does not



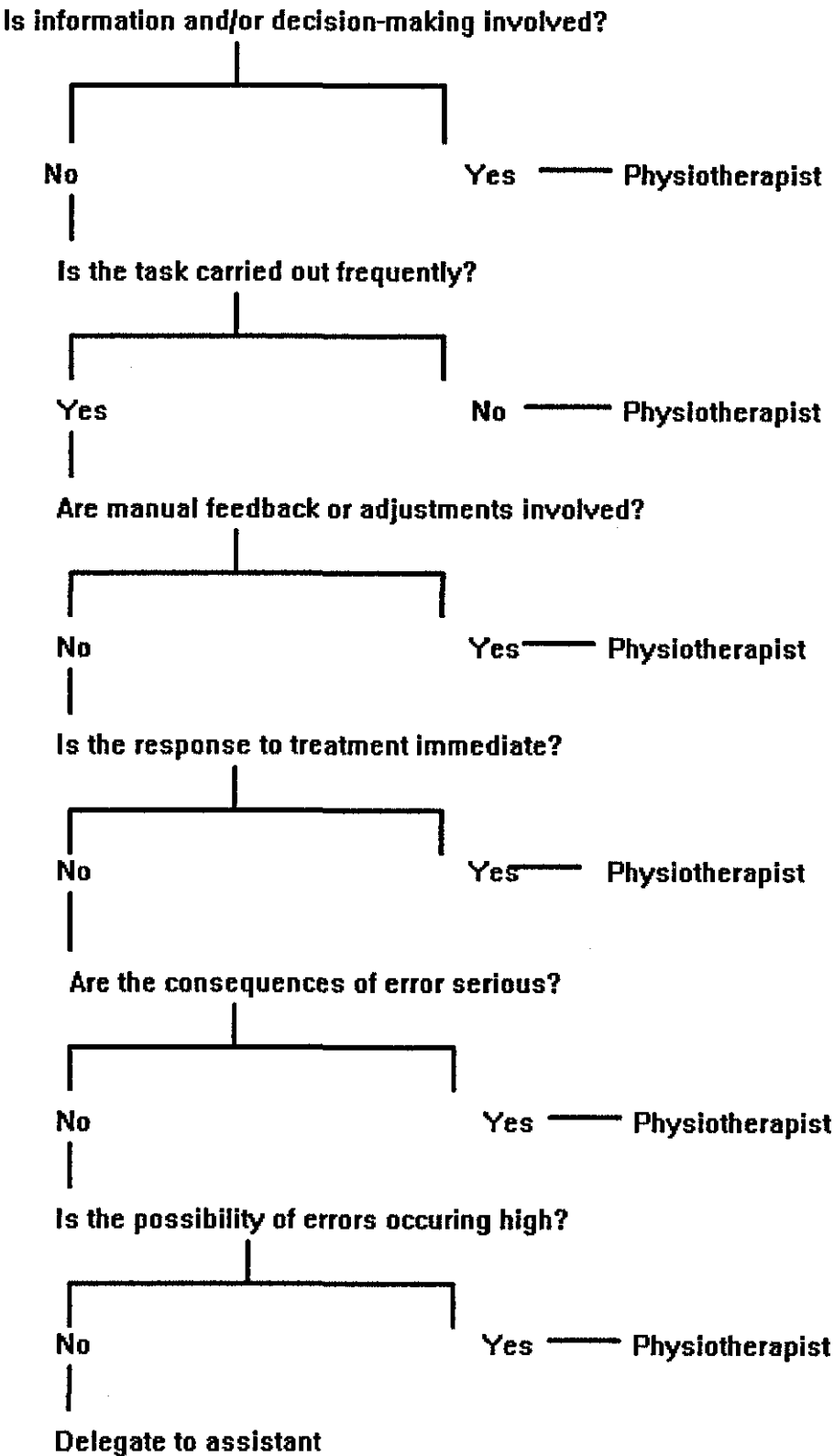


Figure 4.3 A decision tree using criteria to assess the suitability of tasks for delegation

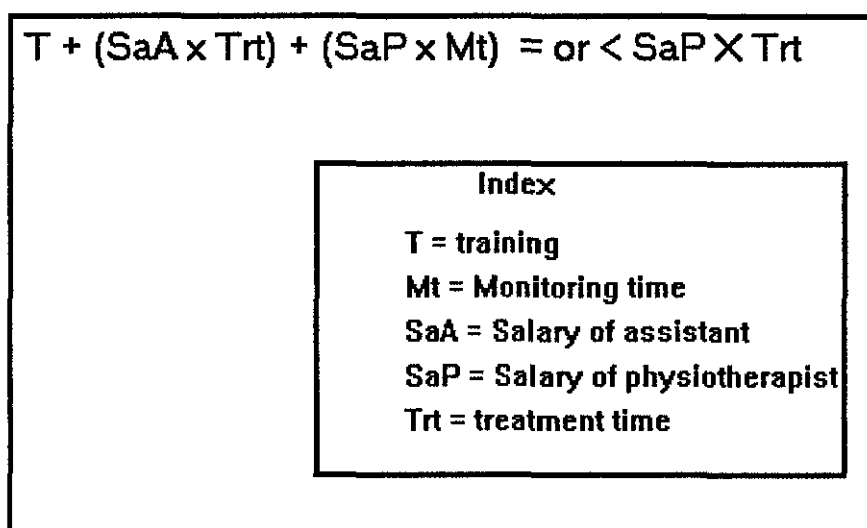


Figure 4.4 The formula for assessing cost-benefit analysis

necessitate re-assessment, the task is rendered suitable for delegation. Other considerations will be opportunity for practice and therefore skill-building; tasks that are carried out frequently being more suitable than those carried out infrequently. Whether there is a manual component to the task, requiring skill in detecting underlying pathologies based on knowledge of conditions and experience, is a further consideration that separates task allocation between physiotherapist and assistant. There is also the consideration of scale of damage that could be caused if an error is made, so the seriousness of the consequences of error and the risk of error occurring are assessed through criteria.

Cost-benefit applied to tasks considered suitable for delegation is used to confirm the reasonableness of task delegation to assistants. Considerations here are training costs, monitoring costs and the cost of the salary of the assistant carrying out the task compared with the salary of the physiotherapist. Low investment in training soon becomes cost-beneficial (figure 4.5), high investment (figure 4.6) takes longer to pay off and may not

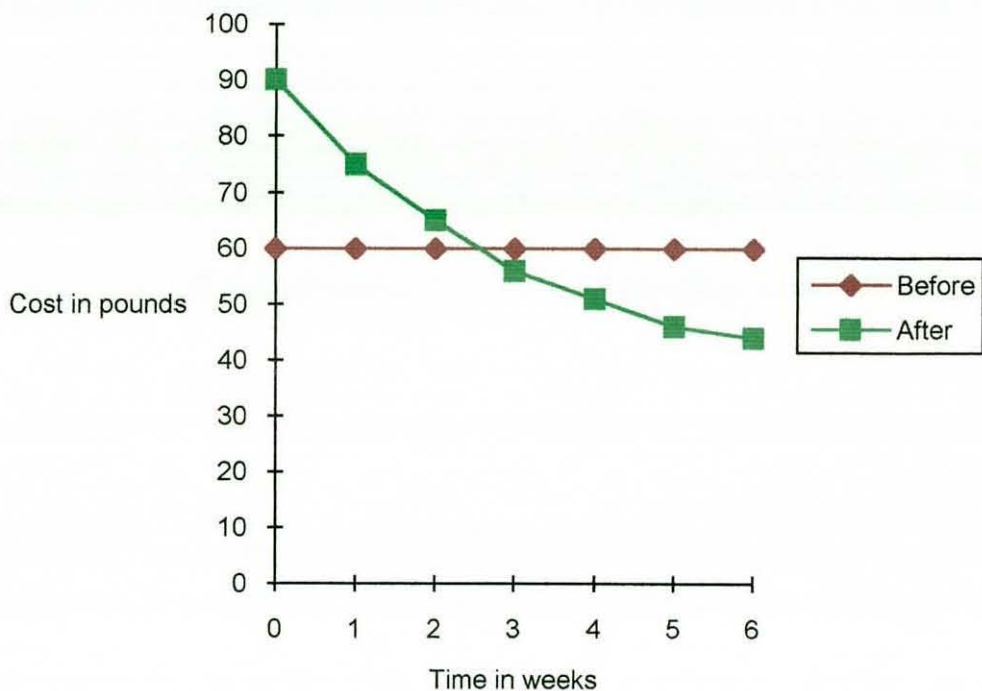


Figure 4.5: Cost-benefit analysis of task delegation. Before = cost of physiotherapist carrying out the task for five hours per week, after = cost of assistant carrying out the task for five hours + cost of training + declining monitoring costs.

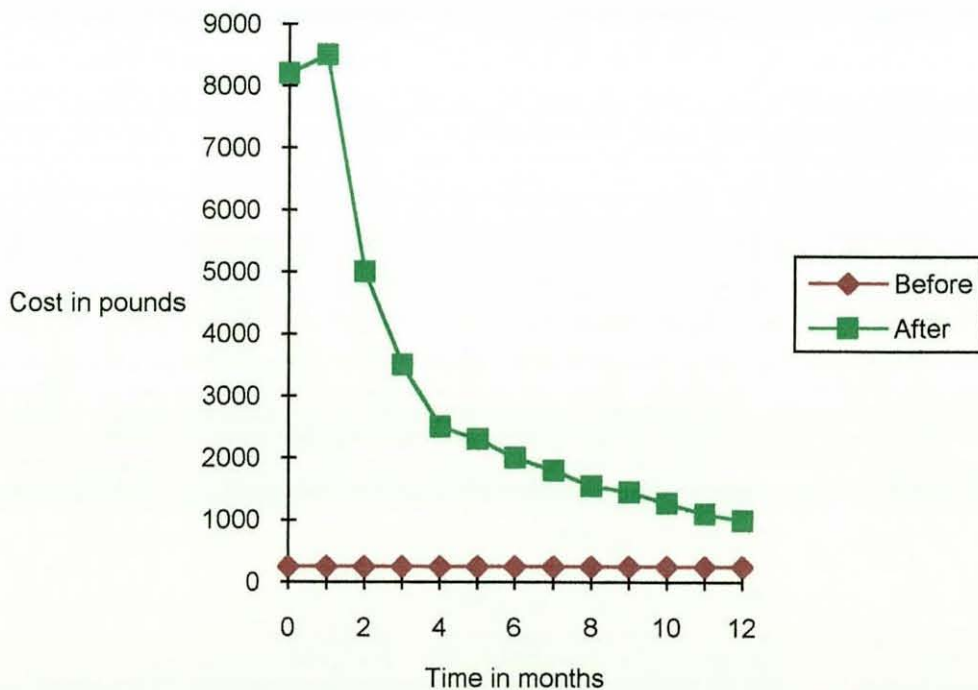


Figure 4.6 Cost-benefit analysis of complex task delegation. Before = Cost of physiotherapist carrying out the task for twenty hours. After = cost of assistant carrying out the task + initial training cost + declining monitoring cost

be worth it. The low investment approach is beneficial providing the task is carried out sufficiently often for the reduction in cost of using the assistant to pay off the training and monitoring costs. As time goes on the assistant will need less and less monitoring, reducing the costs further. Thus the delegation of the task is justified by the savings made to the service.

Once tasks are analysed as cost-beneficial, they are listed as suitable for delegation and once all tasks in the system have been analysed this way, delegation can be set up.

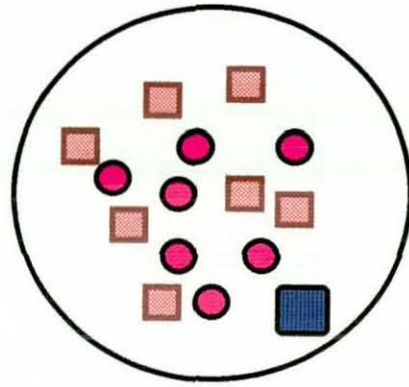
#### **4.2.4. Setting up delegation**

##### **Preparing the staff**

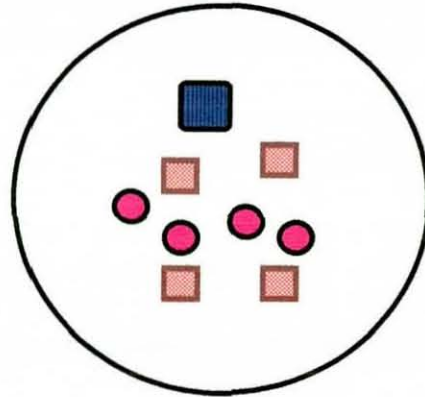
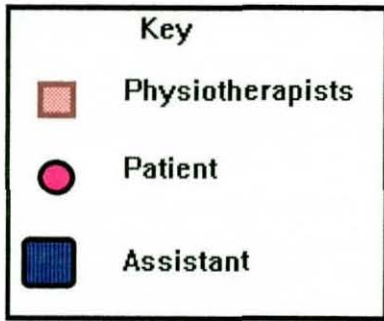
Delegation of clinical tasks in physiotherapy involves the giving up of part of the caring to another person, whilst remaining accountable. This is only likely to happen when the delegator trusts the assistant. The delegator needs to establish that the assistant has the competence to carry out the task, is available to do so and will co-operate with them throughout. The act of delegation therefore brings out three issues, teamwork, training and manpower management.

##### **Teamwork**

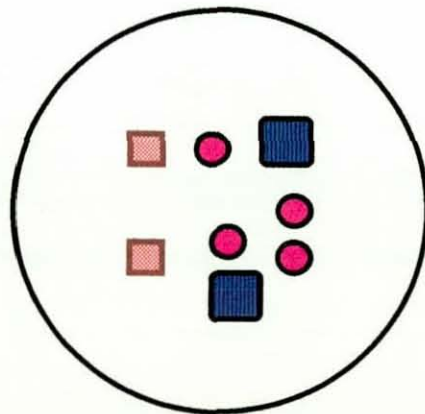
Three levels of support work were identified (Saunders, 1996a) (figure 4.7) peripheral support worker, team support worker and partnership worker. For trust to be built and clinical work delegated to an extent where assistants are carrying out all electro-therapy,



The assistant as peripheral support worker



The assistant as team support worker



The assistant as a partnership assistant

Figure 4.7 The roles of assistants

the physiotherapist and assistant need to work closely together to ensure necessary communication networks are kept open. The skills of both physiotherapist and assistant then will remain available to the patient. Work will pass more easily between the two, to the extent that the physiotherapist will be aware when the assistant has spare time to take on additional work. Working in partnership results in therapist and assistants getting to know each other's working practices and arrangements, which facilitates communication and work flows. Partnerships suggest an exclusive relationship. This is important because if more therapists use the assistant, the amount of work she or he can do for one therapist is reduced, along with delegation per therapist.

In the case of the peripheral support worker, if there are eight physiotherapists to support, all of whom carry out electro-therapy regularly, it would not be possible for the assistant to have time to carry out all of the electro-therapy for each physiotherapist. Electro-therapy could represent 25% of the physiotherapists' workload; exercise therapy could be a further 25%. Each physiotherapist could therefore potentially delegate 50% of their work, but with 8 physiotherapists delegating to only one assistant, the assistant would be overburdened by 300% more work than she could cope with. Delegation would not occur and therefore could not be planned without the availability of enough assistant hours to cope with the level of delegation.

In the team support worker situation, the assistant supports the team and gets involved in an *ad hoc* response to work. If the assistant supports four physiotherapists she will have time to do some clinical work, such as all the simple electro-therapy, which will probably only form part of a treatment and will therefore not save much of the physiotherapist's time. Exercise therapy, if undertaken by the assistant, will relieve physiotherapists of clinical care of some patients.

## **Training**

Logically the amount of training required would depend on the knowledge required to carry out a task in the context that the task is carried out. If the task is complex and involves knowledge and planning, as in diagnosis and planning of care, then the training required will be equally complex to reflect the responsibilities of the task. However if the tasks involve carrying out a treatment to a plan already formulated, with the planner and decision-maker available and communication paths integral to the procedure, then training will be short to reflect the reduced level of the responsibility.

The training required should therefore reflect the responsibility of the task and the nature of the task. If a practical skill is involved, then training on-the-job will be more appropriate than formal class room training and should form the major part of the training, the opposite would be expected in order to acquire knowledge to enable competence in diagnosis and planning of care. Training to develop practical skills was described by Evans (1992b) as job centred training. Bailey (1989b) described some principles for the training of practical skills; practising repeatedly and in different situations, keeping the trainee busy and giving the trainee some understanding. Describing learning as being different, Bailey explained that learning theories gave students a theoretical base, from which discretion can be used to adapt to different situations, thus capturing the difference between learning and training.

The assistant will need to be trained to an acceptable level of competence in all tasks that are considered suitable for delegation. This will also involve training in communication so that assistants understand under what conditions they must report back to the physiotherapist, and how and when they must extract information from patients. Some formal training, with the greater part on-the-job training, will achieve this. If the assistant is trained by the physiotherapist he or she will work with, the beginnings of a working

relationship will emerge with trust being built as physiotherapist and assistant work together.

Physiotherapists will need to learn to delegate. It is often easier to carry out a task oneself rather than take the time to show someone else. However, the time invested in instruction pays off, as the assistant becomes competent. Some training of physiotherapists will be necessary to help them to learn to share the caring of their patient with someone else.

### **Communications**

If physiotherapists are to share the care of their patients with assistants, with assistants carrying out tasks on several occasions before the physiotherapist re-assesses the patient's progress, then communication between physiotherapist and assistant needs to be formalised and understood. Task analysis should be carried out to cover the role of the assistant in carrying out the task, so that communication is planned as part of the task procedure.

Communication of task details from physiotherapist to assistant should be both verbal and written. This ensures that the assistant can carry out the tasks without relying on memory, and in the knowledge that they have understood the instructions as discussion allows time for clarification. Performance aids or "helper cards" (figure 4.8) if completed for each patient, will give assistants ownership of the instructions so that they will always have task details to hand whilst carrying out the task. But communication must be in place to allow monitoring of the underlying condition, which should be quietly progressing if treatment is going according to plan, but would need to be reported to the physiotherapist if there was any deterioration so that any adjustments or changes to treatment can take place.



<b>Physiotherapy Helper Card</b>	
<b>Name</b>	<b>Tel:</b>
<b>Physiotherapist</b>	<b>Helper</b>
<b>Diagnosis</b>	
<b>Treatment</b>	
<b>Signed</b>	<b>Date</b>

<b>Attendances</b>		<b>Changes to treatment</b>
<b>Date</b>	<b>Signed</b>	

Figure 4.8. The front, as shown by top diagram, and the back of the physiotherapy helper card.

If assistants are purely carrying out clerical and housekeeping tasks the need for precise communication is eliminated. However physiotherapists carry out electro-therapy and exercise-therapy tasks frequently for common conditions that require little monitoring and, as the effects of intervention are cumulative, are therefore ideal for delegation. If communication is arranged so that the assistant is operating as an extra pair of hands for the physiotherapist, with mechanisms in place to allow feedback to the physiotherapist when needed, the physiotherapist can delegate to the assistant in a position of trust. Accountability and responsibility are understood and accepted. There need to be rules that are set out to explain what needs to be said to patients, to assistants and to physiotherapists. Task analysis of the physiotherapist's role as well as the assistant's role will plan communications formally (Appendix A6.3 and A6.4).

When tasks are analysed there is the opportunity to state when communication should occur in each procedure. For example, before the task is carried out, the assistant asks the patient how their problem has been since the last visit. If the patient is a little better or about the same, the assistant will proceed with the treatment. However, if the patient reports that they have been worse, or are completely better then the assistant will consult the physiotherapist. These formal rules are necessary to ensure prompt attention for the patient. They can, once written down, be used in training for both physiotherapist and assistant.

Part of communication between physiotherapist and assistant will be about workload arrangements and will involve diary planning. Patient appointments need to be arranged into the assistant's diary, so that dedicated time is booked for the patient. Without diary planning it would be impossible for the physiotherapist to rely on the assistant's help and to free herself up to see another patient. Access to diaries allows this dynamic planning to take place, and by seeing available spaces in the assistant's diary, the physiotherapist can

arrange to see patients with conditions that require treatments that can be delegated. This is dynamic management of delegation.

### **Organising the Environment**

If delegation is to be carried out to the level whereby assistants are carrying out tasks for the physiotherapists, without having the underpinning knowledge of what is happening in the tissues, or the ability to diagnose, then the physiotherapist and assistant must work closely together. This allows for the supervisee to be available to carry out the tasks and for the supervisor to be at hand to intercept when needed. The resulting working partnership needs therefore to physically work in close proximity. Planning the environment will achieve this, so that treatment cubicles and workstations are shared.

Communication between physiotherapist and assistant has been reasoned as being essential for delegation to work at the level suggested. Working in close physical environment will ensure that communication takes place easily. If the physiotherapist and assistant worked at opposite ends of a large department, finding each other to exchange information would take time and effort. Planning the environment to facilitate communication, and therefore delegation, is an important part of managing the delegation process.

In a department with large staffing numbers, physiotherapists and assistants should work in teams with cubicles and work stations allocated to the teams. Ideally patient-waiting areas should be close to where the team is based, to avoid spending time away from the clinical area visiting waiting rooms to collect the next patient. A planned working environment should give opportunity for communication and supervision (figure 4.9).

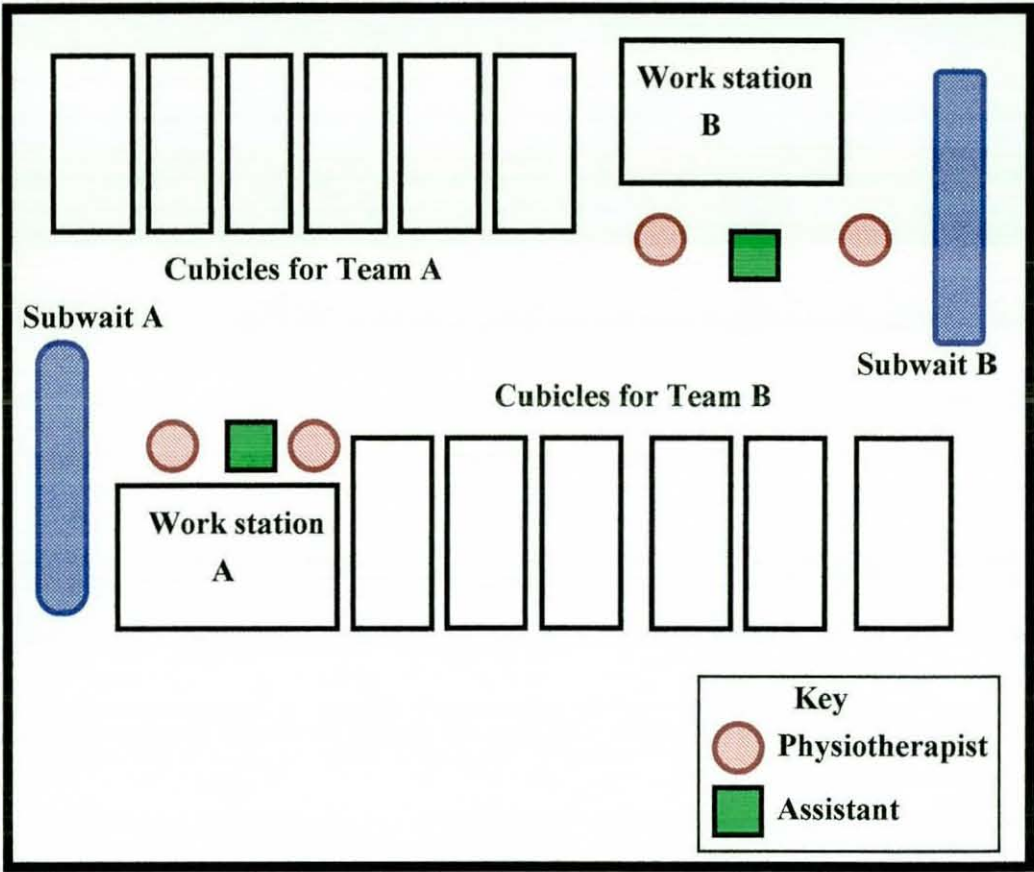


Figure 4.9. A planned working environment for two teams of staff

#### **4.2.5 Monitoring Delegation**

Any new system of working will need to be monitored to see that it is working as planned.

Initially the way the staff work together should be monitored. Although physiotherapists will have been trained in delegation, the giving up of work may be new to them. Encouragement of the process initially looking at utilisation of the assistant's time and diary monitoring, with justification expected from the physiotherapists for any suitable tasks withheld from delegation, if the assistant's time is under-utilised.

Once the system is up and running it should be measured for activity. If extra staffing is involved there should be an increase in patient contacts per physiotherapist to reflect the changes. There should also be an increase in caseload per physiotherapist. The average contacts per case should not increase per physiotherapist, as this would indicate that the patients were taking longer to be treated and discharged. Patient satisfaction should be measured to check the quality of the system, as should outcomes of care.

Staff opinion's of the new system should be sought, with suggestions for improvements sought and implemented. Professional negative views if present at this stage should be aired and reasoned with in a logical manner.

As with any service delivery, monitoring and adjusting the service facilitates its smooth running.

### 4.3 CONCLUSION

The CD model has been set out step by step with the requirements of the model discussed at each stage and justified. The use of Hierarchical Task Analysis as a modelling tool has been justified, its ability to break up complex tasks to elements that can be considered for suitability for delegation has been demonstrated. HTA has enabled the assistant's role to be set out in procedures, with communication rules embedded in the structure thus presenting safe methods of working for the assistant.

The use of HTA to present the CD model provides the user with an overview of the CD model, and the use of tabular form provides space for notes at each of the stages. This enables the CD model to be used as a checklist for examining levels of delegation.

A formula for cost-benefit analysis has been produced and examples have been given of its use to determine the cost-effectiveness of training and practice. This is of paramount importance in delegation. To use assistants must be of benefit to the service to allow for maximal use of resources. Such an approach was found in the literature search to be rare. Yet training should be analysed to see if the costs involved benefit the service, and thus that the investment is worthwhile. The training suggested in the CD model uses skill building on-the-job for the tasks found to be suitable for the system, tasks that are essentially practical. The working arrangements suggested in the CD model allow for a low investment in training because the physiotherapist, by working in partnership with the assistant, is available to re-assess the patient and make any necessary adjustments to treatments.

The CD model is now ready to be used in field research to analyse current practice and to implement delegation.

## CHAPTER FIVE

### EXAMINING THE DISPOSITION TOWARDS DELEGATION

#### SUMMARY

This chapter investigates the level of delegation in outpatient physiotherapy at field sites using the framework of the CD model to generate a checklist to be used in structured interviews with physiotherapists, assistants and managers. Five sites were visited, where the assistants were already involved in carrying out clinical tasks, to analyse the organisation of delegation and to observe practice. It was found that the level of delegation at all sites was low and had not been organised and set up taking into consideration the factors in the CD model. There was little evidence of any systematic planning and the cost-benefit of increasing delegation by altering skill mix had not been considered. The CD model implicitly suggested ways of improving delegation. The CD model was found to investigate delegation in physiotherapy and in doing so offered a means of increasing the level of delegation.

#### 5.1 INTRODUCTION

Using the CD model as a framework, an analytic tool was designed to enable the measurement of the extent to which delegation was planned and operating in services to

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The material in this chapter is published in:

Saunders L (1998), "Examining delegation in outpatient physiotherapy", *The British Journal of Therapy and Rehabilitation* 5, (1), 20 & 37-43.

be made. It was designed in the form of a questionnaire, which became the basis of an interview with managers, physiotherapists and assistants, and was followed by observation of the assistants and physiotherapists at work to allow a comparison of commitment to delegation with actual practice.

Six sites were approached in Trent Regional Health Authority. Five sites agreed to join in the survey. Each site was visited for a full working day to allow a detailed analysis of the outpatient physiotherapy service's delegation arrangements to take place.

Components were drawn from the CD model to form a checklist (table 5.1) which was used as the basis for a questionnaire for structured interviews. The interviewees were encouraged to express their opinions on the present situation of the delegation of clinical tasks. Thus the CD model was used to analyse practice by clarifying the issues associated with delegation.

## **5.2 FIELD RESEARCH**

In order to analyse current practice of delegation, an in-depth analysis was planned using the checklist generated from the CD model. The questions in the checklist were constructed from the CD model to measure the extent to which each of the factors was present, and therefore the level of planning of delegation. Construct validity was therefore used with the answers theoretically predicting the level of delegation of clinical tasks. Structured interviews with managers, physiotherapists and assistants were used followed by observation of the working practice of the assistants. If there was detailed planning of delegation this would be observed in the amount of involvement of the assistant in clinical practice. This qualitative research was thus used as a means of measuring the extent of agreement and therefore consistency of views of the staff towards the delegation of clinical tasks. An essential criterion of the inclusions of sites in the study was that there was a commitment to the delegation of clinical work to assistants.



No.	Model Component	Yes	No
1	Have tasks been formally analysed for delegation?		
	<b>By what method?</b>		
2	Have you formally assessed assistant competence in carrying out clinical tasks?		
3	Is there a list of clinical tasks for each assistant that they are competent in?		
4	Are formal criteria used to make selections on clinical tasks suitable for delegation?		
	If yes, what criteria?		
	If no, are informal criteria used?		
5	Is cost-benefit analysis formally considered in delegation?		
	If yes, what factors and how are they traded off?		
6	Is there a list of clinical tasks suitable for delegation?		
7	Is delegation formally set up and where?		
8	Are assistants allocated to named physiotherapists?		
9	Do assistants have training to develop skills in clinical tasks?		
10	Have physiotherapists received training in delegation?		
11	Are there formal rules on communication for delegation?		
12	Do assistants have their own diaries and planning aids?		
13	Are there formal instructions to follow when delegating?		
14	Are workstations arranged to include the assistant?		
15	Is delegation monitored and how?		

Table 5.1 The checklist of questions used as to analyse the extent to which delegation has been set up.

If assistants were already carrying out clinical work, then analysis of the level of delegation, and the extent to which delegation of tasks was organised, could be analysed.

### **5.2.1 The Questionnaire**

The checklist was used by extracting each component from the CD model and forming a question. The question sought to determine whether the component had been given consideration in the service. Thus the CD model was used to analyse current practice and the results of the research for each of the sites visited was sent in the form of a report to the physiotherapy manager.

If delegation is planned and set up to the level where the physiotherapists are delegating clinical tasks to assistants, then there should be rules in place to structure the practice to ensure that the patients' needs are met. The same structured approach would not be necessary if the assistant did not carry out clinical tasks. The aim of this part of the research is to use the CD model to measure the extent to which delegation is planned and set up and to analyse the actual level of delegation to see if the planning is reasonable for the actual level of delegation. Thus the answers to the questions were either that a situation existed or did not, or that the respondent was unaware it. Validity was assessed using the construct validity measure, a form of convergent validity (Cronbach and Meehl, 1955, Campbell and Fiske, 1959), with the observation of the assistants in practice implicitly confirming the level of delegation. The consistency of the responses of the physiotherapists was used as a measure of the reliability of the tool.

### **5.2.2 Method**

Each site was visited for one day. Interviews were arranged with the manager, at least two physiotherapists and all the assistants who worked in outpatients. The assistants were then observed at work. It was possible, using the checklist, to score the level of

delegation and allocate a percentage. Each positive response was awarded one point; negative responses were not awarded points. As there were 15 questions, each positive response was awarded 6.7%. By directly observing the assistant it was possible then to assess whether the percentage awarded reflected the actual level of delegation.

### **Obtaining the sample**

Six physiotherapy managers in Trent Region, selected from the Trent Handbook (1992) using a purposive sample (Moser and Kalton, 1971) to represent a wide area of Trent, were approached by letter explaining the nature of the intended research and the commitment needed to delegation in their services in order to qualify for inclusion in the study. This was followed by telephone calls to discuss the research and to gain the consent of the managers to join in the research. Out of the six centres approached five agreed to join the study and arrangements were made to visit the sites. The sixth centre declined to participate as the assistants did not carry out clinical tasks. None of the sites was involved in any other research connected with this thesis.

Four of the five sites were District General Hospitals and the fifth was a large Community Hospital in a market town. All sites had four or more physiotherapists working in outpatients in the individual treatment area and all had assistants who carried out clinical tasks, allowing the potential for the extent to which delegation had been planned to be measured. The skill mix at each of the sites is shown (table 5.2).

The sites all carried out similar outpatient services for patients with musculoskeletal conditions. The numbers of assistants employed did not vary according to the number of physiotherapists they supported or to the size of the workload.

Sites	No. Physios	No. Assistants	P:A Ratio
A	4.5	1.7	2.6:1
B	4.5	0.5	9:1
C	7.0	1.0	7:1
D	17	1.5	11.3:1
E	3.1	0.6	5.2:1

Table 5.2 The skill mix in outpatients at each of the sites and the physiotherapist to assistant (P:A) ratio.

### Interview Schedule

The manager was interviewed first, followed by at least two physiotherapists, selected by the manager to be different grades, in turn and finally the assistants were interviewed together. The interview with the manager took about an hour and those with the physiotherapists and the assistants about 30 minutes each. The interviews with the assistants were left until the last so that observation of working practice followed on from the interview. The purpose of the research was explained to the assistants, as it was important that they did not feel they were being personally tested in any way and that any suspicions or fears that they may have had about the research were addressed.

### Checklist

The interviews were structured but with open ended questions to allow for the staff to give their opinions. The questions had been taken systematically from the CD model. Specific questions on the clinical tasks delegated to assistants were included and the views of all staff were sought on how they felt delegation was working in practice and whether they were satisfied with the level of delegation.

The same person at all of the sites carried out the interviews, with the questions based on components taken from the CD model (table 5.1). Justification for each question used from the CD model follows:

#### Rationale for inclusion of questions

##### *Question 1 Have tasks been formally analysed for delegation?*

This investigates whether consideration has been given to the functional analysis of tasks and if complex tasks have been broken down into subtasks when considering who carries out what. Unless this analysis is carried out certain tasks will not be considered for delegation despite being suitable, as the physiotherapist has always carried them out before. The whole task may require the physiotherapist's knowledge, as treatment planning and patient assessment are involved. To carry out the treatment as instructed, once planning has been accomplished, may be simple to do but may be time-consuming, and therefore suitable for delegation. Unless tasks are split up into subtasks, the consideration of suitability for delegation of the subtask may not be made, as informal criteria would be used for the whole task.

##### *Question 2. Have you formally assessed assistant competence in carrying out clinical tasks?*

This question considers the present skill levels of the staff. The assistant's training and skills need to be analysed in order to establish what training is needed to increase the assistant's clinical input and thus to consider whether the investment in training is worthwhile. The skills required to carry out tasks and to locate the treatment areas need to be assessed at this stage. If the tasks that the assistant is competent in carrying out are not known to the physiotherapists, the assistant is unlikely to be delegated those tasks.

*Question 3 Is there a list of clinical tasks for each assistant that they are competent to carry out?*

For each assistant there should be a list of tasks that she or he has demonstrated competence in carrying out. As new skills are learnt they should be added to the list so that the physiotherapists, including any new staff, have prior knowledge of the level the assistant is capable of working to. Unless this information is generally known, the physiotherapists will be unlikely to delegate those tasks.

*Question 4. Are formal criteria used to make selections on suitable clinical tasks for delegation?*

In order to have a systematic approach to delegation, formal criteria must be applied to tasks to establish their suitability for delegation. Criteria may be informally used by physiotherapists already, but if applied rationally they could justify delegation of tasks and identify those tasks that are suitable and safe for assistants to carry out, even if the tasks have not been delegated before. Agreed criteria should be used both to make decisions on delegation and to identify the tasks or situations where delegation would not be suitable.

*Question 5. Is cost-benefit analysis formally considered in delegation?*

For delegation to take place there is first of all a need to establish whether any training involved will be worthwhile. The investment in training should be assessed by considering the cost of training and the cost of the assistant carrying out the task against

the cost of the physiotherapist carrying out the task. Training costs are gradually repaid to the service if there are benefits due to the training. If the investment in training is low, benefits through reduced salaries in a skill mix exercise are soon apparent, if the training was worthwhile. However this compares with a slow return of benefit from a high investment in training. Training costs, assistant costs and frequency of tasks are considerations when trading off training costs. The use of cost-benefit analysis suggests managerial involvement in setting up delegation.

*Question 6. Is there a list of clinical tasks or subtasks suitable for delegation?*

Once decisions are made on the suitability and cost-benefit of delegating tasks a list should be made of all tasks analysed as suitable under normal circumstances for delegation to assistants. This then sets the level of delegation and is a guide to physiotherapists of the potential to pass on work to assistants. It is also a target list of tasks for assistants to be trained in, in order to be able to work to the set level of delegation in partnership with the physiotherapist.

*Question 7. Is delegation formally set up and where?*

This asks the simple question to see if there is an arrangement where physiotherapists and assistants are sharing clinical work and where in the department this is taking place. In physiotherapy assistants may be used to help with exercises in the gym, but may not be used to help with clinical work in the individual treatment area where the more technical work is carried out. This question should probe the area where the assistant carries out clinical tasks, the type of work being carried out by the assistant and, implicitly, the tasks still being carried out by physiotherapists that are suitable for delegation.

*Question 8. Are assistants allocated to named physiotherapists?*

The allocation of assistants to physiotherapists will be necessary for planned delegation, as without assistant time the physiotherapist cannot delegate. The amount of assistant time per physiotherapist will depend on the ratio of physiotherapists to assistants in the area, and whether working arrangements are managed so that physiotherapists and assistants can work in partnership, facilitating delegation. If patients are coming as outpatients, there has to be an available member of staff planned to see them. The physiotherapist cannot arrange for more patients than she or he can cope with, hoping that an assistant will be free to help. The extra work has to be arranged for a named assistant who takes responsibility for carrying out tasks as planned. Allocation of assistants to physiotherapists is therefore a good measure of the potential for delegation of clinical tasks to take place.

*Question 9. Do assistants have training to develop clinical skills?*

This questions looks at the investment in training and the expectations from training. Assistant training may be on-the-job, formal in-service or National Vocational Qualification training. If there has been no training at all then it is unlikely that the assistant will be involved in treating patients. If on-the-job training has been used then practical skill building will result, and the questioning then needs to probe what skills have been learnt this way. If the assistant is NVQ trained it is important to establish what this has achieved for the assistant and how their role has changed. If clinical skills have been developed through the training and are used frequently in practice, then the investment in training will have been worthwhile. Assistant training is a pre-requisite for performing clinical tasks, but the extent of the training may vary greatly and the transfer of training into the application of skills must be analysed for this question to be satisfied.



*Question 10. Have physios received training in delegation?*

This is another indication of the extent to which delegation is planned. If delegation is set up to a high level, then the physiotherapist will need to establish communication rules with the assistant. The training for this can be on-the-job or formal. The manager will need to introduce the physiotherapist to the system set up for delegation. The physiotherapist is accountable for the care given to his or her patient and will only pass on responsibility for some of that care to the assistant if the situation allows it. Training may involve details about the mechanics of the service as well as the method of delegating. The physiotherapists need to understand the means of communication with the assistant, both verbal and written, to support the system and need to be involved in performance coaching and competence testing, as delegation is a dynamic process. The physiotherapists need to understand their role in communicating the system with patients in order to set up the process and to keep control.

*Question 11. Are there formal rules on communication for delegation?*

For physiotherapists to pass on work to assistants a mechanism will be required to be in place where the assistant will involve the physiotherapist if the patient's circumstances change. If there is no formal understanding on when the physiotherapist should review their patient's condition, then the physiotherapist will be reluctant to give responsibility to the assistant to carry out treatments. However with the understanding that the assistant will ask the physiotherapist to intervene if circumstances change, the physiotherapist will remain in control of the patient's care. If formal communication rules for delegation are in place, there is evidence that delegation is planned and encouraged.

*Question 12. Do assistants have their own diaries and planning aids?*

Appointments are arranged for physiotherapists in diaries at regular intervals, usually every 15 or 20 minutes. The physiotherapist cannot delegate to an assistant unless there is a similar diary system for the assistant to book appointments for the patients. The physiotherapist has to have dedicated assistant time to delegate to.

If the assistant is to carry out a programme of treatment over several visits then a performance aid will ensure that the treatments delegated are carried out according to plan. This will result in total compliance with instructions because the instructions are in writing on the performance aid, which is personal to the patient and kept by the assistant during the time that she or he is carrying out the delegated programme. Without this written information, the assistant will have to rely on verbal instructions or should need to borrow the patient's notes on each occasion.

The use of diary planning and performance aids suggests that delegation is advanced and planned.

*Question 13. Are there formal instructions when delegating?*

To ensure that the patient receives the level of attention and care that the physiotherapist would give as standard good practice, the assistant must be trained to carry out the treatments according to specific instructions. This training therefore needs to be formal to specify the assistant's role in administering treatments. These can be worked through for set tasks using hierarchical task analysis, so that the assistant's role is set out sequentially. This then becomes standard practice when applying frequently used treatments to common conditions. If this approach is not in place then it is possible that inappropriate treatments will be used if the patient's condition changes.

*Question 14. Are workstations arranged to include the assistant?*

Formal working arrangements, including shared working environments to encourage partnership-working relationships, will encourage the sharing of work and therefore delegation. The proximity of the team members will facilitate communication and allow *ad hoc* supervision of the assistant at work, and continued, if casual, communication between physiotherapist and patient. Intervention by the physiotherapist is likely to be achieved if there is good access to the physiotherapist through the arrangement of the physical working environment. Similarly the physiotherapist will be able to delegate work to the assistant with relative ease if the two are working close by each other. Thus the organisation of the working environment and the allocation of the environment to team members will encourage delegation.

*Question 15. Is delegation monitored and how?*

If delegation is to be sustained the system, its process and production will need to be monitored. It may be so successful that the assistant is over utilised, with the result that the physiotherapist cannot pass on some work considered suitable; there may be a need for a further skill mix adjustment to increase the available assistant time. On the contrary, the physiotherapists may begin to delegate and then abandon the system if the assistant's availability is unreliable. Oates (1993) described delegation as passing down the line the responsibility for carrying out a task, much like the baton in a relay race; the baton is passed to a trusted team member. The team members need to be available to each other to work with each other. When first set up this should be monitored. As delegation is established the need to monitor team working will be less, but the benefits of delegation must be measured. This involves measuring activity per member of staff, outcomes and quality.

Monitoring of the system is another measure of the commitment by the service to delegation. Without monitoring and making any necessary adjustments to the level of delegation, the system may drift on at an unplanned level.

### **Attitudes to delegation**

The staff were asked about their views on the present system of delegation. They were asked about their satisfaction with the level of delegation, the communication between physiotherapist and assistant and the availability of dedicated assistant time.

### **Procedure**

Responses to the checklist were noted down. The table generated had a column for comments. Written notes were made of the staffs' views on each aspect of delegation at the time of the interviews.

Observation of the assistants role was made by noting the amount of housekeeping, clerical and clinical tasks carried out by the assistants. In the case of clinical work note was made of the level of responsibility delegated, from carrying out complete tasks on patients previously delegated to them, to responding in an *ad hoc* manner to the team by continuing with tasks initiated by the physiotherapist, or assisting by setting up and removing equipment.

### **Analysis of data**

Responses to the checklist of questions were noted as positive or negative dependent on whether the factor was organised in the service, and views on the current delegation

system and on opinions on improving delegation, were noted down by hand at the time of the interviews. Tasks delegated to and carried out by the assistants were listed.

The -ve and +ve responses to each question were scored. From this the planning, setting up and monitoring of delegation was assessed and discussed in relationship to the level of delegation observed in actual practice. The overall pattern of delegation was thus assessed for the site.

The answers to the checklist questions were either “yes” or “no” according to whether the checklist component was organised in the service. Further comments, if any, were noted for each question.

The views of the staff were recorded on their level of satisfaction with different aspects of delegation. The problems that might be encountered if delegation was increased were noted using a word count for each interviewee of the reasons given.

### **5.2.3 Results**

There was little evidence of delegation being managed in the individual treatment areas at any of the sites. The tables analysing practice against factors drawn from the CD model show that a largely negative response was recorded at each site (table 5.3); there was consistency in the answers of the physiotherapists at the sites (table 5.4). Four of the sites scored one positive, or 6.7%, a fifth, site D, had two positives, or 13.4%, out of a possible 100%.

The checklist measured the formal organisation of delegation and although this was found to be low in all cases, the actual level of delegation in practice may not have been reflected by the findings of lack of formal organisation of delegation. Delegation was

No.	Model Component	SITES A,B,C&E		SITE D	
		Yes	No or Not aware	Yes	No or Not Aware
1	Have tasks been formally analysed for delegation?		■		■
	By what method?				
2	Have you formally assessed assistant competence in clinical tasks?		■		■
3	Is there a list of clinical tasks for each assistant that they are competent in?		■		■
4	Are formal criteria used to make selections on clinical tasks suitable for delegation?		■		■
	If yes, what criteria?				
	If no, are informal criteria used?	■		■	
5	Is cost-benefit analysis considered in delegation?		■		■
	If yes, what factors and how are they traded off?				
6	Is there a list of clinical tasks suitable for delegation?		■		■
7	Is delegation formally set up and where?		■		■
8	Are assistants allocated to named physiotherapists?		■		■
9	Do assistants have training to develop skills in clinical tasks?		■	■	
10	Have physiotherapists received training in delegation?		■		■
11	Are there formal rules on communication for delegation?		■		■
12	Do assistants have their own diaries and planning aids?		■		■
13	Are there formal instructions to follow when delegating?		■		■
14	Are workstations arranged to include the assistant?		■		■
15	Is delegation monitored and how?		■		■

Table 5.3 The checklist of questions used to analyse the extent to which delegation has been set up at the sites.

Question Number	Yes	No	Not Aware	Present informally
1	0	12	1	
2	0	13		
3	0	10	3	
4	0	12	1	12
5	0	12	1	11
6	0	11	2	
7	0	12	1	13
8	0	12	1	
9	2	10	1	
10	0	12	1	
11	0	12	1	12
12	0	12	1	
13	0	12	1	12
14	0	12	1	
15	0	12	1	13

Table 5.4. The responses of the physiotherapists (n = 13) to the checklist

therefore measured by the responses of physiotherapists and assistants, but this was then confirmed by observation of the assistant at work.

Five managers, who were practising physiotherapists, thirteen physiotherapists and six assistants were interviewed.

### **Ratio of physiotherapists to assistants and the assistant's role**

The physiotherapist to assistant ratio varied at each site (table 5.2). The highest ratio was at site B where only 0.5 of an assistant supported 4.5 physiotherapists; site A had the lowest ratio. Site D was more complex, at times having a 12:1 ratio, but this was not consistent and varied due to the fact that physiotherapists were working in the community in General Practitioners' surgeries, returning to base periodically to treat patients in the department. At all of the sites the assistants were observed to work in the periphery in the treatment area, mainly carrying out clerical and housekeeping tasks but occasionally helping with patient care tasks.

The level of delegation in the treatment areas at all of the sites was low. At two of the sites the assistants had been trained to carry out some of the technical clinical tasks (table 5.5), but in practice they were supporting too many physiotherapists to have the available time to treat patients.

Physiotherapists and assistants were consistent in their descriptions of the level of delegation (table 5.4), and this was confirmed by observation of the assistants at work.

At two sites there had been discussion amongst the physiotherapists to determine the tasks suitable for assistants to carry out. The decisions were not based on task suitability through rational planning, or on the assumption of working along side the physiotherapist; they were made on what the physiotherapists felt they could allow the assistant to do. The decisions, once made, were not reviewed.

At three sites the assistants were involved in exercise classes in the gym, at two of these the assistants were left to conduct the class by themselves whilst the physiotherapist



Task	Numbers of assistants
Simple electrotherapy	6
Technical electrotherapy	2
Monitoring exercises	4
Class work	3
Traction	1
Massage	1

Table 5.5 The clinical tasks the assistants, n = 6, carried out

returned to the treatment area to see individual patients. The assistants in the gym spent most of their time helping with clinical work and here there was evidence that the assistant was working as a team support worker.

### **Analysis of tasks**

There was no formal analysis of tasks to enable decisions to be made on allocation. All sites said that informal criteria were used and understood by the staff. Delegation was then kept within these limits so that physiotherapists did not make unilateral decisions on delegation.

### **Formal assessment of competence**

There was no formal assessment for competence at any of the sites. The tasks delegated were simple and safe and of the type that the patient could do at home. Competence was

said to be assessed on each occasion that a new task was carried out. There were no lists of tasks that each assistant was competent to carry out.

### **Formal criteria for task allocation and delegation**

At no site was there application of formal criteria to analyse the suitability of subtasks for delegation. At one site the manager said they were more likely to use criteria to judge what not to delegate to assistants. The knowledge and ability of the individual assistant was said to be an important factor, but there was then no system to increase the delegation accordingly.

### **Cost-benefit analysis**

Cost-benefit analysis of delegating clinical tasks to assistants had not been formally considered at any of the sites, yet at four sites the physiotherapists recognised that the assistants freed them to concentrate on clinical tasks by carrying out clerical and housekeeping duties. They failed to consider that the assistants could free them up further to concentrate on the more skilled clinical work, if the less skilled clinical tasks were delegated. At one site the physiotherapists felt that the assistant, who had been in post for many years, was reluctant to carry out essential housekeeping and preparation work; they found they had to prepare the equipment and tidy the treatment areas whilst the assistant picked the jobs that she wanted to do and yet was not fully utilised.

### **Allocation of assistants to physiotherapists**

Assistant time allocated to each physiotherapist (table 5.6) confirms that there was little opportunity to delegate clinical tasks to assistants. There was no evidence of assistants being assigned to individual physiotherapists; they were expected to support the whole

team. This meant that physiotherapists could not count on having help at any one time, unless the assistant was assigned to a class in the gym. There was no scope for partnership. In the individual treatment area the assistants remained in the periphery in support, not venturing into the cubicled area.

	No time	< One hour	> One hour	> Two hours
Physiotherapists	11	1	2	0

Table 5.6 The assistant time that physiotherapists, n = 13, had allocated to them per day

A limited part of assistants' work was in the gym where they worked directly with the physiotherapists and either took the class totally, or helped amongst the patients during the class. The level of clinical work was considerably greater than in the treatment area. In the gym the assistant was working as one of the team and sometimes in partnership with the physiotherapist.

### Assistant training

At all the sites the training had been informal and on-the-job. There was no continuing training to expand the skills of the assistant to allow a greater portion of clinical tasks to be delegated. One assistant was undertaking training to NVQ level 3, but her tasks remained the same; there was no change to her job despite the increase in formal training. She remained a peripheral support worker in the treatment area and with no particular physiotherapist to support she felt under utilised.

## **Communications**

There were no formal rules on communication, but very little clinical work of consequence was carried out to warrant such a network. Informally communications were said to be good, with assistants readily sharing information with physiotherapists when they were involved in clinical work.

At all sites the physiotherapists felt that the assistants had more time to chat with patients, and this helped the patients to confide in the assistants and was considered a valuable communication link.

There were no written communications to instruct assistants in clinical tasks. There were lists of exercises to be included in class work but these were not tailored to the individual patient.

There were no common diaries or planning aids, as the assistants did not have any individual patients that they were responsible for. Work was not planned into their schedule, unless they were taking a class.

## **Workstations**

Desk areas were said to be open for use by all of the staff, but the assistants did not share these with physiotherapists. There was no arrangement to encourage the assistants to work in close proximity with the physiotherapists. They tended to be in the periphery, waiting to clear up or assist if required. Assistants did not spend time in the cubicles with patients.

### **Monitoring delegation**

As delegation was not effectively set up at any of the sites, there was no monitoring of delegation. None of the departments ran their own quality survey, and outcomes were not regularly reviewed.

### **Attitudes to delegation**

Most physiotherapists were satisfied with the present delegation to assistants, 44% were dissatisfied by the available assistant time. All physiotherapists were satisfied with the assistants' skills and with the communication with assistants (table 5.7). Of the six assistants interviewed, three were dissatisfied with the present system (table 5.8) and with the amount of clinical work (table 5.9).

When asked what they saw as the problems in increasing the level of delegation, over half the physiotherapists reported that there was not enough available assistant time (table 5.10), only one physiotherapist mentioned "dangers".

	<b>Satisfied</b>	<b>Dissatisfied</b>
<b>Present system</b>	11	2
<b>Available assistant time</b>	9	2
<b>Assistant skills</b>	13	
<b>Communication with assistants</b>	13	

Table 5.7. The views of the physiotherapists, n = 13, on the present delegation system

	<b>Satisfied</b>	<b>Dissatisfied</b>
<b>Present system</b>	3	3
<b>Available clinical time</b>	3	3
<b>Communication with physios</b>	6	

Table 5.8. The assistants' views, n = 6, of the present delegation system

	<b>Too much</b>	<b>About right</b>	<b>Too little</b>
<b>Assistants</b>		3	3

Table 5.9. The assistants' opinions, n = 6, on their clinical workload

	<b>Assistant availability</b>	<b>Lack of training</b>	<b>Inefficiency</b>	<b>Dangers or safety</b>	<b>Lack of own time</b>	<b>Loss of control</b>
<b>Physiotherapists</b>	7	2	1	1	3	1

Table 5.10. The problems that physiotherapists, n = 13, perceived they would have if delegation was increased

## Site A

The physiotherapist to assistant ratio was low at 2.6:1, consisting of 4.5 physiotherapists and 1.7 assistants. The manager was in a caretaker role. She felt that she did not have the authority to make any changes to the present delegation system, but she considered that it was important for the new manager to do so once appointed, as she felt that the assistants were carrying out too few clinical tasks. The department had been experiencing recruitment difficulties, resulting in a reduced physiotherapy staffing coping with a high workload. Conversely, the assistants had fewer physiotherapists to support and were under used.

All three physiotherapists reported that the assistants did not have enough to do and that there was scope to delegate clinical work to them. However they felt unable to do so because they had made a decision as a department to limit clinical work of the assistants to class work only.

The assistants rotated from outpatients to the wards. One physiotherapist felt that this practice should cease, so that the skills gained by assistants in outpatients were not lost as different physiotherapy skills are needed for inpatient physiotherapy.

The assistants also acknowledged that they did not have enough to do. They reported that they were no longer learning or developing and, because of this, they wanted to move out of outpatients to new areas where they could learn new skills. They carried out clerical and housekeeping duties. They did not go into the cubicles where the physiotherapists treated the patients to assist with clinical tasks.

## Site B

The physiotherapist to assistant ratio was 9:1, consisting of 4.5 physiotherapists and 0.5 assistant. The manager felt that delegation to the assistant was unsatisfactory, but that a recent re-organisation had cut the available assistant hours.

Both physiotherapists interviewed stated that they would delegate to the assistant if some assistant time was dedicated to them. The assistant was fully occupied by the non-clinical work consisting of largely clerical work and some housekeeping duties. The cut in assistant hours had left her with no time for clinical work.

## Site C

The physiotherapist to assistant ratio was 7:1, with 7 physiotherapists and 1 assistant. The manager was keen for the assistant to carry out more clinical work, but had not considered employing more assistants to reduce the ratio and enable dedicated assistant time to be given to physiotherapists.

One part time physiotherapist, a retired superintendent, had strong views about the role of the assistant and clearly did not wish to see an increase in the clinical tasks carried out by the assistant. She felt the level of delegation was about right.

The junior physiotherapist was new to the hospital, having been in post only three weeks. Assistant's roles had not been included in his induction, so he was not aware of the skills of the assistant, or how he could delegate to her. He was willing to delegate and to train the assistant on-the-job if necessary.



The assistant found that she had very little time for clinical work with 7 physiotherapists to support, but did occasionally carry out simple electro-therapy and exercises and she set up traction. She turned off electro-therapy machines when the buzzers went. She carried out housekeeping and clerical tasks. She was satisfied with her job.

#### Site D

The physiotherapist to assistant ratio was 8:1 for the most part of the time but fluctuated to 12:1 at times, as there were 4 - 6 physiotherapists and 0.5 assistants in the treatment area. One assistant worked in the gym. The physiotherapists, 17 in all, did sessions in GP practices in the town, returning to work in the department. There were more physiotherapists than there used to be. The assistants found the coming and going of staff difficult to build working relations with.

The department was quieter than it had been in the past so there was less for the assistants to do. The manager had recently increased the amount of assistant time available to the physiotherapists, hoping that task allocation would naturally follow. The assistants were working in the periphery; both felt under utilised and dissatisfied with the low clinical workload. One assistant was training to NVQ level 3 and found that this had made no difference to her role in outpatients. She remained under utilised and at times would, as she also worked on the wards, leave the department to return to the wards where she felt more useful. The assistants carried out housekeeping and clerical tasks. They did not go into the cubicles where the physiotherapists worked and did not turn off machines for the physiotherapists.

The three physiotherapists interviewed felt that assistants would save them time doing housekeeping and clerical tasks. They were satisfied with the present level of delegation, which was that the assistants did not carry out clinical tasks in the treatment area.

Both assistants were dissatisfied by the lack of clinical work, although satisfied with their jobs.

#### Site E

The physiotherapist to assistant ratio was 3:1 consisting of three physiotherapists and an assistant who had 22 years experience and had been a radiographer prior to becoming an assistant. The manager felt that delegation was too low, despite the fact that the consensus was that the assistant was very able.

The two physiotherapists interviewed felt that they had no available assistant time in the treatment area and that the assistant did not do the basic work expected of her. The assistant enjoyed working in the gym in the mornings where she helped to treat patients and carried out some ultrasound treatment that had been initiated by the physiotherapist. She was less happy in the afternoons when she acted as a peripheral support worker carrying out mainly clerical tasks. She did not enter the cubicles to assist with clinical work. With no organisation to carry out specific tasks, the physiotherapists just got on and did the support work themselves, rather than ask. There was a lack of communication between the assistant and the physiotherapists, and the assistant's position in the department as an experienced assistant and former professional seemed to be interfering with her ability to participate in housekeeping duties.

The physiotherapists would have liked to be able to delegate more, but felt as even the basics were not being done that there was no point. The manager was reluctant to address the problem as the assistant was due to retire shortly.

## 5.4 DISCUSSION

This study has found that increased availability of assistant time to physiotherapists did not alter the level of delegation, despite physiotherapists' perceptions that problems with increasing delegation would be the lack of available assistant time. This suggests that delegation should be organised and planned, so that it operates at a set level. Leaving delegation to happen following training, such as NVQs, was not found to result in the increased involvement of the assistant in clinical tasks.

None of the sites could demonstrate that there was a disposition towards delegation that allowed clinical delegation to be set up and organised in a structured way. Delegation had largely evolved and was limited either by the lack of available assistant time, or the reluctance of the physiotherapist to break away from their dependence on departmental decisions on delegation of clinical tasks, made without the formal application of criteria or the consideration of cost-benefit.

It was clear that there was a commitment to delegation on the manager's part at all of the sites, possibly due to the current policy of the NHS on skill mix. The research clearly provoked discussion and thought. Delegation, however, was not being managed to invest in the training and utilisation of assistant and therefore delegation could not happen to a significant level.

Professionalism was also found to be barring delegation from taking place. Physiotherapists would make decisions on delegation to give away work that they did not want to do, such as class work, but the assistants were not asked to do similar work in the individual treatment area. There was no analysis of tasks in order to increase the clinical work of the assistant, even when the assistants had the spare time. Some physiotherapists felt the level of delegation was right, and yet they did not delegate clinical tasks to

assistants. This demonstrates a reluctance to give work up to assistants, probably for professional and personal reasons rather than clinical ones.

Professional decisions barred, at one site, physiotherapists from delegating when they would have liked to. There was no scope for individual physiotherapists using discretion; the physiotherapists felt that they could not break ranks with the team's former decision that no clinical tasks should be carried out in the individual treatment area. Consequently the physiotherapists had a high workload and the assistants did not have enough to do.

The CD model yielded the framework from which to systematically examine delegation. From the replies it was clear that delegation was not planned in a structured and formal way. The CD model brought out the interviewee's views on, and attitudes towards, delegation to assistants in a covert manner. However a limitation to this research is that the interviewees were selected by the manager and therefore were not random within the group. The managers could have chosen staff whose views they were already aware of. However the selection resulted in a mix of staff with physiotherapists from all of the grades interviewed, and the sample included staff with a range of experience from recently qualified to a part time retired superintendent. At two sites the two physiotherapists interviewed were the only ones available on that day due to planned absences and sickness. Despite this limitation the responses of the staff were consistent; there was little clinical delegation and therefore little evidence of bias through selection.

Investment in training to increase the clinical tasks of the assistants did not appear to be happening. The assistant who was undertaking NVQ level 3 found that her job did not change and neither did the attitude of the physiotherapists towards her. She was being trained to carry on doing the same job in the same way, restricted by a lack of opportunity to practice clinical tasks.

There was no use of criteria to scientifically consider the suitability of tasks for delegation. A systematic approach using criteria to select suitable tasks could answer the apparent fears of the physiotherapists who were unhappy to delegate to assistants. The subtasks that could be carried out by a skilled assistant may well be known to physiotherapists anyway, but reluctant physiotherapists will find reasons not to delegate the tasks. The systematic approach of the CD model would simplify decision-making on tasks suitable and cost-beneficial for delegation to the independent assessor.

The CD model also analyses the processes that need to be in place in order to allow the physiotherapist to keep control of patient care, as the assistant is given responsibility to carry out part of the treatment only. These issues of formal communication, arranged working environments and planned partnership working measure the extent to which the scene is set to nurture delegation. It was found to be absent at all of the sites.

The bars to delegation were found, therefore to be professional, personal and managerial.

## **5.6 CONCLUSION**

The CD model has been used to analyse the disposition towards delegation in five outpatient physiotherapy departments. The low scoring achieved by all of the sites in answer to the questions that the CD model generated was confirmed by both the views of those interviewed on the level of delegation, and on the level observed in practice.

The negative response to the large part of the questions demonstrated that delegation had not been systematically set at a reasonable level, that there was no preparation of the staff, the environment or the service to allow delegation to take place. There was no consideration of the investment in training and the benefits of work being carried out by

assistants rather than physiotherapists, either in relationship to costs, efficiency or quality.

The CD model has been used to measure the current usage of assistants. Its ability to generate a scoring system has been found to measure the level of delegation. By analysing what preparation there has been to implement delegation, the CD model also unveils the factors that will impede delegation. The CD model, whilst analysing current practice, will act as a tool to enable managers to highlight the areas they need to consider in order to systematically set up, plan and monitor delegation.

## CHAPTER SIX

### STRATEGIES FOR IMPROVING DELEGATION: 1 THE STRATEGY

#### SUMMARY

The configuration of outpatient physiotherapy services is explained in this chapter, with the implications of changes to skill mix discussed. The factors included in the CD model are considered as tools to implement skill mix changes safely. The CD model is presented as a mechanism for improving practice by addressing the factors that are integral to delegation, such as the availability of assistant time, task suitability for delegation and the cost-benefits of training assistants to increase their clinical role. The human factor issues, such as communication rules, partnership formations and the working environment configuration are also addressed as facilitators of delegation. Delegation is constructed systematically and rationally using the CD model and thus deals with the issues raised by the delegation of clinical tasks to assistants.

#### 6.1 INTRODUCTION

In the Health Service there is a constant drive to reduce costs whilst maintaining quality of care. One way of addressing this is to consider the skill mix of staff supplying the service. This means looking at the numbers of professionals and assistants working in a

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The material in this chapter has been published in the paper:

Saunders L (1997), "Issues involved in delegation to assistants", *Physiotherapy*, **83**, 3, 141 – 147.

given area and at the allocation of tasks between the two. If assistants can be used to carry out some of the work traditionally carried out by physiotherapists, then the cost of care will reduce. Increasing the number of assistants would also reduce the number of physiotherapists required to operate the service. With the current vacancy rate for physiotherapist rising annually (CSP, 1996c) this approach would help ease the recruitment difficulties experienced by the physiotherapy services. The shift of work from physiotherapist to assistant is likely to be unpopular with the professional even if it is a rational solution to a problem of both manpower and resources.

This research (Saunders, 1995b) has found that there is indeed a wide variation in the tasks allocated to assistants in this country, just as was found in the international literature. The numbers of physiotherapists per assistant employed in similar services also varied widely. In a survey into staffing levels, physiotherapy managers were unanimous in their verdict that assistants could be used more in two major areas in physiotherapy, medicine for the elderly and outpatients (Stock and Seccombe, 1992a). The Stock and Seccombe study already found that assistants are used in medicine for the elderly. The research using the CD model to examine delegation in outpatients found that assistants were carrying out few clinical tasks. Physiotherapists may be reluctant to pass work to assistants for professional reasons and this may bar assistants from being used to their full potential. It could result in assistants undertaking formal NVQ training to find that the content of their job does not change, as was found in the study examining delegation. To address the issues causing lack of delegation, a system of working is necessary to allow the physiotherapists to remain in control of their patient's care, but to pass on the responsibility to carry out certain tasks to the assistant. These tasks need to be systematically analysed to determine suitability for delegation and a system of support for their dynamic delegation should be set up to ensure safety in the delegation system. The CD model is just such a system. The components in the CD model will be discussed to justify their part in the strategy to improve delegation.



## **6.2 THE KEY FACTORS FOR IMPROVING DELEGATION DISCUSSED**

For delegation to improve the following should be considered:

1. The availability of assistants to support the physiotherapists.
2. Skills and skill building.
3. Systematic consideration of the tasks that could be delegated, and the cost-benefit of delegation.
4. The investment in training in relationship to the benefits from delegation.
5. Communications necessary to support the level of delegation.
6. Working arrangements to facilitate and sustain delegation.
7. The attitude of the staff to delegation.

In considering the factors to improve delegation the jobs of both the therapist and the assistant are redesigned to implement the new system. Although job design has gone through many stages in industry, in the health professions jobs have evolved and been controlled by professional bodies rather than employers (Davis and Wacker, 1987).

### **6.2.1 The availability of assistants**

The research into the tasks delegated to assistants (Saunders, 1995b) found that the greater the number of physiotherapist the assistant supported, the fewer clinical tasks the assistants were able to carry out.

Delegation, if used to develop the assistant, will enable them to build their skills and consequently to be able to help the physiotherapist more as the development continues. This is best achieved by performance coaching (Oates, 1993) where the working relationship is direct, rather than distant as in mentoring. It follows that a low

physiotherapist to assistant ratio of 2:1 or 1:1 is more likely to result in increasing the amount of work passed between the physiotherapist and assistant

Child (1984), on job design, reflected on the proportion of the job that was specialised along with the variation in discretion needed to do the job. Professionals tended to have jobs that were both high in specialisation and high in discretion. Physiotherapists have jobs that are highly specialised and have a high element of discretion; it is up to the individual physiotherapist to use professional knowledge and judgement to formulate and carry out a treatment plan. For common conditions these plans result in the application of routine treatments, that is the treatments are often the same for each physiotherapist's patient with a particular condition. Yet patients themselves are individuals and conditions do vary in severity, with the ever-present potential of an adverse reaction to treatment. So the fact that tasks are often repetitive and simple cannot detract from the need for the specialist to be involved in on-going care, if only to detect the unusual. The need to keep this control should be reflected in the close working arrangement necessary to supervise a jobholder with low discretion carrying out specialised work. The need is therefore for a low physiotherapist to assistant ratio to enable the close working practice, the ratio dependent on the proportion of the physiotherapists' work that is repetitive, easy to learn and to become competent in.

There has to be dedicated assistant time for the physiotherapist to be able to delegate a proportion of her work to, and the working relationship must reflect the need for the physiotherapist to remain in contact with the patient.

### **6.2.2 Skill and skilled behaviour**

Ability is the basic trait of an individual that depends on previous learning and is the basis for the learning of new similar activities (Fleishman, 1972). Skill refers to a level of proficiency attained in a specific activity. Fitts and Posner (1967) described skilled

performance as an organised sequence of activities with a purpose. The proficiency of the performance is reflected in the accuracy and uniformity of the component process in the activity. The spectrum of skill is broad, ranging from, in sport for example, the kicking of a ball to the strategic moves involved in a game of chess.

Physiotherapists and assistants have different abilities. However both bring a basis from which they can develop, if there is opportunity to practise. Skills develop with practise and become automatic, thus they are carried out without conscious thought. Yet, as Schneider and Shiffrin (1977) point out, the mind is continually monitoring the activity and reacting to feed back from previous responses, or environmental consequences of those responses. For example the automatic response to traffic signs and to other motorists when driving. The mind is therefore involved in carrying out practical skills automatically but also reacts constantly to some external stimuli that cannot be dealt with by the automatic process, resulting in an appropriate conscious response.

Analysing skills Welford (1976) argued that all skills involve the three cognitive stages of information processing of perceptual, intellectual and movement control, but that different types of activity emphasise the different components of the three. The separation, by using criteria, of tasks that consist of largely movement control skills from those that require predominantly perceptual and intellectual skills may facilitate analysis for suitability of tasks for delegation.

Rasmussen (1982) described three skill levels as skill-, rule- and knowledge-based behaviour. Skill-based behaviour is a highly automated and cognitive performance taking place without conscious control. Rule-based behaviour is performance based on memorised rules to familiar working situations. Knowledge-based behaviour is performance provoked by new and unknown situations where problem-solving and

decision-making are required and is the behaviour that develops expertise when previous experience is recalled and used to influence decision-making.

Writing on the evaluation of performance, Garg-Janardan et al (1987) pointed out that all tasks require a certain skill level, that level being a function of the situational demands and the experience of the operator. Bailey (1989a), on developing skills, remarked that skills appear to improve indefinitely as long as they are practised.

It is clear that the abilities of the physiotherapist will be much greater than those of the assistant. However, for tasks that predominantly use movement control skills, it is clear that skill building will occur, as long as the tasks are practised. The tasks that require little response to perceptual information and that do not result in the need for intellectual skills will be ideal for consideration for delegation. The condition that the patient is receiving treatment for will need to be monitored; this is a task for the physiotherapist, however it may not be necessary to carry out a re-assessment during a course of treatment.

Physiotherapists will be relieved of some routine tasks if they make use of assistants. Their time will be spent more productively using intellectual skills and in developing expertise. Expertise was described by Lansdale and Ormerod (1994) as skills based on understanding rather than performance, where analytical skills are used to recall knowledge of an abstract nature that has been gained by direct experience. The high investment in physiotherapists' training suggests that physiotherapists should concentrate on developing expertise.

Four types of skill and skilled behaviour are described (table 6.1) and examples are given of the tasks in physiotherapy.

Skill	Characteristic	Example in physiotherapy
Movement control skill	Organised movements, goal directed, automated	Carrying out electro-therapy Conducting exercises
Perceptual skill	Using information from the senses, comparing with similar experiences in memory	Mobilising joints, Manipulating spines, Facilitating neuro-muscular activity
Intellectual skill	Application of prior knowledge, analysing, reasoning, decision making	Diagnosing conditions, planning treatments, educating and advising
Expertise	Recall of abstract knowledge gained through experience	Diagnosing uncommon conditions or reactions

Table 6.1 Skills and skilled behaviour in physiotherapy

### 6.2.3 The tasks

Because of the reluctance of professional groups to share work with assistants, a systematic approach to analysing tasks' suitability for delegation is required. Task analysis has been described as a method of analysis that is suitable for job/team design to aid in the "effective allocation of tasks within a team" (Stammers et al, 1990).

Some tasks are complex in physiotherapy and may, if considered in the complete task context, be unsuitable for delegation. However there may be parts of the task that are

suitable for delegation, as they are easy to learn, need no immediate evaluation and are time consuming. A method to analyse the content of the whole task looking at actions, sequences, time and communications required would give the necessary information and is available in the form of hierarchical task analysis (HTA) (Annett et al, 1971). Methods such as HTA take the mystery out of tasks by using a step by step approach and stating the behaviour necessary for the task to be carried out safely.

Criteria are used informally in physiotherapy to make decisions on what tasks not to delegate. If used broadly these could have a negative effect on delegation because they are applied to the whole task instead of parts of the task, for instance "treating a patient" could be a task that some professionals could decide not to delegate to assistants, so that any activity that could be a patient treatment would not be delegated. But the assistant could carry out many tasks involved in the treatment, as the practice of many professionals would substantiate. Task analysis and the application of criteria offer a scientific means of considering the suitability of tasks for delegation. Once this approach has been introduced it will form the basis of dynamic delegation.

#### **6.2.4 The cost-benefit of delegation**

For delegation to be acceptable it must be cost-beneficial. The costs involved must be traded off by the benefits. Training and supervision costs are the main cost in training of assistants. Once the assistant carries out the task instead of the physiotherapist, the pay back begins. Analysis of the cost-benefit of using assistants can only logically help service providers to consider delegation. Chanley and Teel (1967) found a four-fold return per annum of the investment in training for an engineering inspection task. A

change in training method was found to produce improved cost savings due to better performance by Crawford and Crawford (1978). If a service can be provided without loss of quality, with an acceptable investment in training that pays off in reasonable time, service providers will be obliged to consider it, as logically it is more efficient.

#### **6.2.5 Communication to support delegation**

Disadvantages in using physiotherapy assistants to treat patients with common conditions in rural Africa were found in a report by Murray (1988) to be their lack of depth of knowledge. The assistants had the necessary practical skills but lacked an understanding of the disease process. They were therefore limited in suggesting new ideas and in recognising different diseases or injuries with similar symptoms. They sometimes did not know when to stop treatments and were found to be slow at reporting problems. These assistants worked in isolation from physiotherapists, under the supervision of the nursing staff. This experience describes the lack of qualified cognitive input into the interventions and communication systems that were too remote to work. It makes the case for communication to be structured to ensure physiotherapists are in control.

Because health professionals are accountable for the care given to their patients, they will, on delegating, pass to the assistant the responsibility for carrying out part of the caring. Because the assistant's part is contributory to an overall plan, it is important that the professional keeps control. The communication between professional and assistant has to be such that the professional is confident that they remain in control, otherwise delegation is unlikely to happen.

Communication needs to be set up in the form of working arrangements to match the level of delegation. If assistants are carrying out programmes of care on patients,

partnership arrangements of working are indicated to ensure professional involvement when needed.

Formal instructions should be given for tasks. If these are to be carried out as part of a programme they should be written down on performance aids.

Task analysis can be used to structure the instructions and the temporal aspect of when communications should be made between assistant and patient, and assistant and professional. An example of a similar use of task analysis is given by Shepherd (1992) when hierarchical task analysis was used to develop a scheme for supervising/managing maintenance fitters. Here the points when the fitter should communicate with the supervisor were drawn up in the analysis of their tasks, taking into consideration sequences, time and actions. Similarly, physiotherapy tasks can be split up, with actions to the information sought and received from patients planned, so that it is clear when the assistant must stop and involve the physiotherapist.

#### **6.2.6 The Working Environment**

The decision on the level of delegation has to be made with an understanding that the communication and environment arrangements will support the desired level. The maximum level of delegation, with the result that assistants carry out all tasks that do not require evaluation and decision-making, will need a high level of supervision and control.

Supervision of delegated work implies direct supervision of subordinates, whereas managerial delegation implies a more remote working relationship with subordinates. In the case of delegation of clinical tasks to assistants, direct supervision will vary with the competence of the assistant, and with the unskilled assistant will involve observation. Because assistants do not have the knowledge required to complete the whole task,



supervisory arrangements need to reflect that the physiotherapists must remain in control. However, many of the tasks carried out by physiotherapists are repetitive and cause a gradual change to take place in the condition being treated. These tasks would most efficiently be carried out by the assistant in an unobserved supervisory situation, but with the physiotherapists in close proximity in case either the patient or the assistant needs access to them. del Bueno (1993) described this working relationship as physical togetherness or intimacy and described it as being necessary between the nurse who directs care and the nurse who provides care. O'Brien and Stepura (1992) reported the use of a dyad model of providing nursing care in order to allocate more tasks to assistants by arranging working partnerships between professional nurse and assistant, who cared for the same group of patients. Communication was described as frequent and ongoing.

The working environment in outpatient physiotherapy can be arranged to support partnership working relationships. Physiotherapist and assistant should share the same desk and work in the same area, so that communication is intimate, frequent and ongoing.

#### **6.2.7 The attitude of staff to delegation**

Davis and Wacker (1987) noted that some jobs were designed based on tradition and rules of thumb, enforced by guilds. They pointed out that some of these traditionally designed jobs were still around, mainly in the professions such as medicine and nursing, and had not been subject to systematic design.

Mitchell (1979) described a profession as denoting service occupations that apply a systematic body of knowledge to problems, which are highly relevant to central values of society. Freidson (1973) pointed out that professionalisation occurs when a profession obtains the exclusive right to perform a particular form of work, controlling training and

access to the profession. Coke (1983) argued that professionalism had a number of adverse consequences for organisations; members of the profession having a greater allegiance to the profession than to the enterprise paying their salaries, and the increased cost in higher salaries for functional specialists compared with line management. However Watson (1977) put the issue of over zealous professionalism and the need for dedication to the common good into a balanced prospectus by stating:

*"If professionalism can be used to suggest competence and expertise it is to be embraced. But in so far as it implies separateness, exclusivity and possibly 'career immobility' it has to be rejected. Being 'professional' or having a 'professional approach' is the emphasis which is often preferable to 'being a member of a profession'."*

The need now in the Health Service is for the knowledge and expertise of professionals to work with those outside of their profession for the common good of society. However professions in the NHS have not been subject to job design and have essentially worked as a 'closed shop', making their own decisions on what work is theirs by professional rite. It is not surprising that attitudes of professionals has been against delegation to assistants, as delegation results in the giving up of work to 'outsiders to the profession' a reversal to the natural tendency of professionals to keep work for themselves. Yet as a society the common good must be considered and where work can be carried out more efficiently for the same outcomes and quality, then there is a duty to change to the cost-effective system.

Because professionals in the NHS are working as highly specialised clinicians with high discretion, a change in practice following job redesign will need to be accepted by the individual professional for implementation to be successful. Running a pilot of the new service will be necessary to measure the effect of delegation at the level set, followed by implementation in other areas if the service proves cost-effective. It is possible that there

will be either individual or group opposition to change, due to fears of loss of work by the professionals. Thus the professionals may demonstrate an attitude that is likely to deny the benefits of new, more efficient, working arrangements, to satisfy their own position and to attempt to keep work for their professional colleagues. The research will consider the impact of individual professionals on the delegation process.

### **6.3 METHOD OF IMPLEMENTING DELEGATION**

Using the factors in the CD model, delegation will be set up and be developed in Chapters 7 to 9. Measurements of practice will be made prior to the new system being introduced. It is planned to operate according to the newly established level of delegation for six-months initially before further measurements are taken. The before and after measurements will be compared. If the new system is found to be cost-effective for the same outcomes and quality, the experiment will be repeated at other sites.

In order to effect greater change in practice in the country, the theory and practice involved in this research will be offered for publication in professional journals.

### **6.4 CONCLUSION**

The strategy for implementing change in delegation through implementation using the CD model has been offered as a solution to the problems of lack of job design within the professions. By systematically approaching delegation, the arguments against delegation are addressed. The level of delegation is, in theory, set to provide a cost-effective service with training investment taken into consideration. The need for effective communication is recognised by the design of working arrangements and working environments. The strategy is to put theory into practice, to measure the result and to suggest that this can

then be generalised. The publication of the results will put the evidence out to professionals and managers for consideration for wider implementation.

## CHAPTER SEVEN

### STRATEGIES FOR IMPROVING DELEGATION: 11 THE PILOT STUDY

#### SUMMARY

The implementation of delegation is piloted in this chapter at a district general hospital. Measurements are taken of activity, number of tasks carried out by assistants and patient satisfaction of interventions, before delegation is set up using the CD model. The new system is run for six months during which time activity is measured, the views of staff are sought and, at six months, patient satisfaction is re-measured. The increase in total numbers of patients that the physiotherapists were responsible for, and the increased activity of the assistants, was found to be cost-beneficial. There was no loss of quality found from the patient satisfaction survey. The CD model had implemented delegation at the pilot site successfully.

#### 7.1 INTRODUCTION

In order to test the theories in the CD model, analysis of activity at a pilot site was necessary where the skill mix was planned so that assistants' time was available to physiotherapists, and the physiotherapists were committed to delegating clinical tasks to assistants and were willing to join in the study. With the general reluctance of physiotherapists, and indeed professionals, to give up work to assistants, it was important

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that the physiotherapists were willing to try the new system for a given period, with measurements taken before and after, to compare the new service with the old. If the pilot study proved that the delegation system worked in practice as it did in theory, then there was a persuasive argument to set up further research sites to see if the system could be generalised to other similar services.

## 7.2 THE PILOT STUDY

The design of the study was an experimental design (table 7.1) where changes were made to a system and measurements were taken before and after to measure the impact of the changes.

Pre-measurements	Experiment	Post- measurements
Physiotherapists' activity. Average attendances. Patient satisfaction. Patients' opinions of outcomes. Physiotherapists' opinion of outcomes. Estimated cost of service.	Six-month period of physiotherapists and assistants working in the system implemented using the CD model.	Physiotherapists' activity. Average attendances. Patient satisfaction. Patient opinions of outcomes. Physiotherapists' opinion of outcomes. Estimated cost of service. Tasks carried out by new assistants. Views of staff at interview at 3 and 6 months. Work study.

Table 7.1 The experimental design used in the pilot study.

Tasks that were found to be carried out frequently by physiotherapists (Saunders, 1995b) were analysed, and criteria used, to assess their suitability for delegation. Once selected they were further scrutinised to see if, following training of the assistants, it was cost-beneficial to delegate. Suitable tasks for delegation were then listed and the assistants were trained until they were competent to carry out the tasks and locate the treatment sites accurately. This was followed by performance coaching on-the-job. The physiotherapists were trained so that they understood the delegation process, communication networks and operational policies. The environment was structured to support close working relationships. Measurements were taken of the service before and six months after the system was set up, and were compared.

Skill mix changes at the pilot site had resulted in a 3:1 physiotherapist to assistant ratio being reduced to a 1.7:1 ratio due to the employment of two new part-time assistants. Following initial training, delegation was set up so that physiotherapists and assistants worked in small teams in partnership. They shared workstations and treatment areas, and had access to each other's diaries.

#### **7.2.1 Objectives of the pilot study**

Research shows that delegation varies from site to site in physiotherapy, and that there is a reluctance of physiotherapists to delegate clinical tasks to assistants. Variation may be more to do with peer pressure rather than on the nature of the task or on the competence and skill of the assistant; professional groups making decisions on delegation rather than the individual physiotherapist. At the pilot site, assistants were already helping physiotherapists to treat patients and had been trained to carry out most electro-therapy tasks commonly used, traction and routine active exercises. However, this was not done in a structured system, availability of assistant time was done on a first come first served basis, so that physiotherapists could not plan dedicated assistant time; assistants continually responded to requests for help if they were available. The physiotherapists

were therefore used to using assistants to carry out tasks for them; there was no apparent professional or personal objection to the utilisation of assistants in the systematic way suggested in the CD model. Two additional part time assistants were employed to make up a whole time equivalent (WTE) assistant and, following training in selected tasks, teams were formed with a WTE assistant dedicated to two physiotherapists.

The objective of the research was to see if, by using the factors included in the CD model, a delegation system could be set up that would be viable without loss of quality or clinical effectiveness. This action research was therefore implementing, in participation with the staff, a system in order to attempt to solve the problem in physiotherapy due to lack of clinical delegation. The pilot study tested the instruments prior to their inclusion in field studies.

### **7.3 METHOD**

Assistants were trained in carrying out electro-therapy, exercise therapy, traction, locating anatomical structures by tenderness testing and in formal communication rules. The training was based on hierarchical task analysis of the assistant's role in carrying out tasks using sequential and temporal information in the analysis, and covering communication and stop - go rules. The training consisted of some formal training to explain procedures, techniques, care of equipment, safety and formal communication with patients and physiotherapists, followed by on-the-job training until competence was reached in both carrying out tasks and localising common conditions.

Teams were set up consisting of two physiotherapists working with one assistant. Workstations, treatment cubicles and patient subwaiting areas were allocated to each team to create a working environment where communication was enhanced by physical proximity. Assistants were given their own diaries so that they could plan patient appointments in the same manner as the physiotherapists. Helper cards, or performance



aids were designed and made available to the teams, so that instructions could be both verbal and written, and so that a measure could be made of allocated work to assistants during the study.

Physiotherapists were briefed about the study and asked to delegate work to the assistant by using the helper cards, once they were satisfied that the assistant had demonstrated competence in carrying out the task using a technique similar to the physiotherapist. Lists of tasks considered potentially suitable for delegation were available to all physiotherapists. The assistants were asked to make appointments with the patients in their own diary, with the appointment for re-assessment in the physiotherapist's diary.

General measurements were taken before the pilot study of patient satisfaction, patient opinions of the outcome and activity per physiotherapist. The tasks being carried out already by the assistants were listed; for the two new assistants no clinical tasks were carried out before the study. If delegation had been set up satisfactorily, the measurements would show that the assistants' clinical work increased, but there would be no expected improvement in patient satisfaction or in outcomes. However for delegation to work effectively there should be no deterioration in patient satisfaction or outcomes.

Delegation was set up and continued at the new level for six months. Once delegation was well established during the fourth month of the study, a work study was carried out of the physiotherapists' workload, using an observer to count task frequency and task duration in order to establish what percentage of the physiotherapists' time was spent on either routine or non-routine tasks.

After six months patient satisfaction, patient opinions on outcomes, the activity per physiotherapist and the variety of tasks carried out by assistants were measured.

Physiotherapists and assistants were interviewed at three and six months by semi-structured interview to get their opinions of the system.

### **7.3.1 Sample**

The sample consisted of four physiotherapists and four part time assistants working in the individual treatment area in an outpatient physiotherapy department in a district general hospital. The physiotherapists were all senior physiotherapists and consisted of the total outpatient physiotherapy staff. The four part time assistants made up two whole time equivalents and were the only assistants working in the outpatient service. Two of the assistants had experience of outpatient work, two were newly appointed.

Samples of patients surveyed for their opinions on the service before and after were fifty patients before and one hundred patients following the study. Questionnaires were given to every third patient to be discharged following their course of physiotherapy. Discharged patients received the questionnaire at a central point so that the physiotherapists did not know if their patient would be included in the survey.

### **7.3.2 Measurement tools**

Activity was measured by counting the number of new patients and the total number of face to face contacts made with patients during the period. This data is the workload data collected by physiotherapists (Williams, 1991) in outpatients. The average activity per physiotherapist was calculated by dividing the grand sum of activity for the period by the numbers of physiotherapists. This gave the average caseload per physiotherapist (Williams, 1991), this being the average number of patients that the physiotherapist had assessed and was responsible for and either treated personally or supervised an assistant. This was done for the six-month period before the pilot study and for the six months of the pilot study, and the results compared.

A questionnaire was used to measure the patients' satisfaction with the service and opinions of the outcome (appendix A3.1) and was tested for reliability by correlating the answers of one hundred patients using a physiotherapy service and retesting two months later with a control group using exactly the same service,  $r = 0.96$ . This test for reliability was used because the questionnaire was completed anonymously to encourage patients to give their honest opinion of the service; to re-test individual and correlate their responses would have led to their identification. This experimental design to test reliability in organisational research was described by Bryman (Bryman, 1995, page 56) as a means of overcoming the possibility of recall of responses in test-retest reliability measuring. The questionnaire was developed from a questionnaire recommended for physiotherapy services (Hunter, 1991) as part of a quality document held by the King's Fund Centre (1987) with some additional questions on patients' perceptions of outcomes and helpfulness of the intervention.

The helper cards (appendix A3.2), used by the physiotherapists to delegate tasks to the assistants for each patient delegated during the study, were counted to give the number of patients treated by the assistants. Total face to face contacts seen by the assistants were counted by adding up the number of times the assistant had signed each card to verify that they had carried out the treatment according to the instructions.

Semi-structured interviews (appendix A3.3) were conducted with the physiotherapists and the assistants at three months and at six months into the study. The comments were recorded using pencil and paper during the interview.

Activity sampling, a recognised work-study technique (Christensen, 1950, Heiland and Richardson, 1957, Gilbert, 1978), was carried out using a frequency count during the work-study to record the number of times the physiotherapists were observed to carried

out tasks (appendix A3.4). The time spent on each task, to the nearest half minute was also recorded.

### **7.3.3 Analysis of data**

The data was entered on a spreadsheet and analysed in graph form to allow comparison before and after. Before and after workload and average caseload activity was compared and the cost of salaries, using the midpoint by grade, of the staff involved in the activity were calculated to assess the cost-benefit of the new service against the old. Before and after patient satisfaction and patient opinions of outcome were compared using bar graphs of the results of each question on the questionnaire.

The actual number of patients treated, including the total face to face contacts were calculated for the whole group. The number of patients and contacts treated by the experienced and the new assistants were then compared using bar graphs.

For the work-study, tasks considered suitable for delegation were termed "routine" whilst tasks unsuitable to delegate were termed "non routine". These two types of tasks were compared for both the times carried out and the time spent on them by the physiotherapists towards the end of the study.

Notes were taken by pencil and paper during the semi-structured interviews to record the views and opinions of the staff during the pilot study.

## **7.4 RESULTS**

### **7.4.1 Activity**

Comparing the same six-month period the year before with the six-month period of the pilot study there was an increase in activity of both new patients seen and total contacts (figure 7.1). Assistant staff were responsible for carrying out pre-planned treatments on 46% of the patients and 38% of contacts (figure 7.2). There had been an increase in the number of staff available to treat patients. But there was also an increase in the average activity per physiotherapist (figure 7.3).

The percentage increase in activity per physiotherapist during the pilot study was 41% for new patients and 27% for contacts (figure 7.4). The average number of contacts per case dropped during the pilot study, suggesting an increase in efficiency, as fewer treatments were required to achieve the outcomes.

### **7.4.2 Cost of service**

Using the mid point of the salaries of the grades involved for 1993 and applying the same costs to the activity measures for 1992 and the pilot study in 1993, there was a reduction in cost per new patient of approximately 22% and 15% per contact (figure 7.5).

### **7.4.3 Outcomes of treatment**

Patient opinions on the outcome of physiotherapy were similar before the pilot study compared with during the study (figure 7.6). Patients' opinions on the helpfulness of the interventions were also similar before and during the pilot study (figure 7.7). Physiotherapists' opinions of the outcomes that were judged as good were better during the pilot study than before for spinal conditions (figure 7.8) and the mean contacts per case were fewer (figures 7.9).

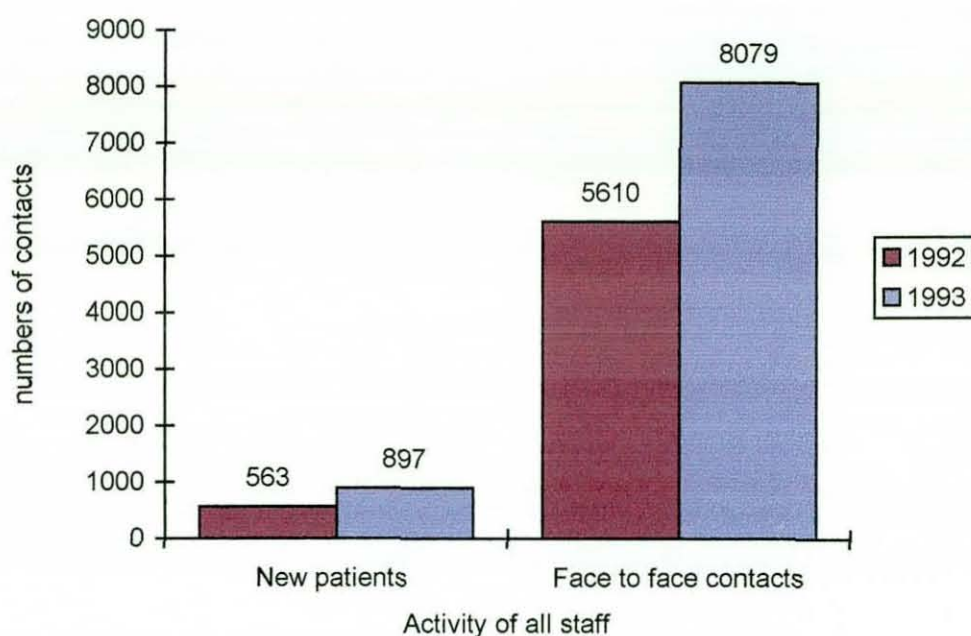


Figure 7.1. The activity increased during the period of the pilot study in 1993

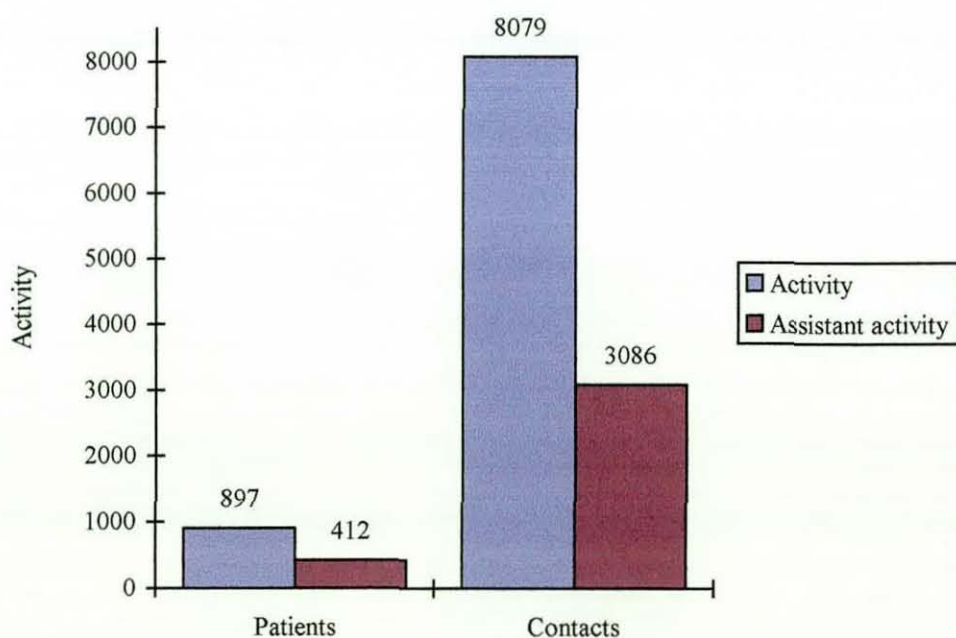


Figure 7.2 The number of patients and contacts treated by assistants compared to the total patients attending during the study.

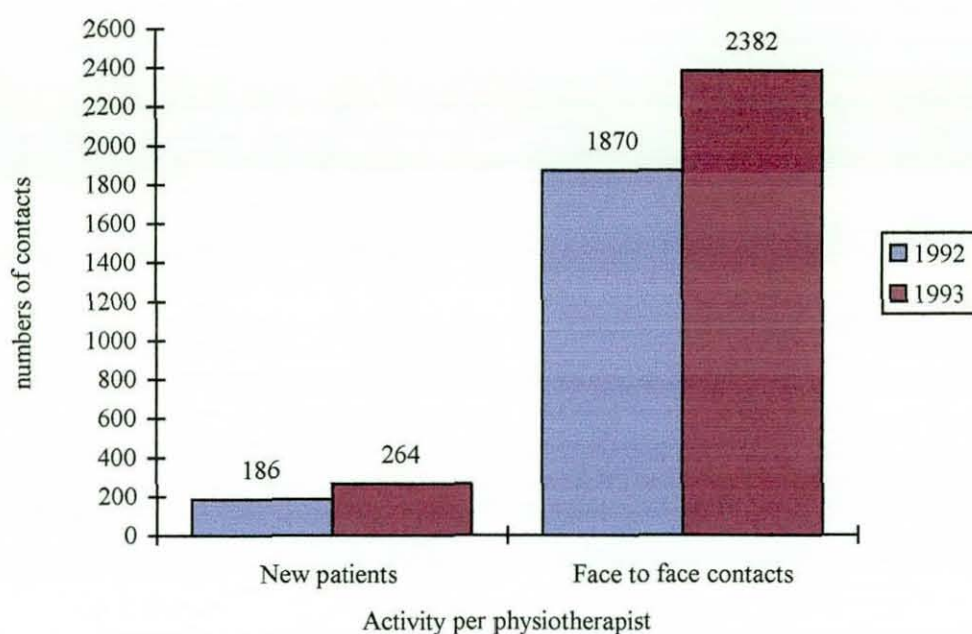


Figure 7.3 The activity per physiotherapist in 1992 compared with the activity during the same months of the pilot study in 1993.

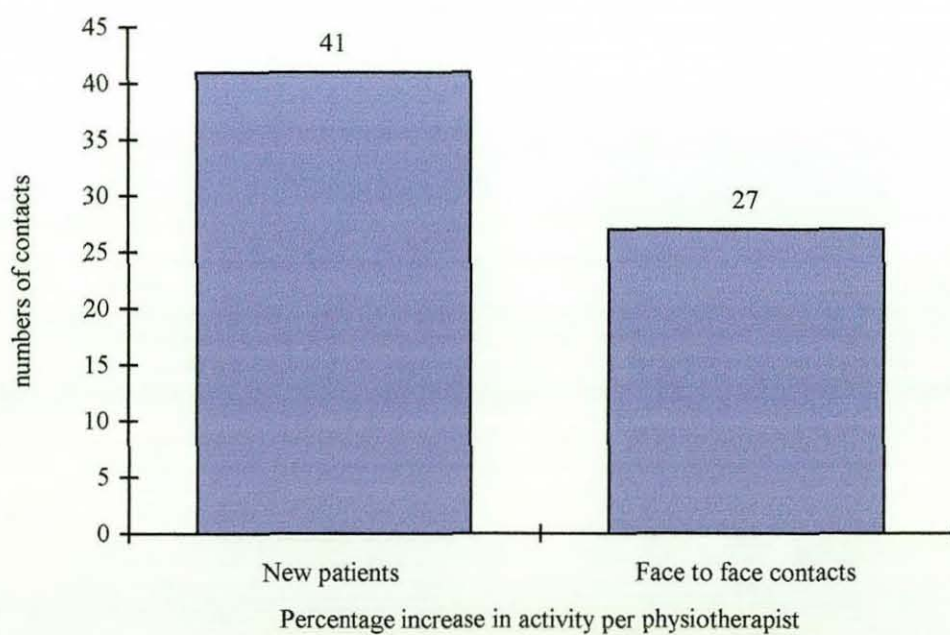


Figure 7.4 The percentage increase in activity per physiotherapist during the pilot study

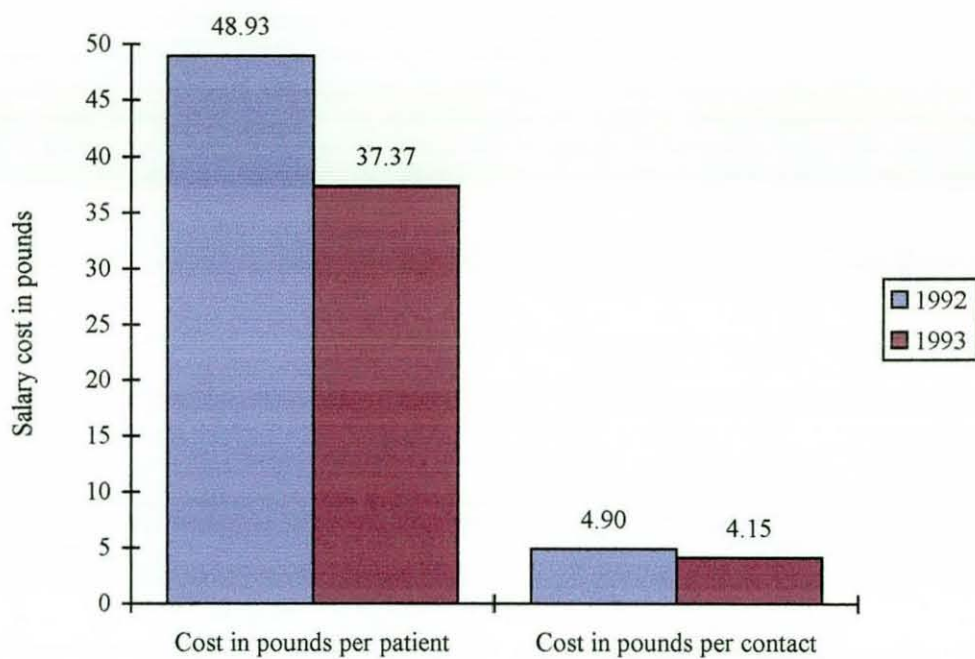


Figure 7.5 There was a reduction in cost per new patient and in cost per contact during the pilot study, based on the previous year's activity



#### **7.4.5 The patients' perceptions of advice given during interventions**

More patients felt that they had learnt a great deal about ergonomics and self-help from the intervention before than during the pilot study, but more patients learnt a moderate amount during the study (figure 7.10).

There were slightly more patients' that said they had a large amount of understanding of their problem following the intervention before than after the pilot study, but more patients had learnt a moderate amount after the pilot study than before (figure 7.11).

#### **7.4.6 The role of the assistants during the study**

The number of patients delegated by "helper card" and booked into the assistants' diaries was 412 during the study, or 46% of the patients attending for treatment during the pilot study. The assistants' contacts with these patients were 38% of the total contacts. Two of the assistants had been appointed for the study. They treated a similar number of patients to the experienced assistants (figure 7.12). From the data on the "helper card" the new assistants carried out tasks of a technical nature, the most frequent being electro-therapy, which consisted of laser, ultrasound, pulsed shortwave and interferential treatments (figure 7.13). Very few simple electro-therapy tasks were carried out.

#### **7.4.7 The work study of physiotherapists' tasks**

Despite the changes in skill mix and the large amount of technical electro-therapy carried out by the assistants, the physiotherapists still spent 39% of their time carrying out routine tasks considered suitable for delegation, which comprised 34% of the tasks they carried out (figures 7.14 and 7.15).

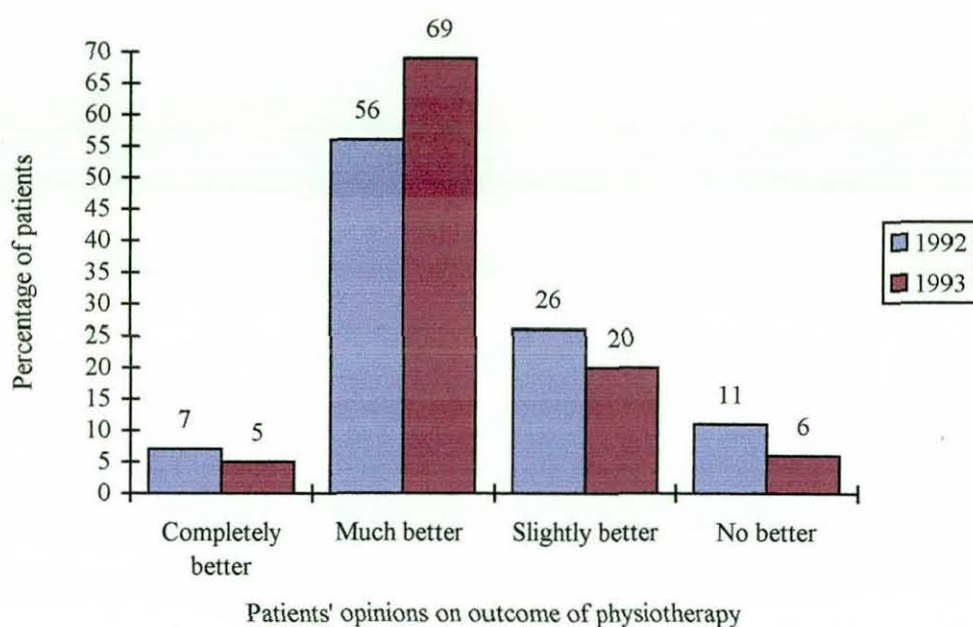


Figure 7.6 Patients' opinions on outcome of physiotherapy before and during the study

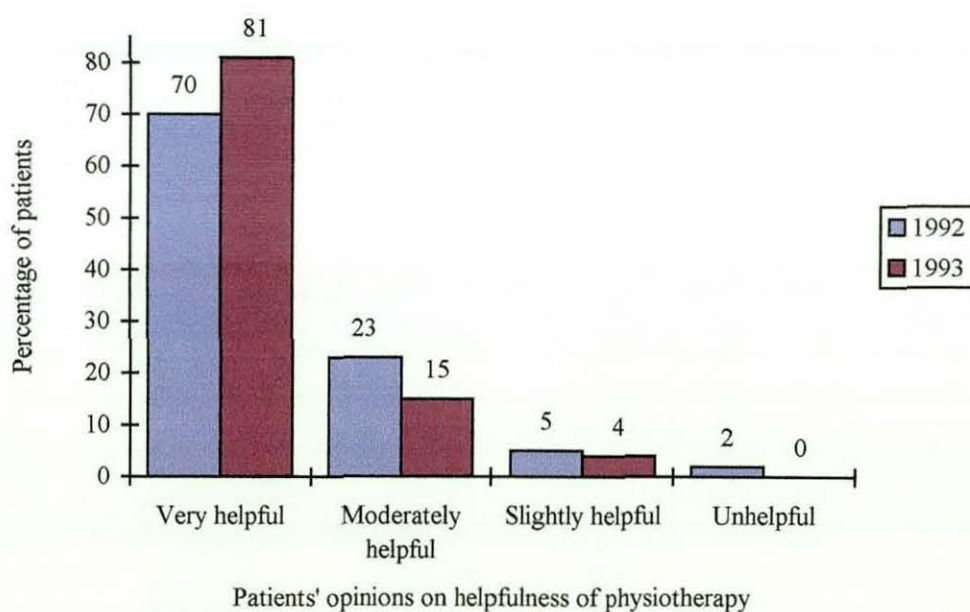


Figure 7.7 Patients' opinions of the helpfulness of their physiotherapy intervention before and during the pilot study

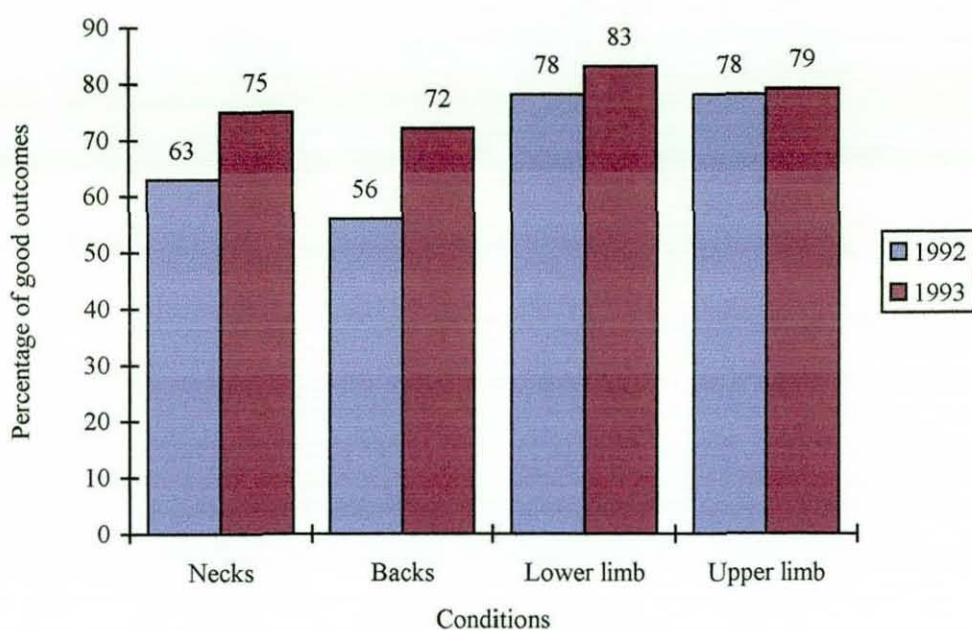


Figure 7.8 The opinion of physiotherapists on the percentage of good outcomes per conditions before and during the pilot study

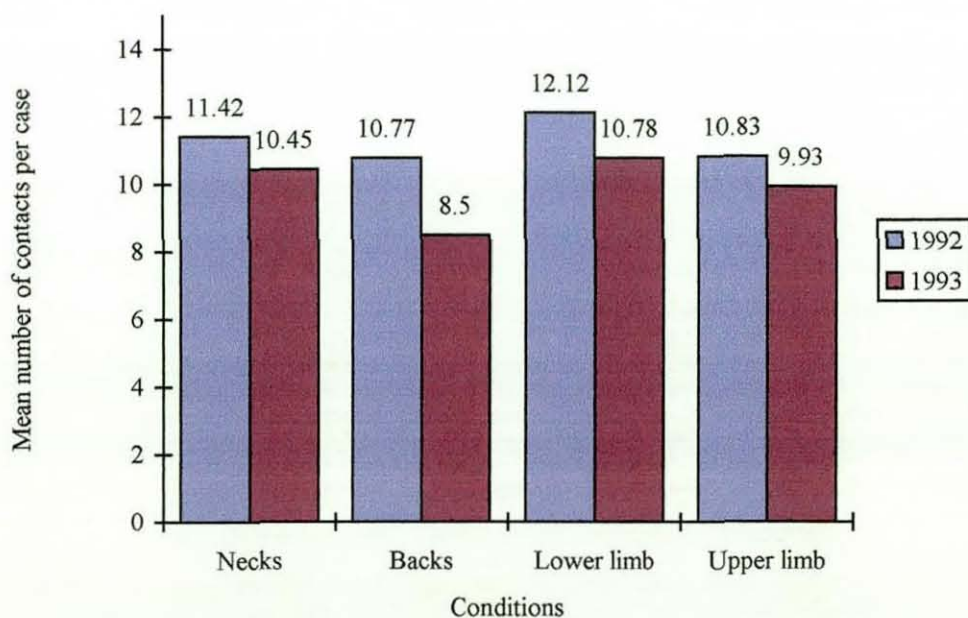


Figure 7.9 The mean number of contacts per case for the conditions comparing before with during the pilot study.



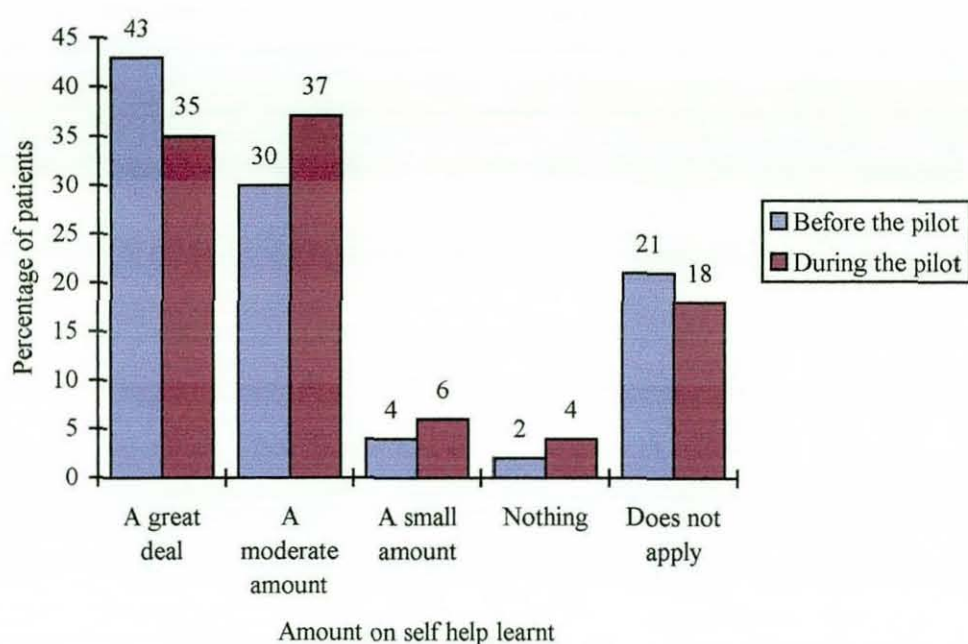


Figure 7.10 The amount that the patients' perceived that they had learnt to help themselves ergonomically before and during the pilot study

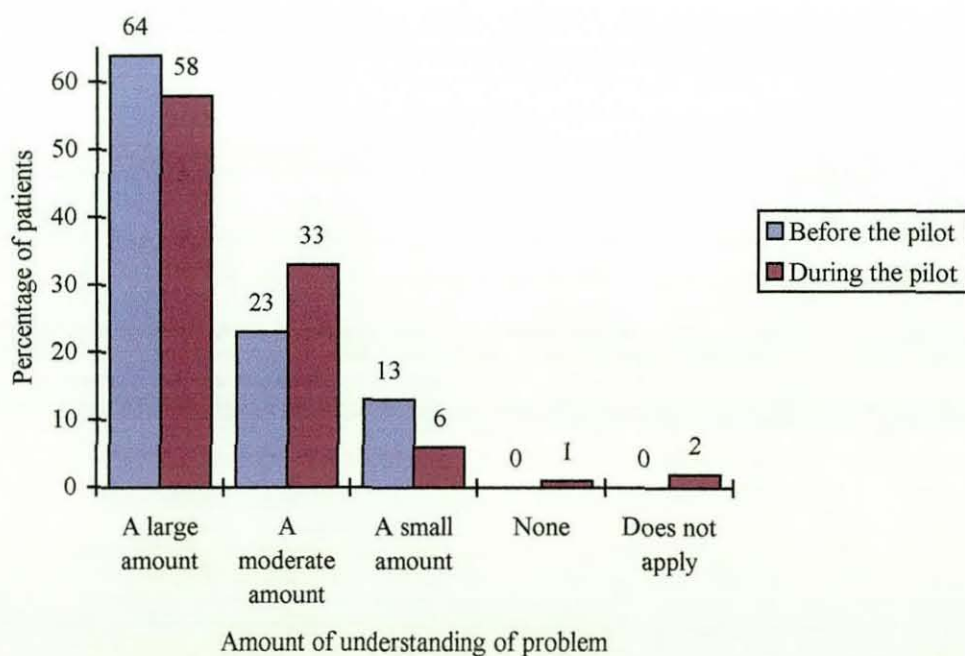


Figure 7.11 The amount of understanding of their problem that the patients' said they had before and during the pilot study

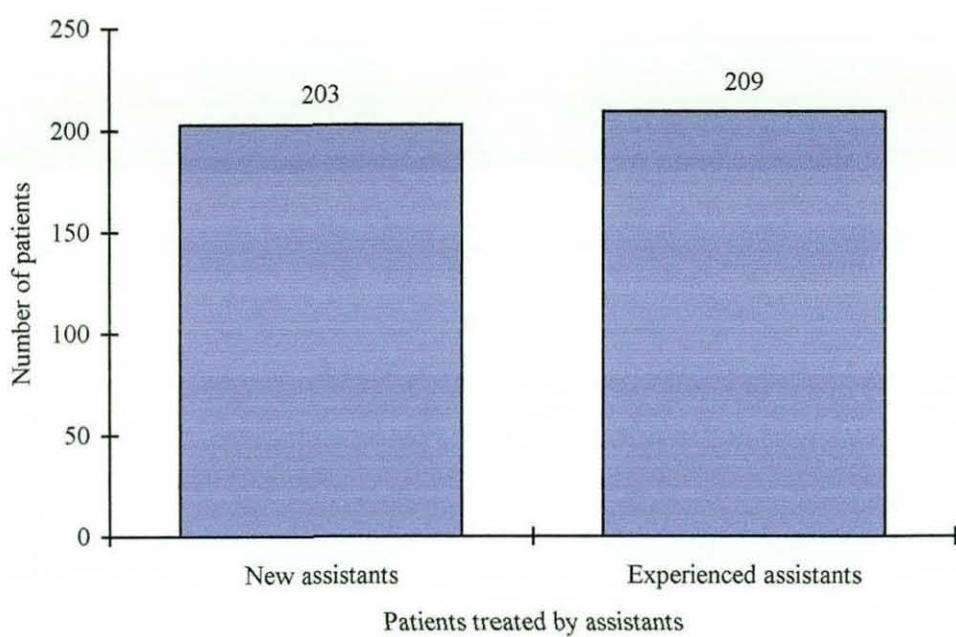


Figure 7.12 The new assistants treated a similar number of patients to the experienced assistants

#### **7.4.8 The opinions of the staff surveyed during the study**

##### **At 3 months:**

##### **The physiotherapists:**

The senior physiotherapist with the longest service who had previously used an assistant in an *ad hoc* way, now found that she was sharing the assistant with another physiotherapist and had to be more organised and plan her assistant hours. She found that she had less access to the assistant than previously and that changes in emphasis in treatments to a more manipulative approach meant that she used assistants less. She commented that assistants were not as available as before for dependent patients. She did not like writing out the instructions for assistants on the "helper cards" as it took time.

The most junior of the three senior physiotherapists said that she had found it difficult to "let go", and had found herself wanting to apologise to the patients for passing the responsibility to carry out treatments to an assistant. She worried about losing touch with the patient, yet found that the use of the diary system meant that care was planned as she intended.

The third senior physiotherapist was the steward of the Chartered Society of Physiotherapy and the senior physiotherapist in charge of outpatients. He had found "letting go" difficult, despite the structured communication network and close working arrangements with the assistant. He expressed concern about the erosion of professionalism, questioning the role of the assistant. He felt at times that he had to be in two places at once if the assistant's patient had a problem that needed his advice.

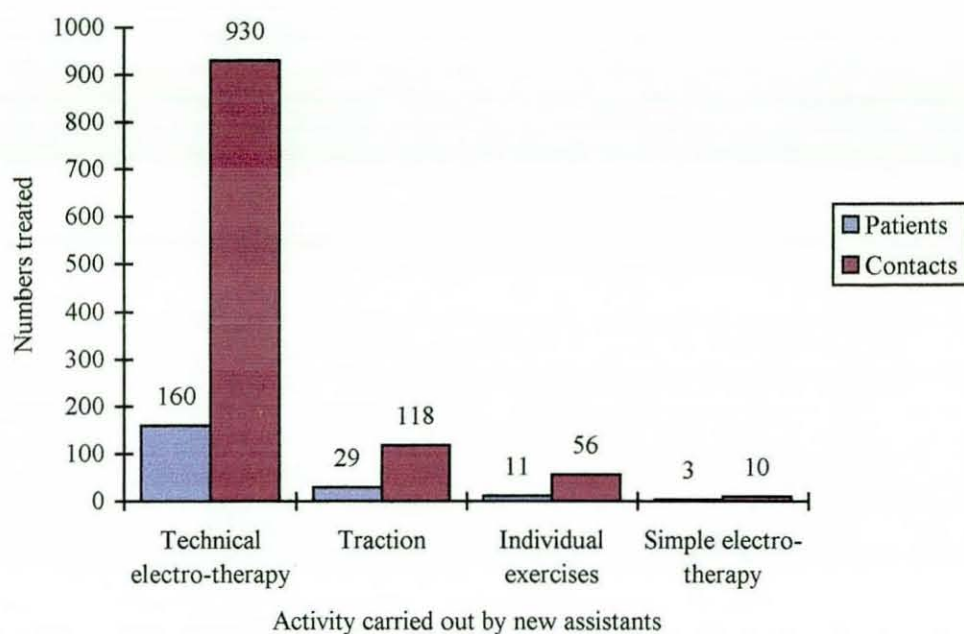


Figure 7.13 The new assistants' activity was mostly electro-therapy

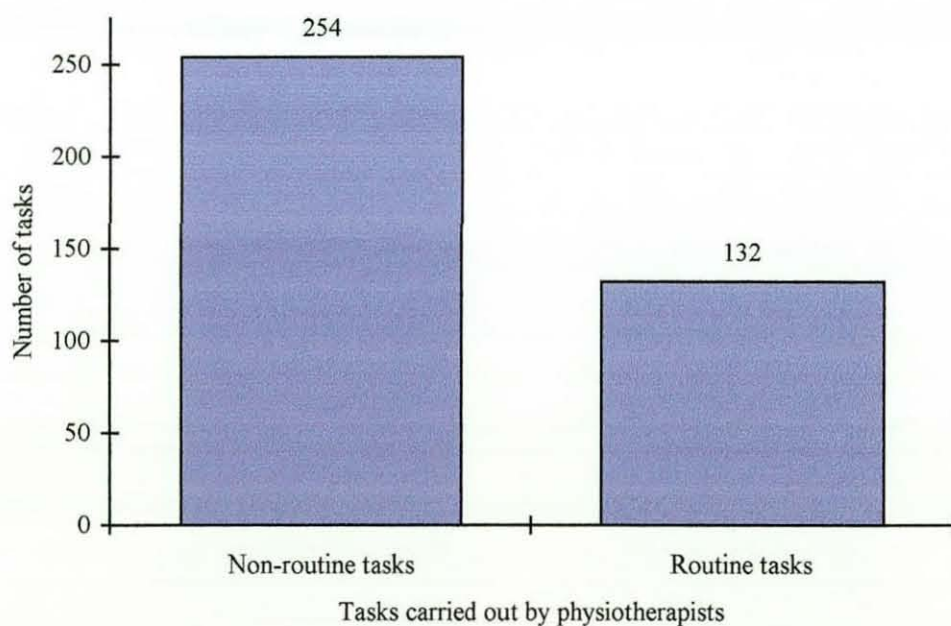


Figure 7.14 The number of non-routine and routine tasks carried out by physiotherapists during the study



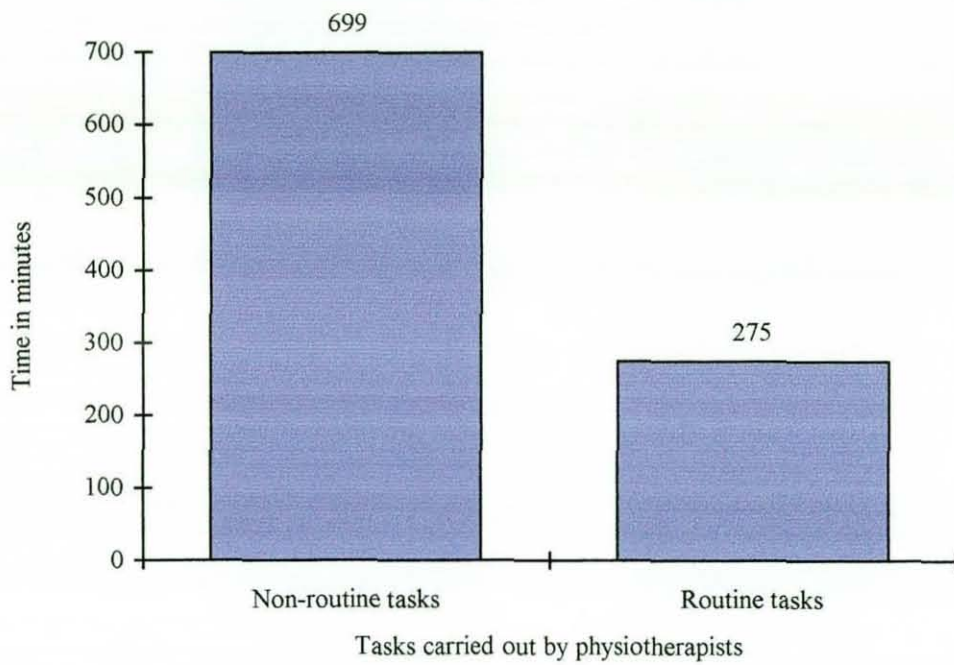


Figure 7.15 The time spent by physiotherapists in carrying out the non-routine and routine tasks during the study.



All three seniors wanted the assistants to plan more for their absences, such as preparing for annual leave by planning their patients into other peoples' diaries or by cancelling appointments.

The fourth physiotherapist was also the manager of the service who had been used to delegating to assistants before. She found the system more organised and that by delegating to dedicated assistant time she could plan her own managerial and clinical commitments more effectively.

Further comments on changes to the new service were to reduce the amount of information on the helper cards; it was felt superfluous to mention technique of application, as the assistant soon became familiar with the way their physiotherapist carried out treatments.

The physiotherapists found that the assistants reported any patient problems in a timely manner.

As a result of the staffs' comments, diary planning for dependent patients was increased from one treatment slot to two or more, a decision on the length of the time to be made by the delegating physiotherapist.

#### The assistants:

The assistants valued the helper cards but asked for the patient diagnosis to be included on the card, rather than just the area to be treated. They also asked for handouts on electro-therapy treatments to give to their patients as explanations of what was happening in the tissues; patients had more time to talk to the assistants and could not always remember what the physiotherapist had told them.

The assistants found they were most used on Mondays, Wednesdays and Fridays. To organise their workloads they asked to arrange set times for housekeeping and administration into their diaries. Now that they were organising their work into 15-minute slots there was also no time to make tea and coffee for all the staff, so this was diary planned as well!

The assistants found that they could access the physiotherapists on the occasions when they needed to when the patient's condition had changed prior to the physiotherapist's pre-planned re-assessment appointment.

#### **At six months:**

All staff were satisfied that the system was working well. The physiotherapists wanted to keep the system of partnership working as it was, continuing to have the allocated assistant time and the interdependent diary planning. As the assistants had become more skilled, the physiotherapists had got used to passing on work to them. They no longer felt the need to apologise to patients. They took the stance that they had an assistant to carry out such work for them according to their instructions, and that the assistant would inform them if there were any problems so that they could intervene.

Patient contact telephone numbers were to be entered onto the patient's helper card to facilitate cancellation of appointments if the assistant was off sick. The physiotherapist's workload was more technical, patients tending to require more of their attention than before, making unexpected increase in patient attendances difficult to cope with.

Physiotherapists had found that the assistants had developed competence in treating most conditions according to their plan and now found actual supervision was minimal. The

time taken to initiate delegation of a patient's treatment was now seen as valuable. The helper cards acted both as aid memoirs for the assistants and, as they were signed each time the treatments were carried out, they became part of the legal documentation of patients' treatments.

There were no mishaps reported during the study.

Assistants valued their new position and wanted to continue with a programme of training to learn more about the techniques and the patients' conditions. As time went on it was apparent that it was often the assistants who got the thanks from grateful patients, as they had carried out most of the care on behalf of the physiotherapist. The assistants did not report any problems in communicating with the physiotherapists, apart from the earlier request for more information on the cards.

## **7.5 DISCUSSION**

The involvement of the assistants with 46% of the patients and 38% of the contacts shows that the two Whole Time Equivalent (WTE) assistants were utilised by the 3.4 WTE physiotherapists following the setting up of delegation systematically.

Analysing the costs showed that there had been a good saving by using the assistants. The outcomes as perceived by both the physiotherapists and the patients did not deteriorate due to the increased utilisation of assistants. Neither did the patient satisfaction with the service change in a detrimental way.

The new assistants were found to be equally involved in patient care and were carrying out mainly technical electro-therapy tasks found in a survey (Saunders, 1995b) to be carried out by physiotherapists who were reluctant to delegate such tasks to assistants.

Furthermore a work study found that the physiotherapists in the study were still carrying out the tasks 39% of their time, suggesting, as one physiotherapist found, that there still was not enough assistant time with the 1.7:1 ratio used.

Physiotherapists when questioned about the new system had initially found it difficult to hand work over to assistants. They felt that they were abandoning their patients, or that their patients would feel abandoned and found themselves making excuses. By the end of the pilot study they had pride in their assistants and proudly introduced them to patients as their assistant "who carried out these tasks for them". The system worked well enough for the physiotherapists to value it, despite initial professional worries. The main cause for concern was to structure a system to cope with sudden absences of the assistant so that the large work load of the assistant did not suddenly descend on the physiotherapist whose time was more concentrated on tasks involving their knowledge and decision-making skills.

The staff were arranged in two teams of two physiotherapists to one assistant. This working arrangement was maintained throughout the study so that the physiotherapists worked in partnership with their assistants with shared working arrangements.

There were no mishaps reported during the study. The physiotherapists and assistants, working in partnership, reported no difficulties in communication. The assistants reported patient problems to the physiotherapist and the physiotherapists responded in a timely manner.

### **7.5.1 Recommendations**

Delegation in the pilot study was found to produce a service that was found to be cost-beneficial and clinically effective without loss of quality. There had been little

investment in training with two new assistants trained on-the-job with four half-day practical workshops to cover safety, care of equipment, localisation of treatment points and communications. The result was an increase by 41% in numbers of patients that the physiotherapists were responsible for, for a change in assistant time from one third per physiotherapist to one half.

The system was adopted by the staff, despite initial concerns expressed by the physiotherapists, and has continued to the present day.

## 7.6 CONCLUSION

The CD model was used to set up delegation at the pilot site. Delegation using the principles in the CD model was successfully implemented and resulted in a service being provided at a reduced cost without loss of quality or effectiveness as perceived by the patients. The principles of task allocation, communications, partnership working arrangements and adapted working environment in the CD model resulted in increased utilisation of assistants in a structured system. With low training costs, the benefits were reduced costs, allowing more patients to be treated by the physiotherapists.

The pilot study site had physiotherapists who were used to delegating in an *ad hoc* manner to assistants and a manager who was one of the practising physiotherapists. Further research was called for to see if delegation could be set up at other sites using the CD model.

## CHAPTER EIGHT

### **STRATEGY FOR IMPROVING DELEGATION: III THE FIELD STUDY**

#### SUMMARY

This chapter describes the use of the CD model to implement delegation at three field sites whilst taking the same before and after measurements at a control site. Following the experience at the pilot site, delegation was set up using the CD model as the framework. The experience of the research was that of successful implementation at two of the sites and partially at the third. There was some resistance to delegation from physiotherapists at all sites. Where this was overt, others participated and delegation was set up and operated successfully. Where opposition was covert, delegation was obstructed, as physiotherapists who had agreed to participate did not delegate to the assistant, or key members who became absent either directly or indirectly due to extended sick leave were not replaced. The issues of differences of opinion to the level of delegation within the profession were raised by this study. Where there was participation of key members, delegation was successfully implemented. The need for the commitment of management, the profession and individuals to delegation was demonstrated.

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The material in this chapter has been accepted for publication in:

Saunders L, (1998), "Managing delegation – a field study of a systematic approach to delegation in outpatient physiotherapy", *Physiotherapy*, **84**, (11), 547 – 555.

## 8.1 INTRODUCTION

Following the implementation of delegation in the pilot site, the same principles from the CD model were used to implement similar systems of delegation at three sites, with a fourth site used as a control site. A control site was included to see if there was any variation in the before and after measurements due to research being carried out on the service. However, in using assistants to treat patients an improvement in outcome or in patient satisfaction is not expected, but the outcomes and patient satisfaction should not deteriorate due to the assistants' involvement. However, to be efficient activity per physiotherapists should increase if the physiotherapists give up work to assistants, yet remains responsible for the patient, due to their freed up time becoming available for more skilled activities. Contacts per case should remain about the same; treatments should not take longer, communication between assistant and physiotherapist should result in the necessary progress assessments and timely discharge of patients.

In order for delegation to be successful there has to be the commitment of the physiotherapists to delegation. If physiotherapists decide not to delegate due to professional and personal views against delegating clinical tasks to assistants, the system will fail. For this reason the managers were first approached at the sites to ascertain both commitment to delegation and agreement to be involved in the study. Meetings with the physiotherapists followed to explain the delegation system to them and to seek their agreement to be involved. The physiotherapists in the study agreed to participate, although this followed their manager's interest in the benefits of the research. There was

therefore the potential for physiotherapists to agree to be involved in the research but in fact to be reluctant for professional and personal reasons.

There was no extra funding available at the sites participating in the research. This meant that the assistant already employed had the clinical component of their job redesigned but the domestic and clerical components remained. The research looked at the changes in tasks carried out by all the assistants working in outpatients and the numbers of patients they treated for the physiotherapists, as prior to the research the assistants had responded to the physiotherapists on an *ad hoc* basis only on availability.

## **8.2 THE FIELD STUDY**

Using a convenience sample (Nachmias and Nachmias, 1989), three sites were approached and agreed to join in the study following discussions with the managers and then acceptance by the physiotherapy staff. Because of the nature of action research involving the participation of the researcher to implement a system in participation with the staff, sites were selected to be within a twenty-mile radius of the researcher's base. A control site agreed to be measured in a similar way to the research sites.

### **8.2.1 Objectives of the study**

The three sites that agreed to participate in the research were a community hospital and two district general hospitals (DGHs). The control site was a DGH. At none of the sites had the assistants been carrying out all of the tasks analysed as suitable for delegation at the pilot site.

The objective of the research was to analyse the effects of setting up delegation using the CD model on the treatment activity, the quality and outcomes of treatments and on the



changes in the assistants' role and responsibilities. The design used was an experimental design (table 8.1) with measurements taken before and after to measure the effects of implementation against a control site.

Site	Pre-measures	Experiment	Post-measures
<b>A</b>	Patient satisfaction. Patientst' opinions of outcomes and access to physiotherapists. Assistant tasks. Assistant job satisfaction. Physiotherapists' activity.	A 3-month period of implementation of delegation using the CD model	Patient satisfaction. Patientst' opinions of outcomes and access to physiotherapists. Assistant tasks. Assistant job satisfaction. Physiotherapists' activity.
<b>B</b>	Patient satisfaction. Patientst' opinions of outcomes and access to physiotherapists. Assistant tasks. Assistant job satisfaction.	As for "A"	Patient satisfaction. Patientst' opinions of outcomes and access to physiotherapists. Assistant tasks. Assistant job satisfaction.
<b>C</b>	As for "A"	As for "A"	As for "A"
<b>Control</b>	As for "A"	The service was monitored for a 3- month period	As for "A"

Table 8.1 The research design used at the field sites.

### 8.2.2. Introduction to the field sites

The delegation already taking place in the field sites varied from site to site. The level of delegation was obtained from the manager at each site on the first visit to the site.

At site A, the community hospital, the assistant already carried out some electro-therapy and exercises tasks, responding in an *ad hoc* manner to the physiotherapists; her work was not planned and she helped if she was available. At site B, the gym in a DGH, the assistant helped with the class work in peripheral support. At site C, a DGH, the assistant in the individual treatment area mainly carried out clerical and housekeeping duties, but the assistant in the gym helped with electro-therapy and exercise treatments once the treatments had been started by the physiotherapist. In the individual treatment area patients were treated in cubicles on a one to one basis. In the gym several lower limb patients would be in attendance at any one time; the physiotherapist managed patients in a group. But they were having similar treatments to the upper limb patients in the cubicled area, however the open area in the gym meant the patients were constantly visible and the assistant was accepted by the physiotherapist as competent to carry out technical electro-therapy treatments once the machines had been set to the treatment dose.

At the control site the assistant carried out mainly clerical and housekeeping duties, but turned off machines on completion of treatment.

At none of the sites did assistants have a planned clinical workload.

The research aimed to implement delegation, following on from the pilot study, according to the principles in the CD model. The extent to which delegation had been implemented would then be measured by analysing the subsequent effects on the service in terms of activity and quality, and by analysing the changes in the assistants' jobs.

### **8.3 METHOD**

Managers at the three sites and the control site were approached and, following an explanation of the research, agreed to proceed and participate, understanding that this

was action research designed to attempt to solve the problem of inconsistent delegation in physiotherapy. The managers understood that the researcher and participants would be attempting to solve the problem together by implementing a new system and measuring for any effects. The managers were then interviewed to establish from them their perception of the level of delegation at the site and to brief them on the procedures involved in the research. Briefing discussions were then set up with the physiotherapists and the assistants to give staff the opportunity to raise any queries or objections that they may have. All of the assistants working in the field site (outpatients or gym) participated in the study and were to be partnered by two whole time equivalent senior physiotherapists per assistant; the physiotherapists were invited to the briefing by their manager and, after the discussion, two from each group agreed to participate.

The assistants were interviewed to discover the level of clinical skills that they had and to establish the training needs to accomplish competence in the tasks listed as suitable for delegation. Assistant training was then carried out in carrying out the tasks according to specific instructions, in localisation of treatment areas and in written and verbal communications. The physiotherapists were given training on the new system using the factors in setting up of delegation in the CD model on partnership, working environment, diary planning and written and verbal communications. They were given the list of tasks that were analysed as suitable for delegation (appendix A 3.8) and the criteria on dynamic suitability to delegate the selected task (appendix A 3.10). They were given instruction in supervision of assistants carrying out tasks that they had not delegated before. Communication and partnership arrangements were further described using the task analysis techniques for ultrasound, as described in Chapter 3, as an example. Each assistant was paired with named physiotherapists.

At each site once delegation was set up the service was left to operate for the three months duration of the study. Measurements were taken before the research began and then at the end of the three month period of the following:

Measurements of tasks carried out by assistants, patient satisfaction and patients' opinions of outcomes, patient access to their physiotherapist, job satisfaction and activity per physiotherapist.

The change in the assistant's job was analysed using activity sampling charts (appendix A 3.6) to see if delegation patterns had changed. Changes in task responsibilities were measured by counting the helper cards used per assistant and the number of times the assistant had signed each card as a record of the treatment being carried out as instructed. The assistants were interviewed at the end of the research period and asked for their views on the changes in their job. The assistants were asked to measure their mental workload by using rating scales with matching descriptions anchored at each end of the scale (appendix 3.6). They were asked to take the first measurement at a set time on a normal working day. A normal day was described as being one where there was no time out for training or annual leave and in which the assistant remained in their usual place of work. The second measurement was taking towards the end of the research at the same time and day of the week, again on a normal working day.

Sequential activity sampling was carried out using diary charts (Kirwan and Ainsworth, 1992) for the assistants (appendix A 3.6) and were used to record the type of task the assistants were carrying out each 30 minutes for a week before and at the end of the study. The assistants were asked to use the diary chart before and in the last month of the study when they had no planned absences such as annual leave or training. They were asked to mark in the grid provided the number of times a task had been carried out by them each half-hour of the working day.

The views of the physiotherapists were sought to see how they had found the new system by interview at the end of the three months.

The patients' views were compared before and after on outcomes and satisfaction with the service using the patient satisfaction questionnaire (appendix A 3.1), and more directly on their access to professional physiotherapy (appendix A 3.5). These questionnaires were given to patients to be completed on discharge from physiotherapy. Patients were asked to complete the questionnaire anonymously in the reception area (away from the treatment area) and to post the completed questionnaire in the post box provided.

The activity was measured to see if there had been any increase in throughput and to see if the average contacts per case were similar to the system previously used by collecting the numbers of new patients seen by the physiotherapists and the total number of contacts, as in the pilot study. The number of treatments carried out by the assistants were measured by counting the number of treatments that they had signed that they had carried out on the reverse of the helper cards (appendix 3.2).

### **8.3.1 The sample**

At site A, the community hospital, the assistant partnered a senior physiotherapist and the physiotherapy manager. At site B the assistant worked in the gym with two physiotherapists, the individual treatment physiotherapists had declined to join the study. At site C two assistants were involved, one in the treatment area who worked with two senior physiotherapists and one in the gym who partnered one senior physiotherapist. The control site was an individual treatment area in a large district general hospital where twelve physiotherapists worked with one assistant.

### **8.3.2 Measurement tools**

Activity per physiotherapist was collected by using the monthly data collected by the departments on new patients seen and total number of contacts for the three months, as in the pilot study described and discussed for reliability and validity in Chapter 7.

The same patient questionnaire was used as in the pilot study and was given to every patient on discharge. Two additional questions (appendix A3.5) were included to establish who had carried out most of the treatments, a physiotherapist or an assistant and, if treated by an assistant the patient's views on access to the physiotherapist were sought to ascertain whether the access had been as frequent as they felt necessary.

Helper cards were used, as in the pilot study, to count how many patients had been delegated to the assistants.

Sequential activity sampling was carried out using the diary charts for the assistants' activity (appendix A 3.6).

The assistants' views on their job were collected from 100mm analogue scales, measuring specific factors about their work (appendix A 3.7) by using verbal descriptions attached to each end of a rating scale. Although the meanings of such scales may be unclear, sets of ratings have been used to analyse change in human performance and mental workload (Kantowitz and Sorkin, 1987) and it was changes in performance and mental workload that the tool was used to measure.

Semi-structured interviews were carried out with the staff (appendix A 3.3).

### **8.3.3 Analysis of data**

Activity in the form of caseload was compared before and after to see if there had been any increase in activity per physiotherapist, although this was not expected in the gyms at

site B and C. Comparisons of changes in activity were made with the control site using the chi-squared test, degrees of freedom = 1.

Tasks carried out by assistants before and after were compared by entering the information from the sequential diary charts onto a spread sheet and using bar graphs to see if there was a change in the type of tasks being carried out.

Helper cards were counted to calculate the number of patients the assistant treated.

Job satisfaction was analysed using bar graphs to compare perceptions of work intensities and satisfaction.

Patient satisfaction and opinion of outcomes were compared using bar graphs.

Notes were made of physiotherapists' and assistants' opinions of delegation from their responses made during the semi-structured interviews.

The control site was also measured for patient satisfaction and outcomes, activity and assistant tasks and job satisfaction.

## **8.4 RESULTS**

At Sites A and B delegation had been implemented successfully, with both sites adopting the system. At Site C the individual treatment area was not successful but there had been positive changes in the way the assistant worked in the gym, although measurement were not taken by the physiotherapist. The interviews with the staff, as reported, reveal why. Site C was revisited and delegation was set up again this time with two new job-share physiotherapists and one senior physiotherapist from the earlier study. Assistant clinical activity increased for the job share physiotherapists, but the senior physiotherapist from the earlier study still did not delegate.

#### **8.4.1 Activity changes per physiotherapist**

At Site A where there had been no increase in assistant time, there was an increase in activity, or numbers of patients and contacts, per physiotherapists (figure 8.1), this was found to be significantly greater than the slight increase at the Control Site,  $p < 0.05$ . At Site B the assistant carried out treatments that previously the physiotherapists did not have the time to carry out. She also continued to support the physiotherapists by helping with class work. The class sizes were not planned to alter, therefore there was no increase in activity per physiotherapist expected or obtained.

At the Control Site the activity remained approximately the same per physiotherapist, with a very slight increase in numbers of patients seen (figure 8.2). In comparison the increase in new patients per physiotherapists at Site A and at the Pilot Site was significantly greater than at the Control Site,  $p < 0.05$  at both sites (figure 8.3).

#### **8.4.2 Patient satisfaction**

At Site A 47 patients completed the questionnaire before and 50 after the study. There were no real changes in patient satisfaction before and after the study. Graphs for the amount learnt on ergonomics/self help were similar (figure 8.4), as were graphs on perceived helpfulness and on the outcome of the intervention (figures 8.5 and 8.6).

During the study all patients felt they had access to their physiotherapists when treated mainly by the assistant at Site A, but this was not so before (figure 8.7).

At Site B 30 questionnaires were distributed before and after the study. 26 were returned before and 28 after the study. More patients found the intervention helpful after the study than before (figure 8.8) and outcomes were also better (figure 8.9).

For those patients treated mainly by the assistant, access to their physiotherapist was considered better afterwards than before (figure 8.10).



At the Control Site, patient opinions on the amount learnt to help them, helpfulness of interventions and outcomes were similar, before and after, (figures 8.11, 8.12 and 8.13).

#### **8.4.3 Patient treatments delegated to assistants**

At Site A 55 helper cards were used during the three months, with a total of 353 contacts. At Site B 52 cards were used for 294 contacts, an average of 18 and 17 patients a month respectively (figure 8.14).

At the Control Site the assistant was not delegated any clinical work.

#### **8.4.4 Tasks carried out by assistants**

At Site A the assistant had been carrying out treatments for the physiotherapist on an *ad hoc* basis. After the study she was able to do a larger range (figure 8.15) of clinical tasks independently; her work was planned and she continued to see the patient independently until the re-assessment by the physiotherapist.

At Site B the assistant did more electro-therapy tasks after the study and fewer exercises (figure 8.16).

At the Control Site the assistants job remained largely clerical and housekeeping (figure 8.17).

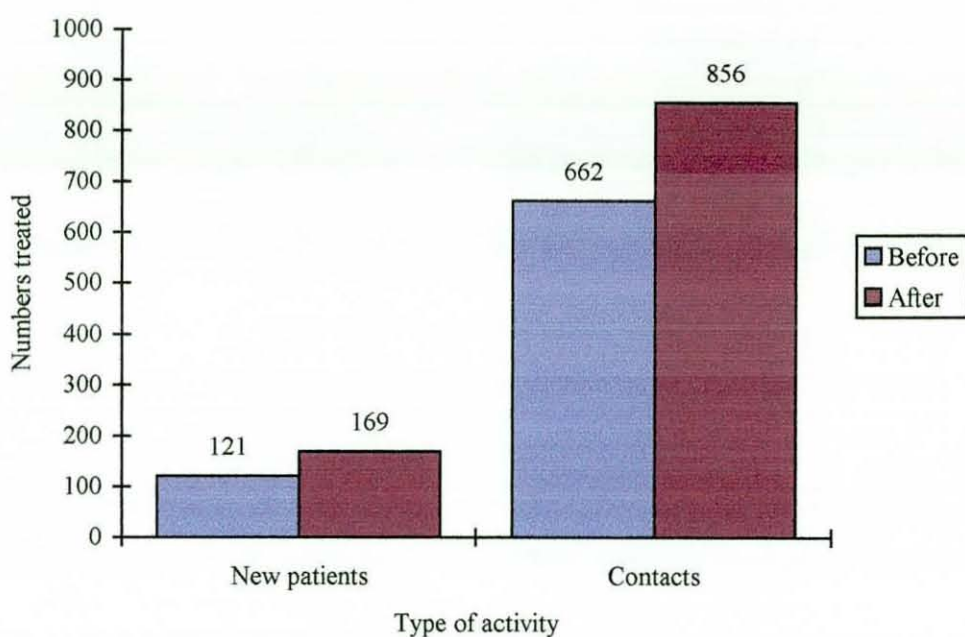


Figure 8.1. The activity per physiotherapist increased at site A and the increase was significantly different,  $p < 0.05$  to the change at the control site

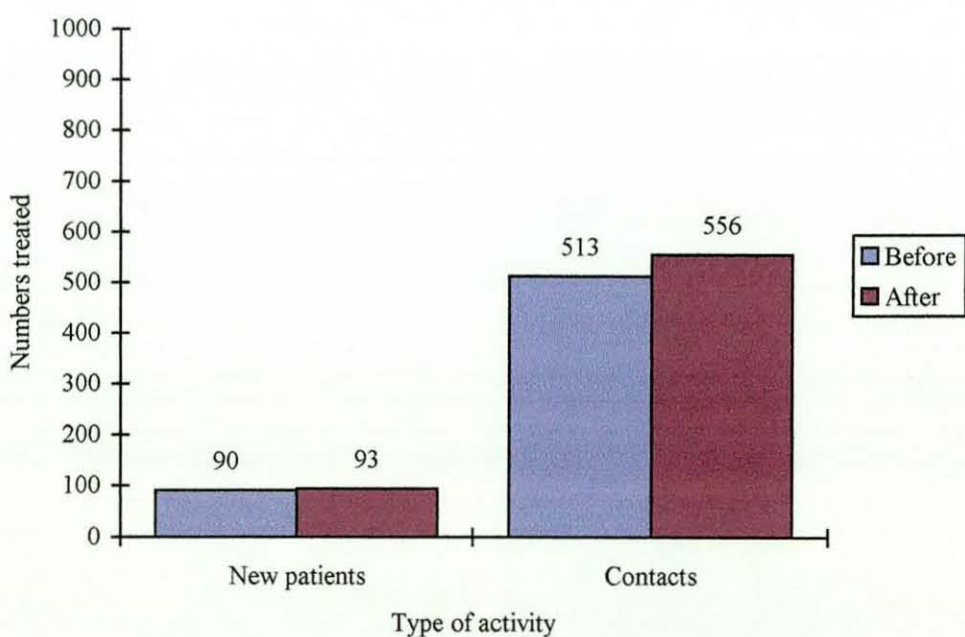


Figure 8.2 The activity at the control site remained approximately the same before and during the study

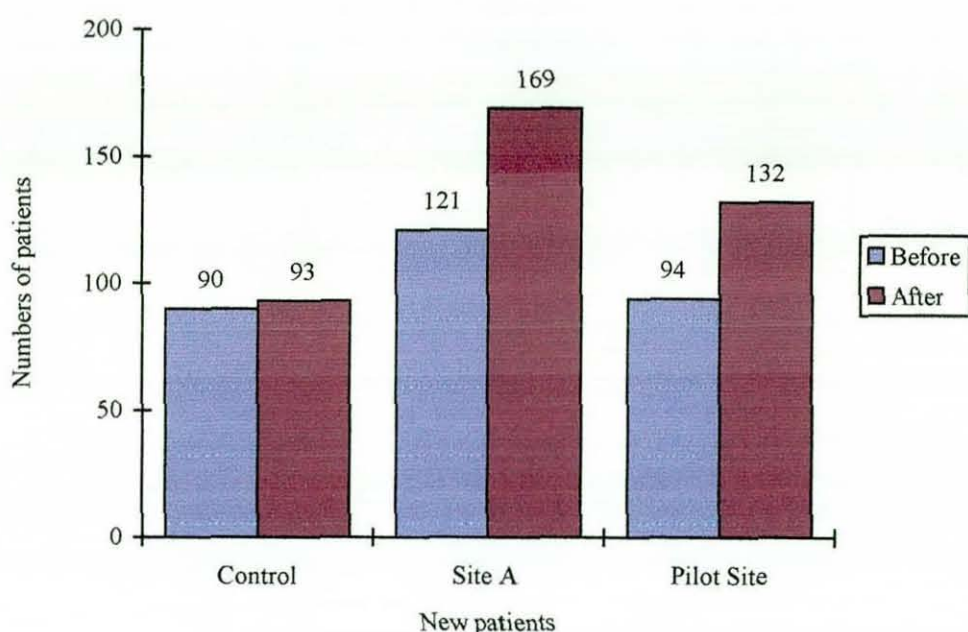


Figure 8.3 Comparison of the new patients seen per physiotherapist before the study with after the skill mix changes increased significantly at Site A,  $p < 0.05$ , and the Pilot Site,  $p < 0.05$ , compared with the Control Site.

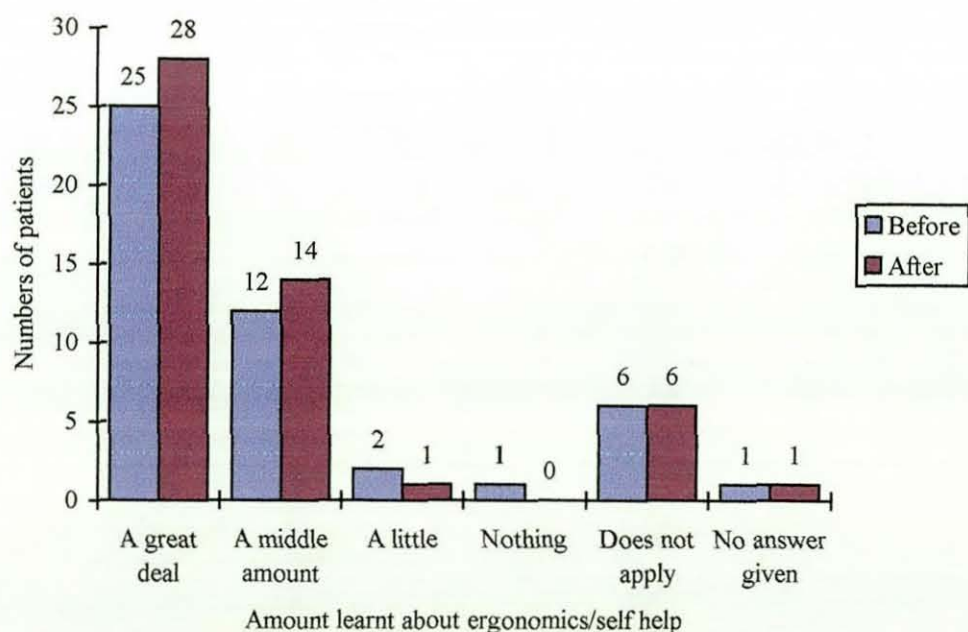


Figure 8.4 Comparison of the amount patients felt they had learnt before and after the skill mix changes at Site A

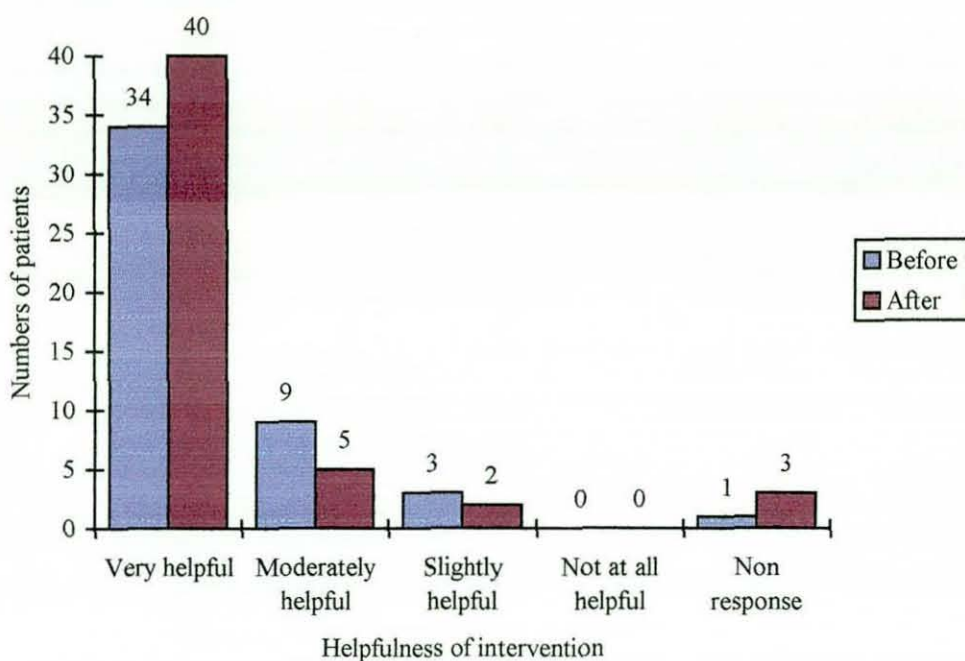


Figure 8.5 Comparison of the patients' opinions of the helpfulness of the intervention before and after skill mix change at Site A

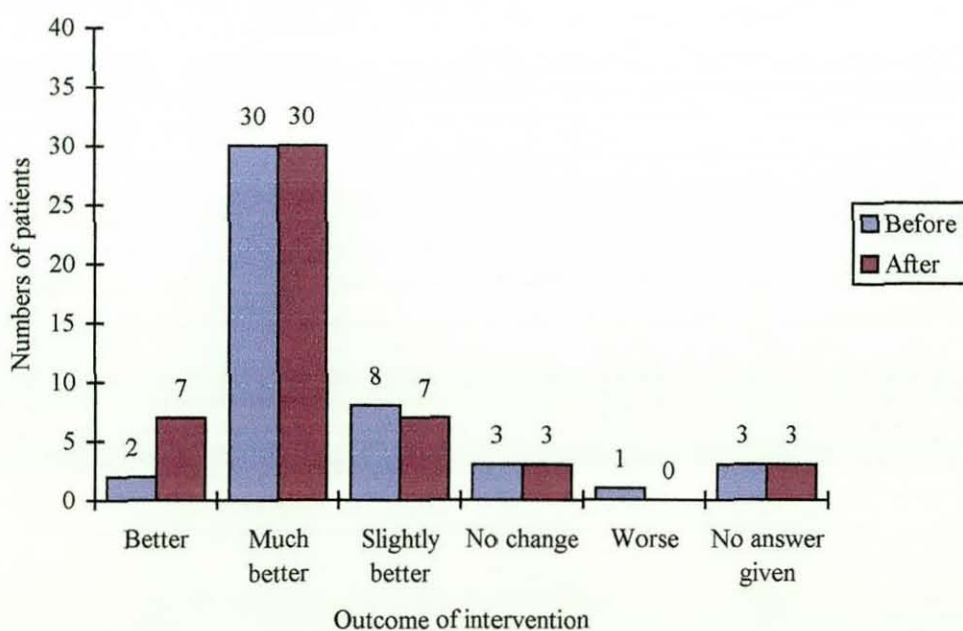


Figure 8.6 Comparison of the patients' opinions of the outcome of the interventions before and after the skill mix change at Site A

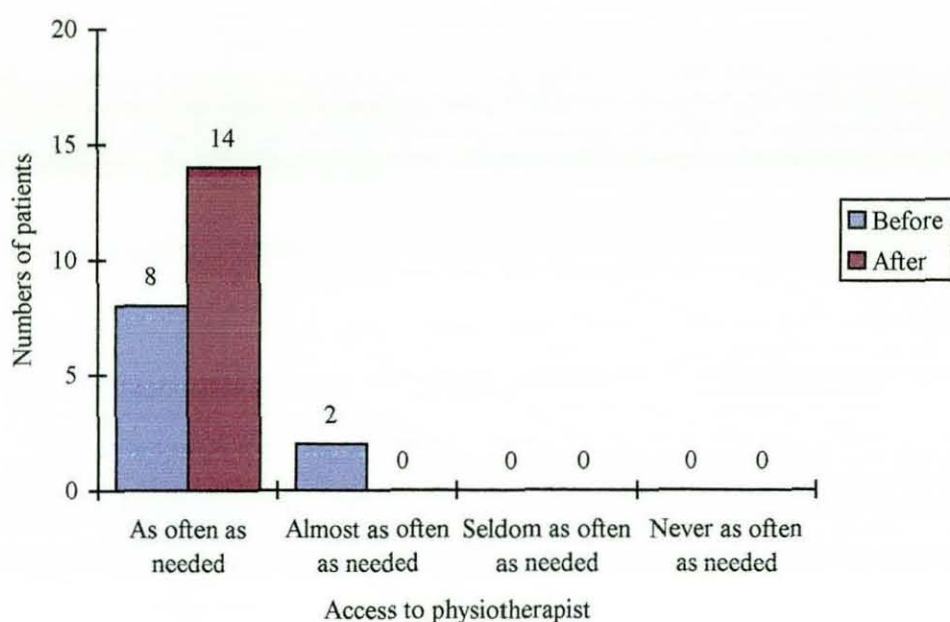


Figure 8.7 Comparison of the patients' views on access to their physiotherapist when they were mainly treated by an assistant at Site A

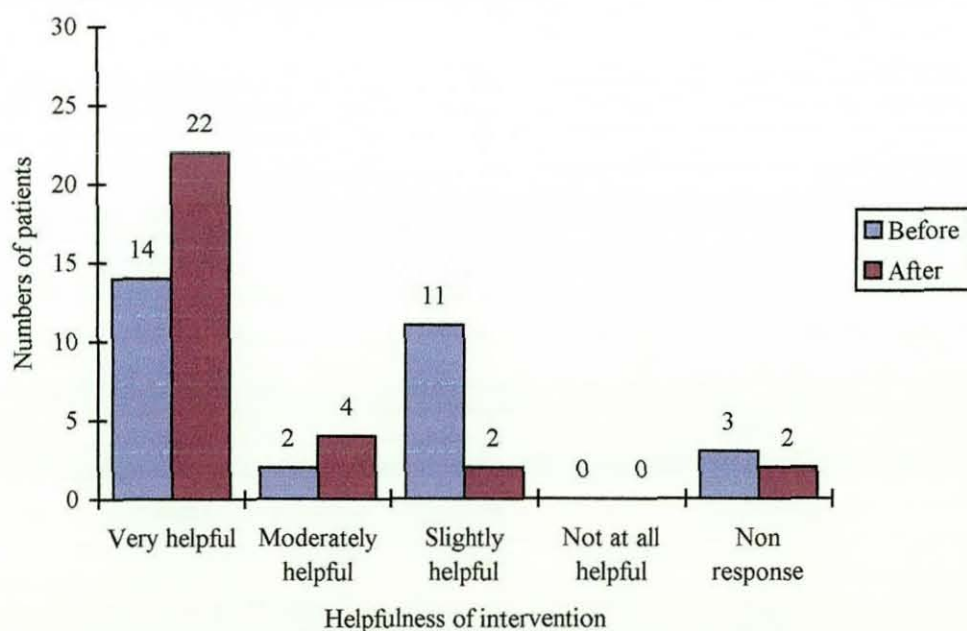


Figure 8.8 Comparison of the patients' views of the helpfulness of the physiotherapy intervention before and after skill mix change at Site B



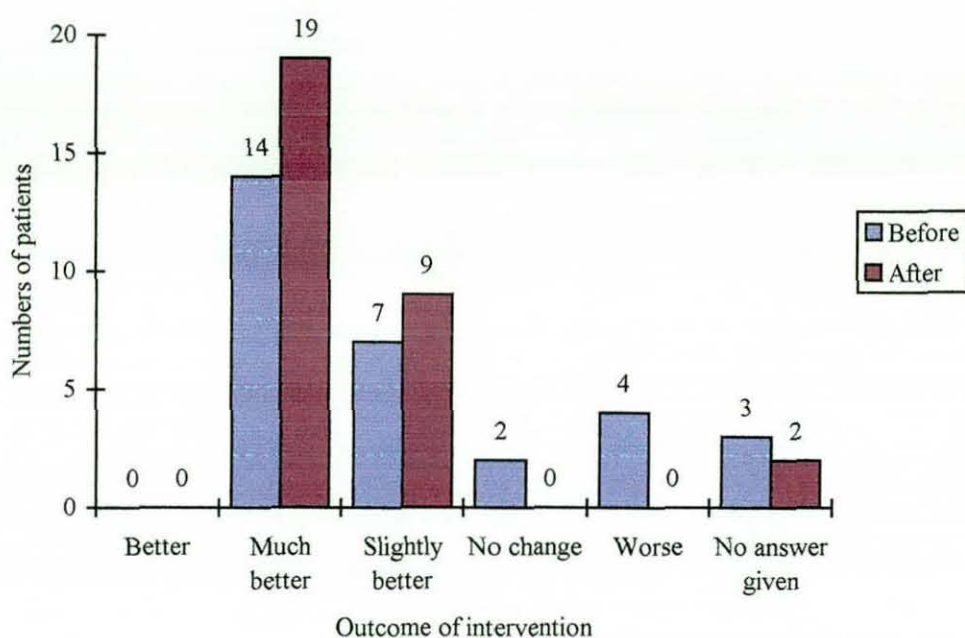


Figure 8.9 Comparison of patients' views of the outcome of their intervention at Site B before and after skill mix changes

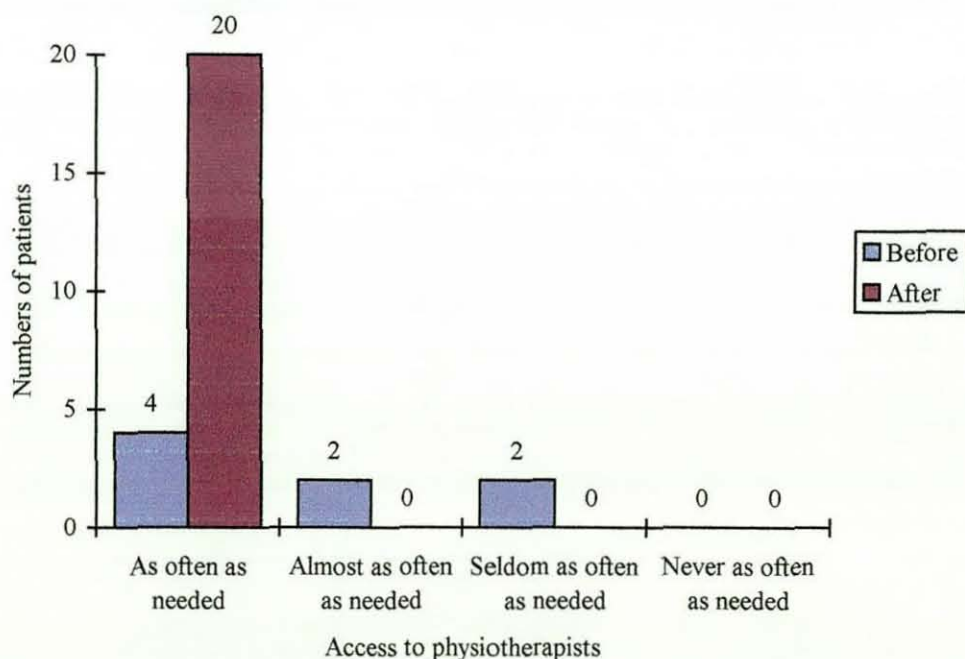


Figure 8.10 Comparison of the patients' views, if mainly treated by an assistant, on access to the physiotherapists at Site B before and after skill mix changes

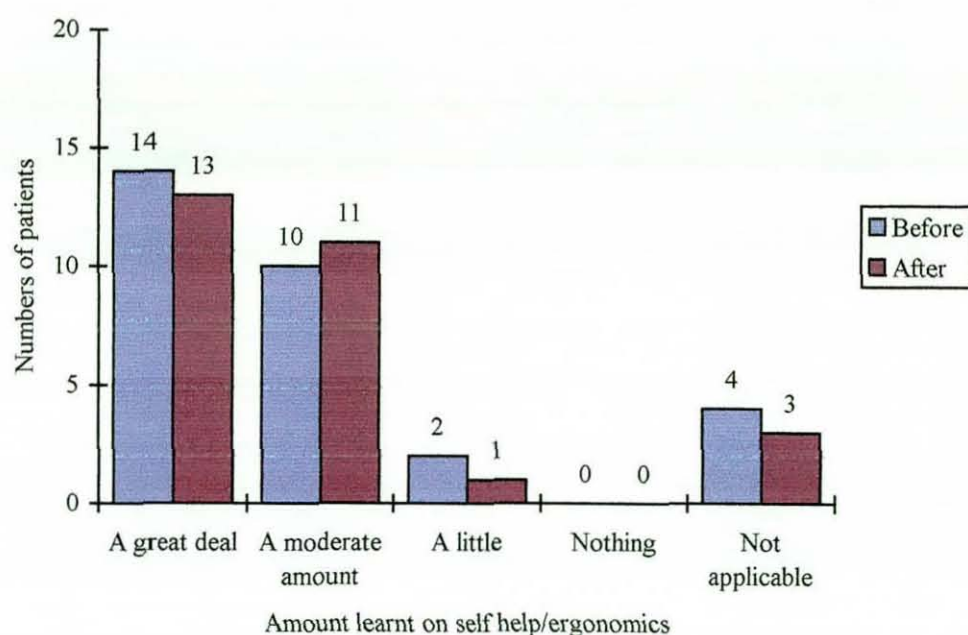


Figure 8.11 Comparison of the before and after views of the patients on the amount they had learnt on self help/ergonomics at the Control Site

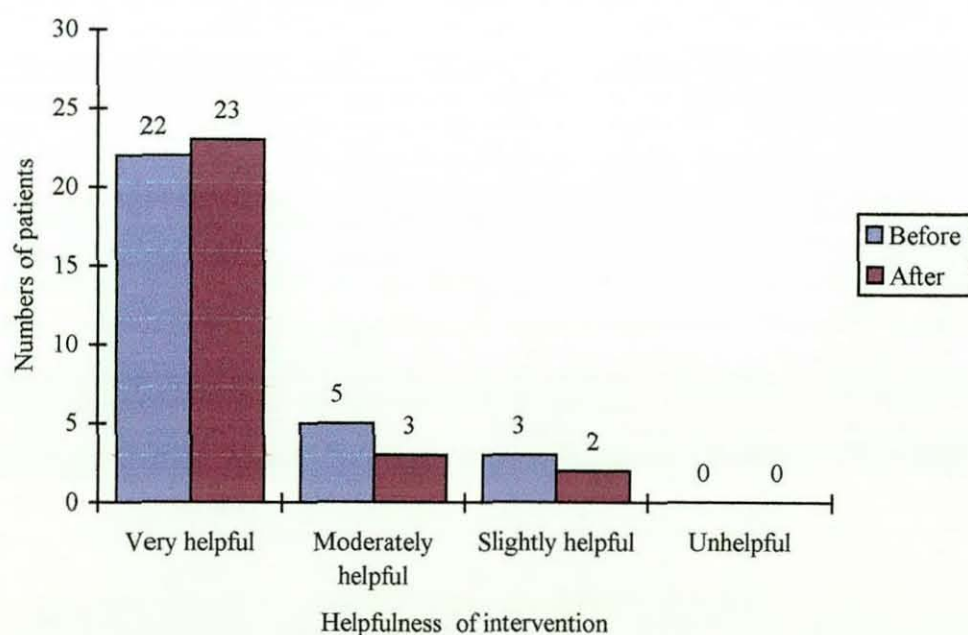


Figure 8.12 The patients' views on the helpfulness of the intervention before and after at the Control Site

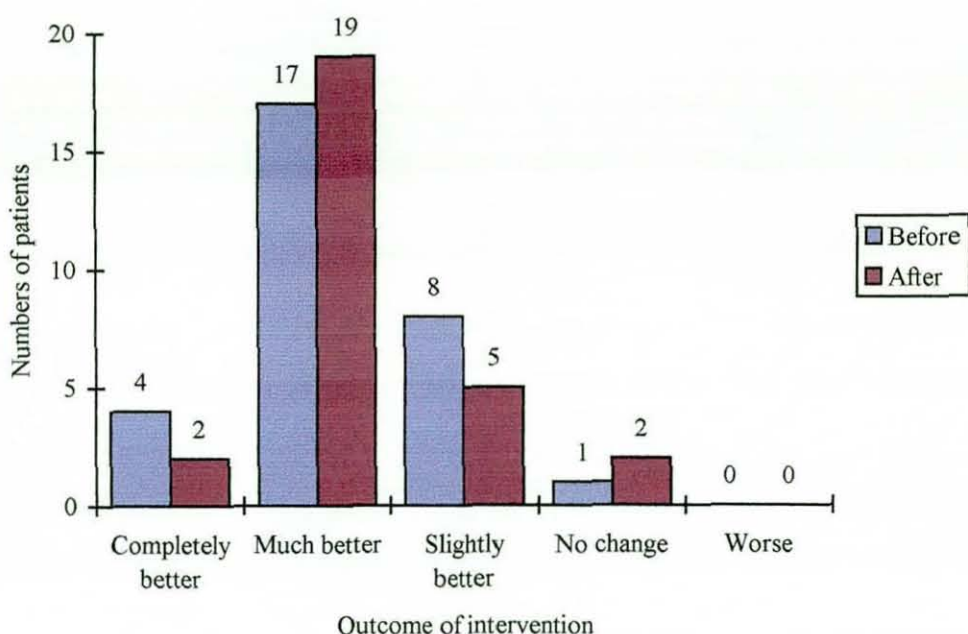


Figure 8.13 The patients' opinions on the outcome of the physiotherapy intervention before and after the study at the Control Site.

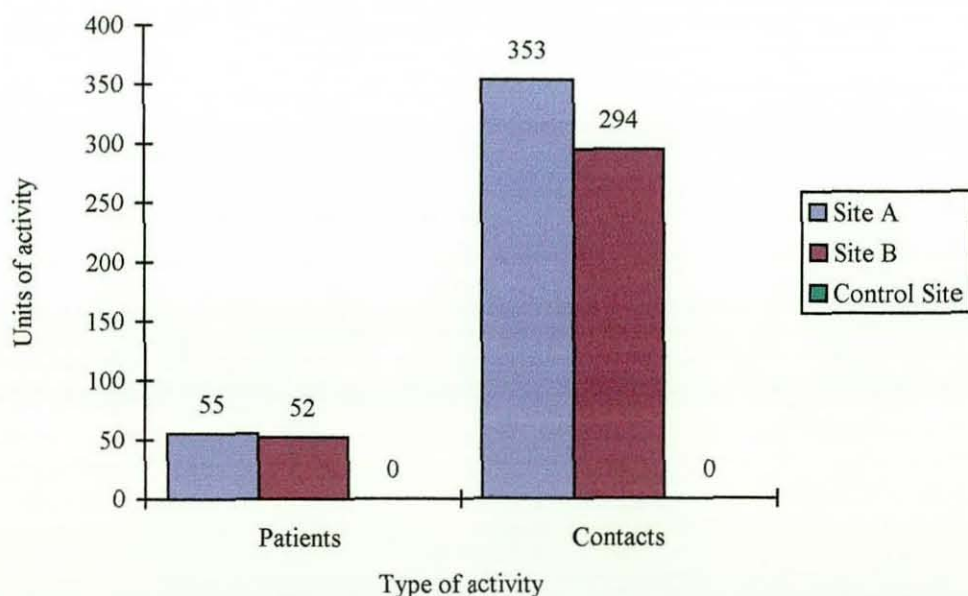


Figure 8.14 The assistants at Sites A and B carried out pre-planned treatments on 55 and 52 patients respectively during the study, compared with none at the Control Site.



#### **8.4.5 Job satisfaction of the assistants**

At Site A the assistant's view of her job showed a similar profile before and after the change to her job. She appeared to be under less pressure after the changes. Her job satisfaction remained high (figure 8.18).

At Site B the assistant's view of her job appeared to have changed. She was under more pressure following the change, finding the job considerably more demanding, with what she perceived as a much larger caseload. Her job satisfaction was, however, also higher (figure 8.19).

At the Control Site the assistant's view of her job was similar before and after. She thought the size of the caseload had increased a little, as had the frustrations. The amount of mental pressure was perceived as less. The actual job satisfaction remained high (figure 8.20).

#### **8.4.6 Interviews with the staff**

At Site A at the initial briefing one of the physiotherapists was openly hostile to the concept of delegation. He had already rung the Chartered Society of Physiotherapy who, he said, had advised him not to join in with the research. The manager, who was a practising physiotherapist, and the other physiotherapists, agreed to join the study. The assistant was keen to join and had already applied to undertake the NVQ level 3.

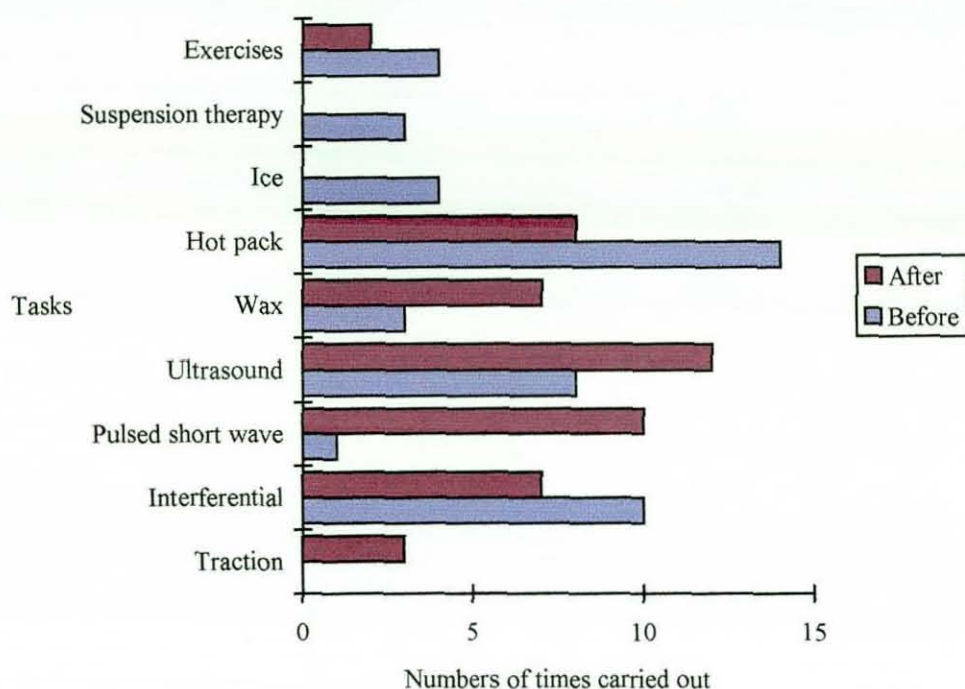


Figure 8.15 Comparison of the type and frequency of tasks carried out by the assistant in a period of one week before and after the skill mix change at Site A.

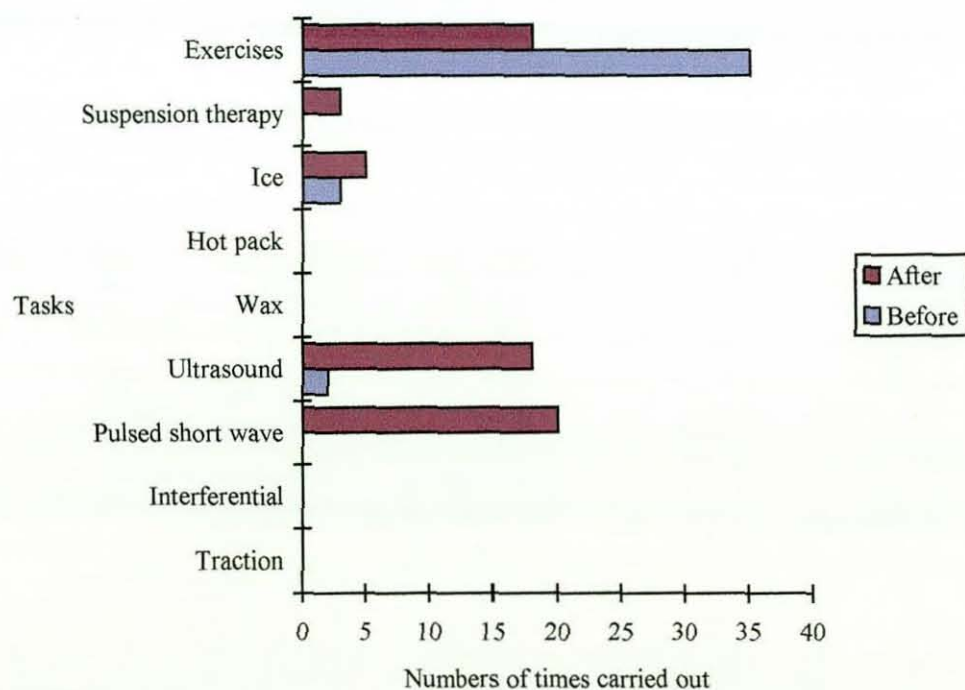


Figure 8.16 Comparison of the type and frequency of tasks carried out during a one-week period by the assistant at Site B before and after the skill mix changes

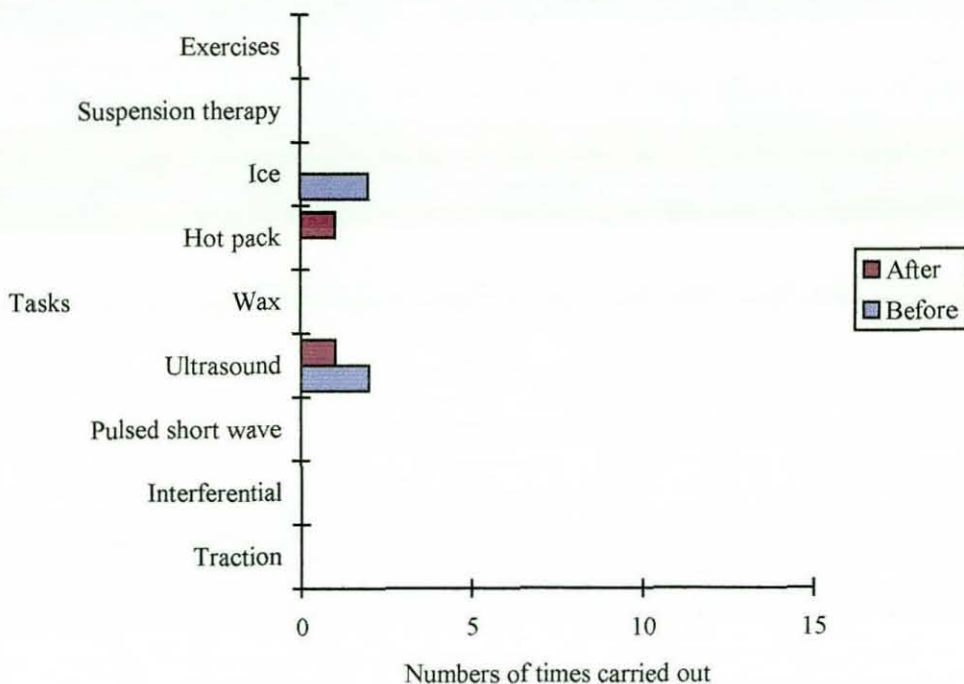


Figure 8.17 Comparison of the type and frequency of task carried out by the assistant at the Control Site before and after the study

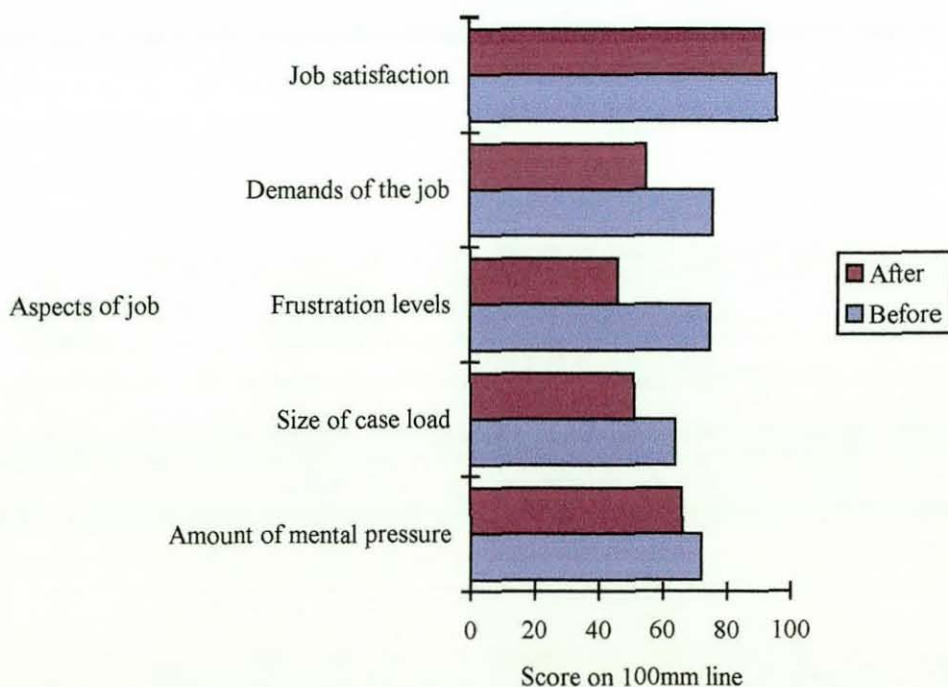


Figure 8.18 The assistant's view of her job before and after skill mix changes at Site A

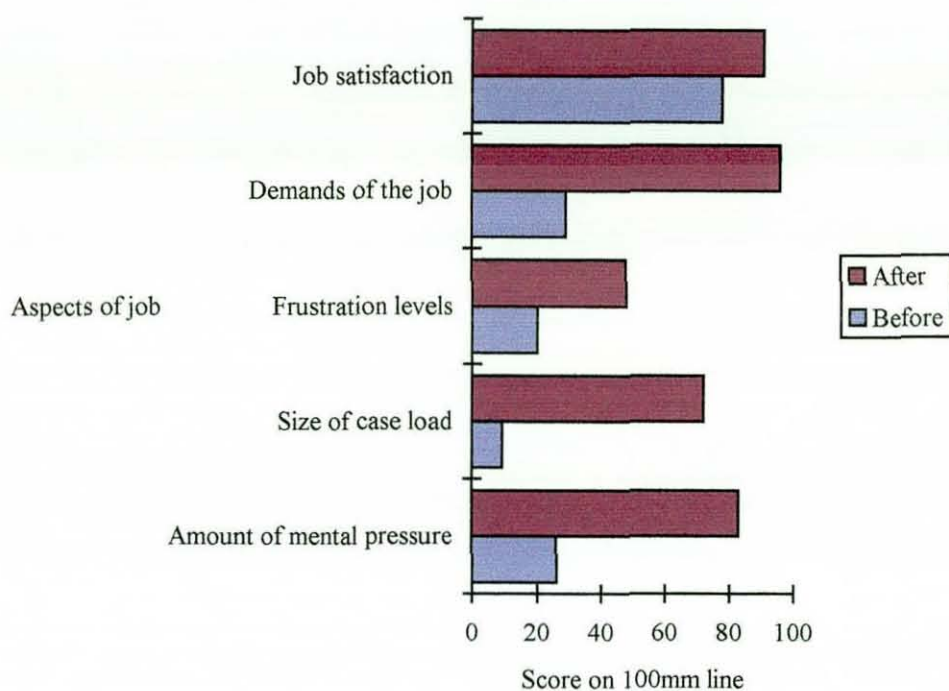


Figure 8.19 Comparison of the assistant's view of her job before and after the skill mix changes at Site B

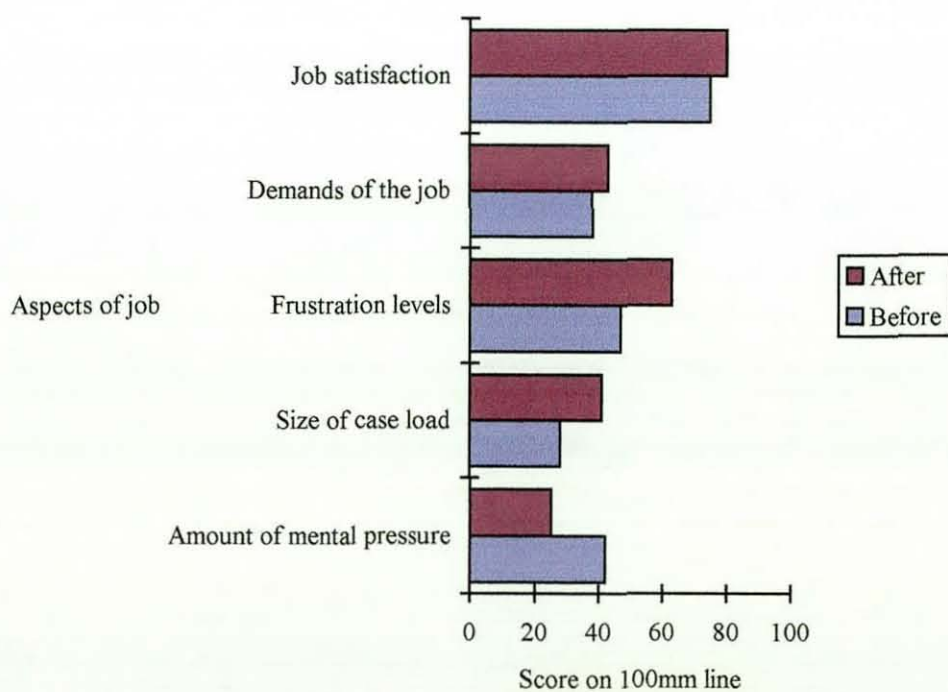


Figure 8.20 Comparison of the assistant's view of her job before and after the study at the Control Site.

Once the study was underway the manager reported further problems with the physiotherapist who had objected to the study. He had been openly sarcastic to the assistant, reducing her to tears. He eventually went off sick on stress related grounds, unconnected with the study according to the manager, and he eventually resigned.

At the final interviews after the three-month study, the manager reported that her job had enlarged to take on responsibility for all therapists, yet she continued with a high clinical workload. She found the arrangement with the assistant valuable to free her at times to do managerial tasks. The assistant enjoyed the increased responsibility of having her own caseload. She reported no problem with communications and found she could get patients re-assessed without difficulty. She valued the helper cards as useful performance aids and had thought that she would lose the cards, index system and diary at the end of the research. She had already approached her manager about replacements and was relieved to be left with the original items.

The staff adopted the new system and were planning to expand the system to include a second assistant.

At Site B the staff in the individual treatment area declined to join the study. They were 12 physiotherapists working with one assistant. They gave various reasons for not participating, one was lack of space. They felt if assistants needed treatment space there would be even less space available. They also mentioned their present problem of lack of available assistant time to carry out clerical and housekeeping tasks. One physiotherapist stated that she liked to work alone and did not want to use an assistant.

In the gymnasium at Site B three physiotherapists worked with one assistant. The gym ran exercise sessions for lower limb conditions. The physiotherapists found that with the



large numbers of patients in classes that they had no time to carry out individual treatments on any of the conditions and welcomed the possibility that the assistant could be trained to carry out the tasks for them in a structured system.

The assistant at Site B was delighted that she could help with the treatments. She felt useful to the team and despite the high workload she did not want to return to the old system at the end of the study. The physiotherapists found the system of delegation useful and it was adopted at the end of the study.

Two years have passed since the study and the system in the gym continues. The physiotherapists in the individual exercise area have now asked for more assistant time and for their area to have a similar system of delegation.

#### **8.4.7 The results at Site C**

At Site C the manager was having difficulty in recruiting physiotherapists and was keen to make maximum use of the assistants. There were two assistants who were to join the study. One worked in the individual treatment area supporting five physiotherapists, the other in the gymnasium with one physiotherapist. The manager intended to employ another assistant to free the assistants to do clinical work.

The manager specialised in inpatient care and did not work amongst the physiotherapists in outpatients. A senior physiotherapist was responsible for the day to day management of the outpatient service. The manager was reluctant to be actively involved, as she was the main witness for the defence in a case where litigation was involved, when as the senior physiotherapist she had left the vicinity where two assistants were treating a patient. The patient had fallen, sustaining fractures. This had happened some years ago in another Health Authority and the court case was pending. This had affected the manager,

who wanted a systematic approach to delegation, but did not want to be actively involved in its implementation.

Both assistants had been employed in the department for some years. Initial skills assessment revealed that the assistant in the gym was actively involved in carrying out electro-therapy tasks already. The physiotherapist would always initiate the treatment and then the assistant would carry on with it. The gym was an open area with no cubicles and always had four or more patients at any one time. Lower limb problems only were treated in the gym, as there were no cubicles to allow the privacy necessary for spinal and shoulder conditions. The assistant in the individual treatment area, where patients were treated on a one to one basis, was used in peripheral support and on rare occasions would be asked to continue with a treatment initiated by the physiotherapist.

The department already gave considerable responsibility to an assistant who carried out all the hydrotherapy single-handed, acting on exercise protocols previously set up. This meant that no physiotherapist was at hand whilst the hydrotherapy was being carried out. The pool was a large bath or tank with only enough room for the assistant and one patient.

An additional assistant was employed to take over the peripheral duties of the assistant in the individual treatment area, to release the assistant to participate in clinical support to two senior physiotherapists.

Delegation was set up at site C using exactly the same method as at the other sites and arrangements were made to collect the same performance measurements of activity before and after the three-month study; new patients and total contacts, patient satisfaction and outcomes, use of helper cards and assistants' mental workload charts. In addition the assistant's diary was analysed and time charts, a form of sequential activity sampling (Kirwan and Ainsworth, 1992) were filled in for the first four weeks of the

study by the physiotherapists in the in the treatment area to assess the amount of supervision given by the physiotherapist for each delegated tasks on a scale 1 to 4. One (Appendix A3.9) was demonstration of task to the assistant followed by observation of the assistant in practice, 4 was verbal or written instructions with no observation and therefore minimal supervision. The assistant's views of her job, as previously described in this chapter were to be obtained using the 100mm analogue scale of different aspects of the job. Activity was not expected to increase in the gym where small groups were continually seen.

The physiotherapists reported that no delegation had been set up due to the sick leave of the gym assistant and the subsequent need to use the extra assistant hours in the gym, leaving the assistant in the department unavailable for clinical duties

### **Evidence of assistant involvement**

Only four helper cards had been used to delegate work to the assistant in the treatment area. None were used in the gym.

The assistant's diary had evidence of some delegation early in the study with nine different appointment slots being used in one week. The assistant had written by the patient's name the treatment that she had carried out, because helper cards were not filled in by the physiotherapists. The treatments carried out by the assistant were the more technical tasks (figure 8.21).

The level of supervision the physiotherapists gave to the assistant measured by the physiotherapist's monitoring chart for the first two weeks of the study was reported as



minimal for most tasks (figure 8.22) but there was some evidence of closer supervision to develop the new skills in the assistant.

### **Interviews with staff**

The manager of the service said that she had not noticed any appreciable increase in activity due to delegation. She had played no active part in the system and could not comment on progress.

The physiotherapist in the gym reported that her assistant, now back from long-term sick leave, was able to carry out all electro-therapy independently for her. She no longer had to set up and start treatments. The assistant was also able to locate the condition to treat by herself; she had developed palpation skills during the training. The physiotherapist did not use the helper cards or the diary, so there was no evidence for the study, other than her verbal report.

The reason given by the physiotherapists for not using the helper cards was that she liked to assess every patient by herself on each visit, and therefore would not write down any treatments, preferring to use verbal instructions only. The assistant did not write down the tasks she carried out. The assistant saw herself as doing the same tasks as before the research, although she no longer needed the physiotherapist to initiate the treatment.

The working practices of the assistant had changed, but there was no co-operation with the research to produce data.

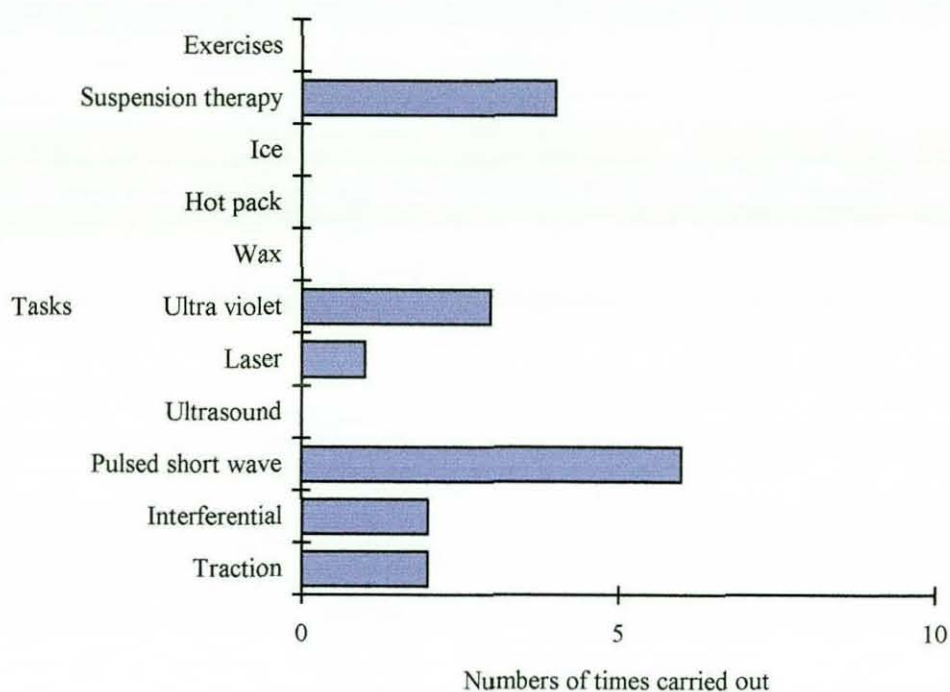


Figure 8.21 The assistant carried out technical tasks during the first week of the research at Site C

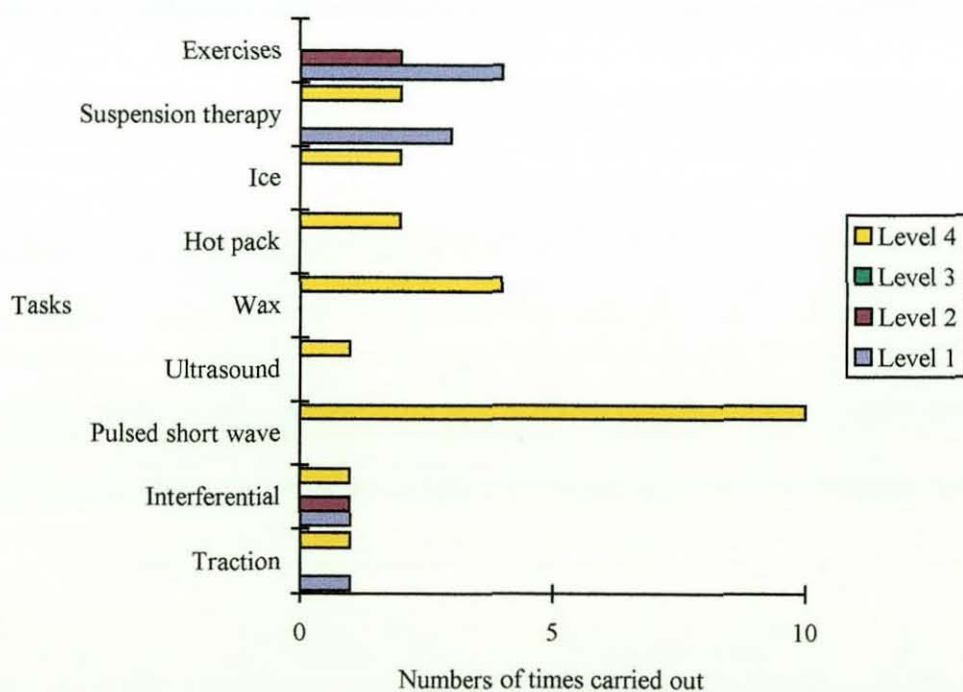


Figure 8.22 The level of supervision given to the assistant was largely minimal

The physiotherapists in the treatment area said that the system had failed for a number of reasons, stating they were not professional reasons, but geographical and managerial. The reasons given are listed below:

1. The extra assistant was not available, leaving the assistant busy in her clerical and housekeeping role.
2. The assistant could not dedicate time to the project due to her additional role as first contact in the department for the ward physiotherapists for clerical and organisational duties.
3. Physiotherapists like the satisfaction of hands-on treatment and do not want to give it up to assistants.
4. Physiotherapists like to re-examine patients on each visit.
5. Another assistant dedicated to the system would have been better; there were too many pulls on the assistant's time.
6. It had worked in the gym owing to the open treatment area. "You could not see what they were doing behind the curtains in the treatment area".
7. The assistant's time was not available to them and therefore planned time could not be guaranteed.

The interview with the assistant in the treatment area found that she did not agree with the points made by the physiotherapists. She was clearly dismayed by the lack of success

and made the following points:

1. She had available time to do clinical work but that the physiotherapists did not use her.
2. The physiotherapists did not "get into the routine of using helper cards".
3. The lack of delegation was "just how they (the physiotherapists) work here".
4. She stated that she was not prepared to comment on why delegation did not work in the way planned and that I would need to "ask the physiotherapists why they did not delegate".
5. She expressed her disappointment in the lack of delegation.

### **Observations of practice at site C**

The assistant in the gym was able to work independently following the setting up of delegation. The fact that the physiotherapist felt that she wanted to assess the patients before treatment began did not mean that the assistant was playing a lesser part. To be able to operate the electro-therapy without supervision and to be able to localise the area accurately was a clear improvement on previous performance. The reluctance to collect data for the study showed a lack of co-operation with the research.

Some of the reasons given by the physiotherapist in the individual treatment area, who proclaimed that the research had failed for reasons that were not professional but were geographical and managerial, were clearly professional.

The professional reasons given were:

1. Physiotherapists did not want to give up hands-on work to assistants, as they liked to do it themselves.
2. Physiotherapists liked to re-assess their patients on each visit.
3. In the gym the assistants can be watched all of the time, in the treatment area "you can not see what they are doing behind the curtains".

The system had been arranged to give the physiotherapists the discretion to assess as often as they felt necessary but to plan the carrying out of certain treatments into the assistant's diary and arrange another patient in their own. These three reasons reveal a personal and professional bias against delegating work to assistants. The third reason shows a lack of trust in the assistant, and a reluctance to begin to build up trust in the assistant's skills.

The planned increase in assistant time did not happen due to the long-term sick leave of one of the assistants. This meant there was less assistant time available. The assistant in the treatment area supported five physiotherapists and had less time to spare than planned, however the assistant clearly felt that the will to delegate was not there on the part of the physiotherapists, and that she did indeed have time to spare.

With a project like this one, the result is a re-allocation of work from professional staff to assistants. Professionals may well be reluctant to accept changes that will result in loss of work, even if the system allows them to keep control of that work. This could result in professionals finding reasons for not co-operating with research projects. At Site C reasons were given that suggest a lack of commitment to delegation, despite initial agreement to participate. In the gym where changes had been accepted, there was a refusal to collect the data for the research. The lack of direct involvement of the manager

meant that the professionals were left to implement delegation without management involvement to facilitate the changes that would allow delegation to proceed, such as replacement of the assistant on sick leave. However, professional and personal bias to delegating clinical tasks to assistants prohibited the delegation of tasks to the assistant and may have done so if dedicated assistant time had been available.

From the data that was collected at the beginning of the study period, it was clear that technical tasks were delegated to the assistant and that the assistant was given instructions and left to carry out the tasks unsupervised. The potential was there but ultimately the physiotherapists chose not to use it.

The need for managerial and professional commitment to delegation is evident from the experience at Site C.

### **The results at Site C revisited**

The manager wanted to attempt to set up delegation in the individual treatment area and was going to appoint a second assistant for the area, to give the team the extra help that they said they needed to have the dedicated assistant time required to plan the work and delegate.

The site was visited again. The same assistant was used, the same senior physiotherapist and two job-share senior physiotherapists new to the study.

The system was set up as with the other field sites and left to run for three months. Assistant activity was to be measured before and after using the one-week chart of tasks carried out, a count of the treatments signed as carried out on the helper cards and the

diary appointments of the assistant, which named the tasks carried out against the patient's name. The staff were to be interviewed at the end of the study.

There was diary evidence of an increasing involvement of the assistant for the first two months (figure 8.23). Delegation then fell off for the last month to 19 contacts during the last week.

The assistant's job changed during the study period from largely clerical and housekeeping to clinical (figure 8.24) from the analysis using the time chart for one week before and after the study. The main referrals to the assistant came from the job-share senior physiotherapists; the senior 1 from the original study delegated very little work (figure 8.25).

The interview with the assistant was more positive. She reported that the job share physiotherapists delegated work to her, but that the original senior physiotherapist still did not. One of the job-share seniors was moved to the wards to cover a sickness, and at this point the rate of delegated work reduced as now only 0.5 of a physiotherapist was using the assistant, compared with the two planned originally. No one took over the place of the absent physiotherapist, despite three other physiotherapists being available in the department. The manager did not manage the changed situation, so the assistant had less to do.

### **Observations at site C revisited**

When Site C was revisited delegation was sustained largely by the job-share senior physiotherapists. The tasks were technical, the majority being electro-therapy. The senior physiotherapist who did not delegate during the first visit, and who had blamed lack of dedicated assistant time, rather than "professional issues", did not delegate during the

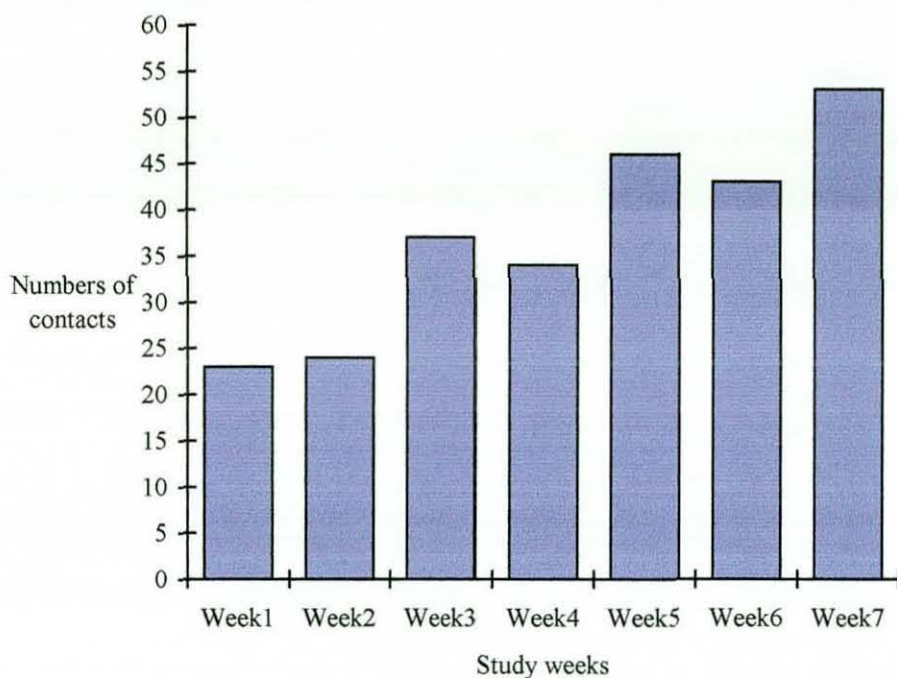


Figure 8.23 The number of treatments planned in the assistant's diary gradually increased

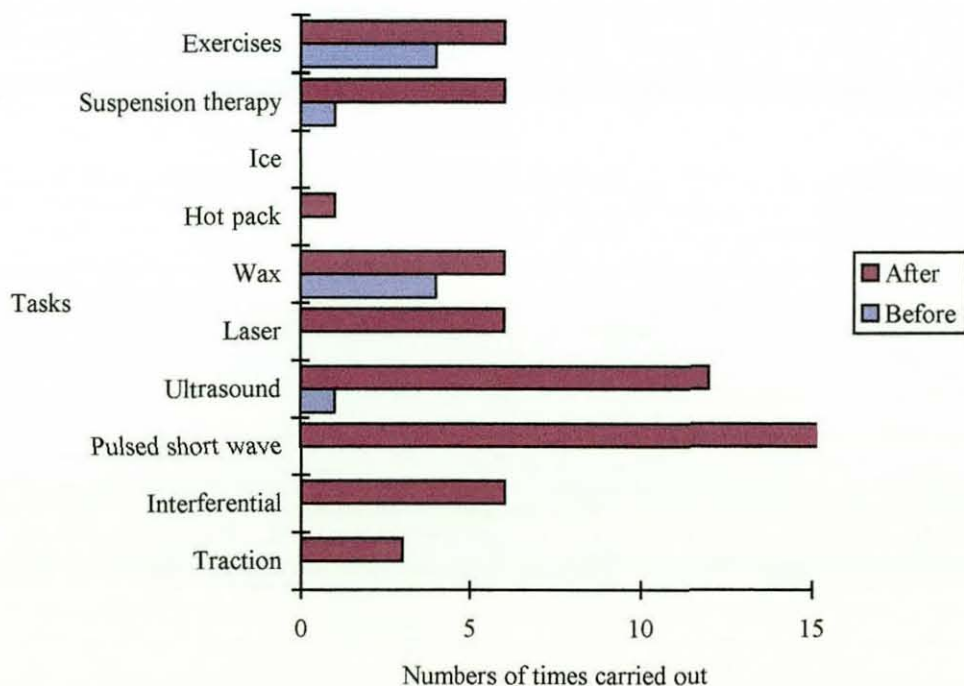


Figure 8.24 The assistant's work changed during the study, becoming more clinical



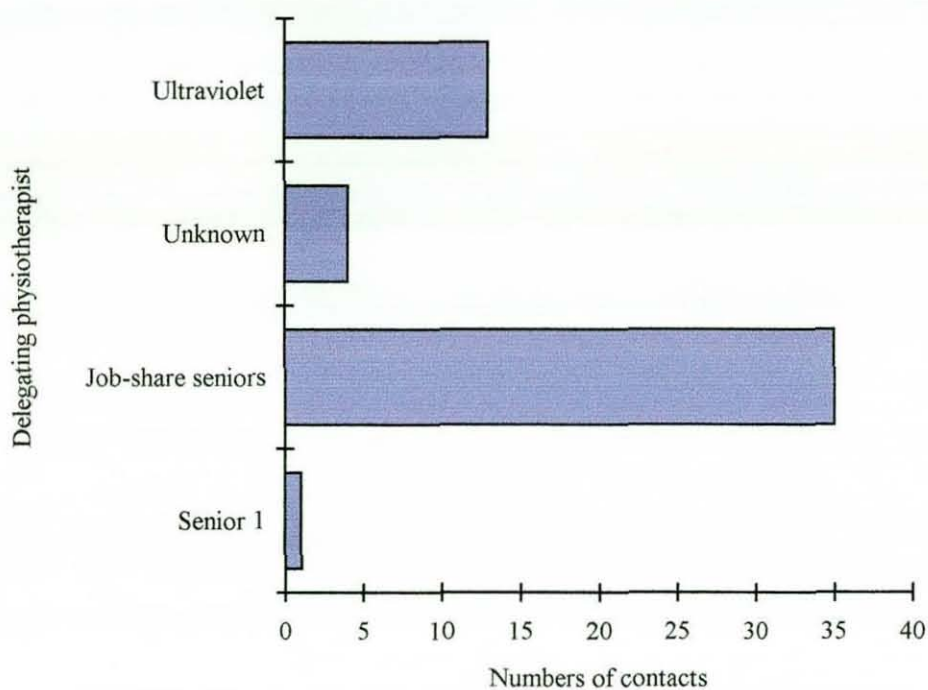


Figure 8.25 Delegation was mainly from the job-share senior physiotherapists, the senior 1 delegated just one patient during a week in the study.

second study when assistant time was available. She had originally made the comment about not being able to see what the assistants were doing behind the curtains.

The experience of the second visit to Site C showed that personal commitment is also necessary for delegation to be successful.

## **8.5 DISCUSSION**

The CD model was used to set up delegation at three sites. There was evidence that delegation had been successfully set up at two of the sites and for a period at the third when re-visited. This qualitative research found a difference in the opinions of physiotherapists to the delegation of clinical tasks to assistants that was overt at one site and covert at another. This affected the level at which delegation could operate at one site; a physiotherapist who had agreed to participate did not delegate to the dedicated assistant time.

Where delegation was implemented the pattern of working of the assistants changed and there was no loss of quality, with patients satisfied with the access to their physiotherapist.

The experience of the research showed that delegation can be systematically set up but that personal, professional and managerial commitment are necessary for delegation to operate successfully.

### **8.5.1 Efficiency and Quality**

Williams (1991) stated:

*"Staffing levels should ensure that each patient:*

*Receives sufficient skilled input in the form of direct treatment, advice or supervised help to achieve a satisfactory result in the minimum time."*

The dilemma in increasing the use of unqualified help is that throughput will increase at the expense of quality, due to the lack of skilled input. The CD model (Saunders, 1996a) was offered as a functional model to allow cost-benefit to be considered but to maintain quality. There was a significant increase in activity per physiotherapist at Site A compared with the Control Site with no change in patient satisfaction or patients' opinions on outcomes. Average attendances did not increase suggesting that patients were reviewed by their physiotherapists at appropriate times. Increased productivity was not expected in the gyms at site B and C but there was evidence that there was an increase in efficiency; at both sites the assistants began to localise treatment areas and carry out the whole treatment. The system used resulted in assistants carrying out treatments with patient satisfaction and opinions of outcomes remaining the same; the skilled input appeared to be satisfactory to achieve the desired timely outcomes.

The workload of the assistant when Site C was revisited had gradually increased as the physiotherapists grew to trust the assistant. By the end of the second month the assistant was treating an average of ten patients a day for the whole time equivalent physiotherapists who delegated. If the senior physiotherapist had also delegated the assistant would have seen on average twenty patients per day, with the increased productivity reducing overall costs.

Measurements showed that the patients felt that access to the physiotherapists was as good after as before the study. The evidence of this research suggests that costs can be reduced by increased utilisation of assistants without affecting quality, attendances or outcomes and that the skills of each physiotherapist can therefore reach more patients.

The need for the ratio of physiotherapist to assistant to reflect the level of delegation was evident from the research. When the ratio increased to 5 physiotherapist to 1 assistant at Site C the physiotherapists felt that they no longer had dedicated assistant time to help them do clinical work. The Control Site had 12 physiotherapists to one assistant, a ratio resulting in the assistant's time being inadequate to carry out even the peripheral support work. The ratio of one physiotherapist to one assistant was found to be insufficient to occupy the assistant fully, generating an average of ten patients per day; if the ratio had doubled, the assistant would have been fully utilised with twenty patients per day. This suggests that for general musculo-skeletal services a ratio of two physiotherapists to one assistant is optimal.

#### **8.5.2 Attitudes and staff opinions**

The difference of opinions on levels of delegation experienced in this study was found when physiotherapists (Saunders, 1995b) were more likely to be concerned about assistants carrying out ultrasound if they came from departments with a high ratio of physiotherapists to assistants.

There were physiotherapists at all sites who were positive about the increased delegation. But at every site there was also opposition. At Site B's individual treatment section there was a group decision not to participate in the research because of lack of space and assistant time; this was reasonable because there were twelve physiotherapists and only one assistant, the assistant was hard pressed to cope with housekeeping duties. At Site C the extra assistant time made available for the study was used to cover the sick leave of one of the assistants, despite this the remaining assistant felt she was available and was under-utilised. Managerial and geographical reasons were claimed to be the cause of lack of delegation although some of the reasons given were professional and personal. On the second attempt at implementation the same senior physiotherapists still did not delegate

when the managerial and geographical reasons had been addressed. This was despite having pledged that she would "if only there was dedicated assistant time". At site A one physiotherapist refused to delegate to assistants and therefore would not join in the study, although his colleagues did.

Managers at all of the Sites were positive about the system. At Site A the manager was actively involved as one of the practising physiotherapists. At Site B and C the managers set up the initial meetings and then withdrew, leaving the teams to participate if they wished. At Site C there was no dynamic managerial intervention so the team members were not replaced when they were removed to cover long term sick leave, leaving either no-one to delegate to or insufficient delegators.

In any system using delegation, the difference between delegation and supervision needs to be understood. The statement, "You can not see what they're doing behind curtains", made by one of the physiotherapists implies that she felt she had to observe the assistant at all times. Delegation has been described by Oates (1993) as the passing of responsibility for carrying out tasks, whilst remaining accountable, and compared with passing down the line like the baton in a relay race. The baton is passed to a trusted team member with the skills to carry out the task, not to the planner of strategy or the organiser of the event. Once competence has been established delegation does not require the direct supervision implied, as trust grows in the team member who should be able to carry out the task as well as the delegator. Constant visual supervision would prevent the delegator from being able to get on with something else and stop delegation being cost effective.

Ultimately the decision to delegate is left with the physiotherapist in any system. It is accepted that assistants carry out treatments in the medical elderly speciality, releasing physiotherapists to carry out more specialised work but this research has found that some

physiotherapists are reluctant to delegate to assistants in outpatients. The findings of this research suggest that delegation should be managed to facilitate partnership working arrangements between physiotherapists and assistants in outpatients.

In today's National Health Service health professionals are expected to work with non-qualified staff without loss of quality (McKenna, 1995). In order for the roles of qualified and non-qualified staff to complement each other, the professional has to recognise that non-qualified staff have attributes of caring too, such as commitment and respect for persons (Kitson, 1987).

Physiotherapists in the pilot study found giving up care to the assistant difficult initially, having been used to contact with their patient on each visit. But they found that the assistants' role complemented theirs, allowing more patients to benefit from their skills. The assistants proved that they could follow the physiotherapists' plans, earning the physiotherapists' trust. The physiotherapists' acceptance that others could care for patients too was essential for the delegation process to operate. Taking steps to develop trust in others to participate in care may be the key to successful delegation in health care.

The research found that professional, managerial and personal commitment were necessary to support the system of delegation. Lack of any of these three components led to the level of delegation being reduced.

### **8.5.3 The assistants' changed role**

The assistants were delegated pre-planned patient treatments. During the studies there was a change in the tasks carried out by the assistants and in the type of responsibility delegated, the assistants carrying out whole tasks and localising the treatment areas. The

communications necessary to sustain delegation resulted in timely assessments for the patients, who reported good access to their physiotherapists. The average attendances did not increase, suggesting timely discharge. Outcomes remained similar at Site A and improved at Site B, implying that the assistants' increased responsibility was done according to plan.

The training investment had been low and largely practical to reflect the responsibility of the task and the continued involvement of the physiotherapist in the partnership. This research showed that a low investment in training was required to begin to develop these skills on-the-job. High investment in training implies that assistants will need greater knowledge than was found necessary in this research; to insist on such training may increase the growing trend towards professionalism in assistants, which may in turn result in dissatisfaction, if the responsibilities do not reflect the extent of the training.

The assistants had their own diary to plan patient appointments into. They were carrying out treatments in partnership with the physiotherapist in a specialised field. The practice of rotating assistants between specialities would not be consistent with the skill acquisition necessary for this level of delegation.

## **8.6 CONCLUSION**

It was found that delegation was successfully set up using the CD model at sites A and B and at Site C once revisited. It was found that personal and professional bias against delegating work to assistants could prevent delegation operating. Management of delegation to sustain the level was found to be necessary when staff changes took place. The success at both the pilot site and the field sites has demonstrated that the CD model can be used to set up and implement delegation and has been found to be cost-effective without loss of quality.

The availability of enough assistant time to support the system is necessary for the level of delegation to result in largely clinical work being carried out by the assistant. The experience at Site C gives some indication of the necessary ratio of physiotherapists to assistant. During the first visit the ratio became 5:1 and the physiotherapists felt they could not rely on the dedicated time of the assistant for clinical work. This resulted in the level of delegation being largely non-clinical. An apparent 2:1 ratio was in effect only a 1:1 ratio because of the lack of involvement of one of the physiotherapists. This ratio did not produce enough work to fully occupy the assistant but if the assistant's workload had doubled she would have had a full list, suggesting that a 2:1 ratio is more appropriate, as was found at the pilot site.

Delegation was successfully set up at all of the field sites using the CD model. The physiotherapists' reaction to the research shows that there is still some professional and personal resistance to delegation. However there was also a positive response to delegating clinical work by physiotherapists, resulting in implementation of delegation systems.



## CHAPTER NINE

### **STRATEGIES FOR IMPROVING DELEGATION: IV) THE FOLLOW-UP TO THE PILOT STUDY**

#### **SUMMARY**

This chapter reports on an audit of the delegation system at the pilot site three years after implementation. The cost-benefits of using assistants to carry out clinical tasks is measured and found to be beneficial in terms of cost and quality. The type of work carried out by the physiotherapists was found to have changed; they concentrated more on decision-making tasks and spinal treatments.

#### **9.1 INTRODUCTION**

The research using the CD model has shown that delegation can be constructed taking into consideration cost-benefit and that the commitment to delegation can be measured with factors identified to improve the system of delegation.

The three elements of the research, of analysing the present skill mix and of using the CD model to examine and implement delegation, took place over three years and used different sites in Trent where the ratio of physiotherapist to assistants was the lowest in the United Kingdom. In all twenty different physiotherapy services were involved. At

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The material in this chapter and Chapter 10 has been published in:

Saunders L. (1998), "Improving the practice of delegation in physiotherapy", *Physiotherapy*, **84**, (5), 207 – 215.

none of those services was delegation set up and organised according to the factors in the CD model prior to the study. Where assistants were carrying out clinical tasks they responded in an *ad hoc* fashion to requests from the physiotherapists. Assistants did not have their work planned. If they were available they might be utilised, if the policy of the group of physiotherapist allowed it. This suggests that, given that delegation can be organised to improve efficiency, managers and physiotherapists were not investing in the delegation process to the level suggested in the CD model. This may be due to a lack of recognition of the potential value of delegation and to the approach being new in outpatient physiotherapy. A contributory factor to lack of delegation may also be that it is easier for physiotherapist to carry out tasks themselves, rather than take the time to build skills in assistants.

Delegation was found in this research to be cost-beneficial, there is therefore a strong argument to suggest that delegation levels should be structured in similar services. It is therefore important to look at the sustained effect of the delegation system. The pilot site was examined three years after the implementation of delegation to measure the benefits to the service in both cost and quality.

## **9.2 METHOD**

At the pilot site, reported on in Chapter 7, delegation was set up to operate at a 1.7:1 ratio of senior physiotherapists to assistants, an audit was carried out of the activity during a six-month period three years after the changes to skill mix were made.

Measurements were taken of the physiotherapy clinical activity in the form of initial assessments of patients and total contacts, outcomes of treatment and patient satisfaction to see if the service had continued to operate at the level set without loss of quality.

Calculations were made of the cost of the assistants' time spent on clinical activity, and similar calculations were made for the equivalent time for the different grades of physiotherapists. An analysis was made on the changes to the physiotherapists' work following the delegation of clinical tasks to assistants by comparing the percentage of contacts that were initial assessments, spinal or non-spinal treatments.

The data was collected from the physiotherapists' and assistants' diaries, where appointments were made for each patient who attended during the six-month period in 1996. Information from the register of patient attendances for the period gave the patients' diagnoses and the physiotherapists' opinions on the outcomes of the care.

Patient satisfaction was tested for the period by surveying 100 patients by using the same patient satisfaction questionnaire as in the pilot study and the results were compared with the results found during the earlier study.

### **9.2.1 Analysis of data**

#### **Assistants' activity**

The number of patient contacts carried out by assistants were calculated from the register and assistants' diaries for the six-month period. The assistants' patient contacts were then calculated as a percentage of all the contacts made in outpatients for the period and compared with the assistants' activity during the six-month period of the pilot study.

### **Physiotherapists' activity**

The percentage of the contacts seen by the physiotherapists that were initial assessments were calculated using information in the physiotherapists' diaries. The percentages of spinal and non-spinal treatments carried out by the physiotherapists were calculated from the register for the period. The data was compared with information in the diaries and register from the six-month period prior to the pilot study.

### **Staffing costs**

Appointments from the assistants' diaries had been arranged in fifteen-minute slots. The total appointments for the six-month period were counted and the time taken calculated in hours of assistant time. This was then priced for the assistant, using the midpoint of the salary. The cost of physiotherapists' salaries for working for the same hours was calculated using the midpoint of the salaries and compared with the assistants' to show the cost-benefit of the delegation of clinical tasks.

### **Outcomes and patient satisfaction**

Physiotherapists had noted the outcomes of the episode of care in the register as "good, fair, poor or advice only". The percentage of good outcomes for categories of conditions was noted and compared with the results found during the pilot study, along with the average number of attendances per case.

The patients' opinions on the helpfulness of the interventions and the outcomes were calculated and compared with the pilot study results using bar graphs.

### **9.3 RESULTS**

The assistants' activity had increased in 1996 and was 45% of the total contacts (figure 9.1). Calculations of the salary costs for the time spent in carrying out these clinical tasks show savings in costs to be 50% for senior 1 physiotherapists (figure 9.2).

The outcomes from both the patients (figures 9.3 and 9.4) and the physiotherapists (figure 9.5) show satisfaction with the results to be as good in 1996 as before. The average treatments per condition were lower (figure 9.6), suggesting that there was no reduction in assessment as a result of the increased delegation to assistants.

The physiotherapists' work changed (figure 9.7); a higher percentage of their work was spent in assessing patients and carrying out spinal treatments. The more senior the physiotherapists, the greater the percentage of time was spent on spinal treatments (figure 9.8).

### **9.4 DISCUSSION**

This audit of the outpatient physiotherapy where delegation was set at 2:1 physiotherapists per assistant shows that the level of activity carried out by the assistants has increased three years after the changes were made. The results suggest that the changes have been cost-beneficial to the service, with no loss of quality either in reduction of patient satisfaction or percentage of good outcomes, or in increased attendances per case.

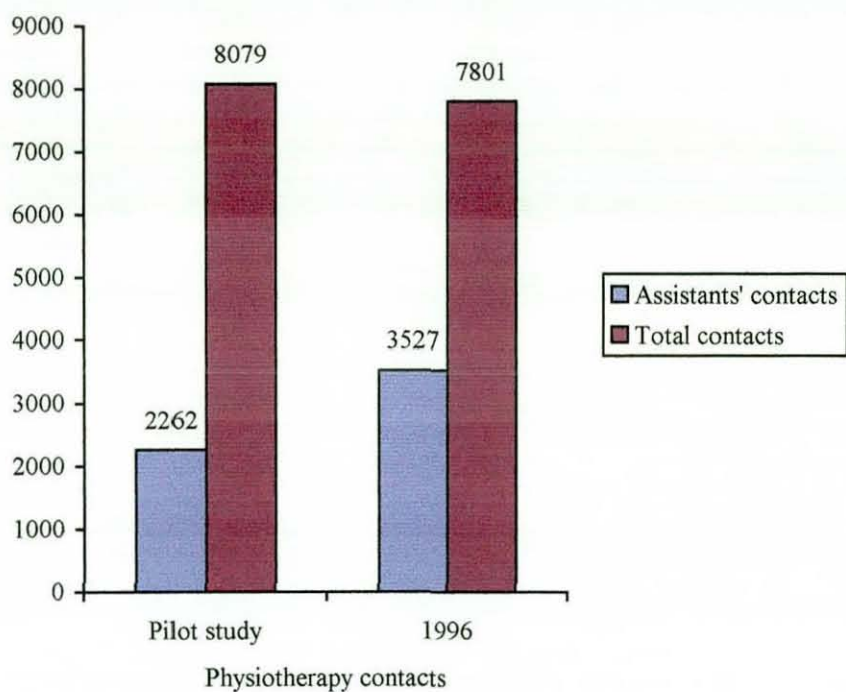


Figure 9.1 The percentage of contacts carried out by the assistants during 1996 had increased

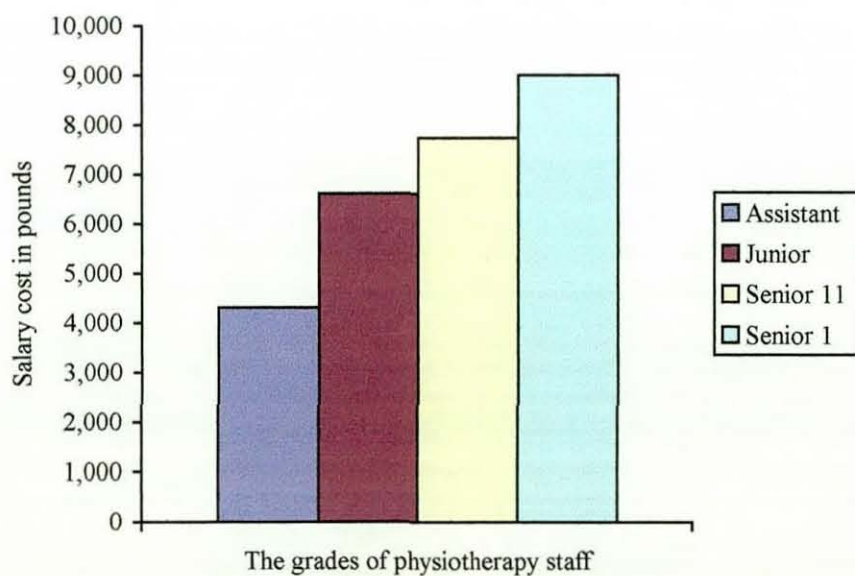


Figure 9.2 The costs of different grades of staff carrying out the activity

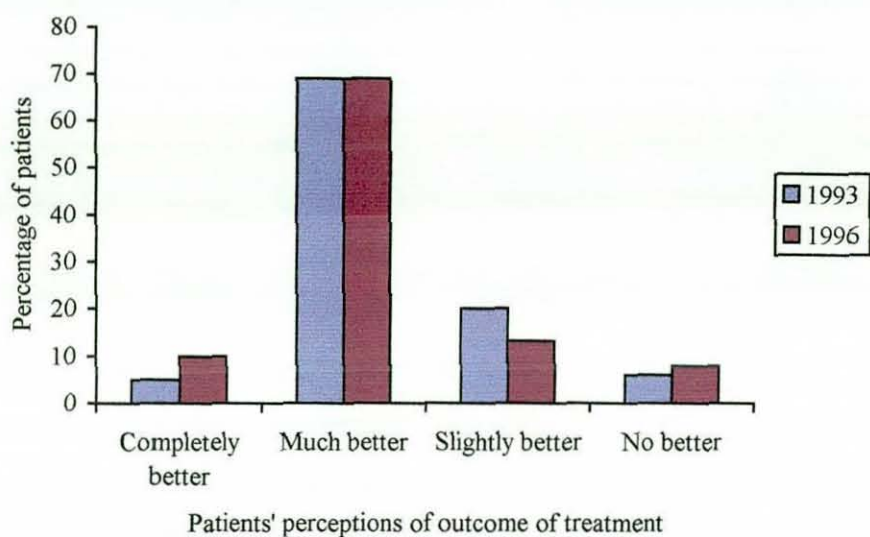


Figure 9.3 The patients' perceptions of outcomes of treatment during the pilot study and three years later.

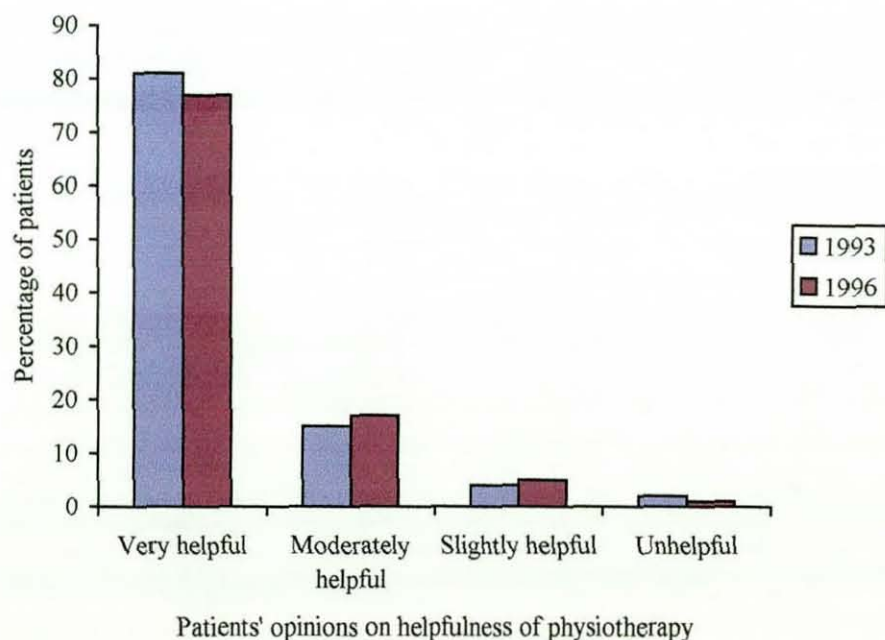


Figure 9.4 The patients' views of the helpfulness of their treatment during the pilot study and three years later

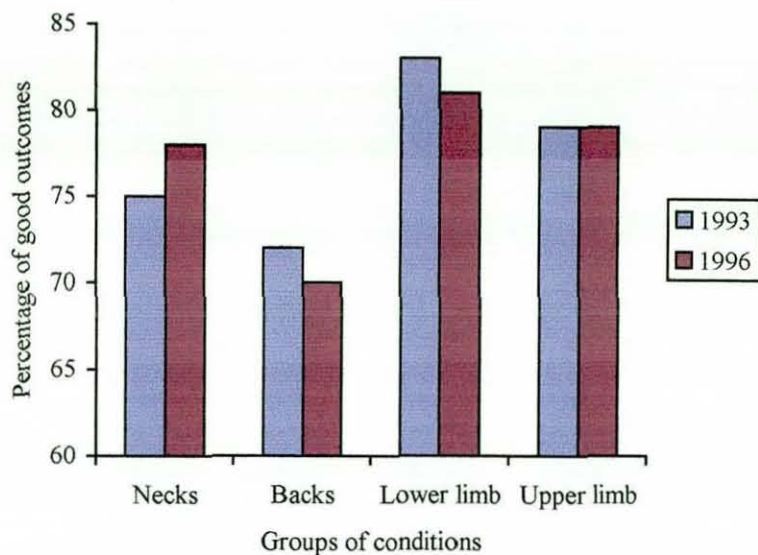


Figure 9.5 The physiotherapists' opinions of the percentage of good outcomes per group during the pilot study and three years later

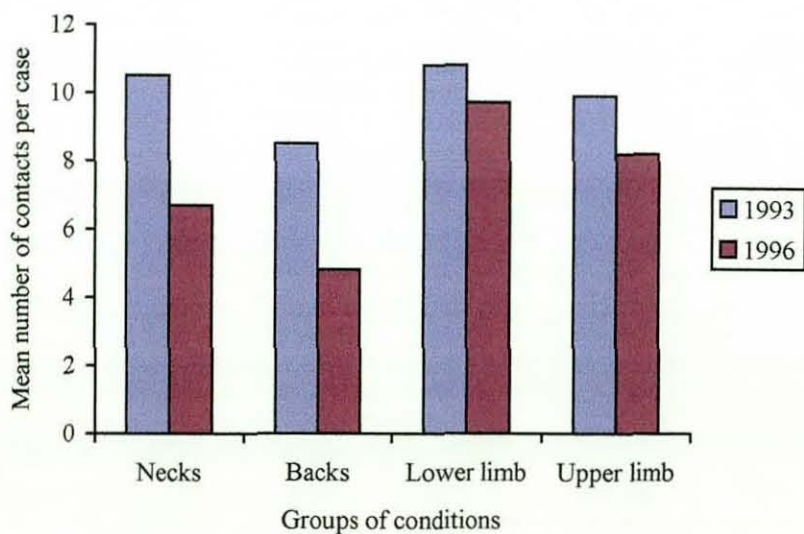


Figure 9.6 The mean number of contacts per case during the pilot study and three years later.



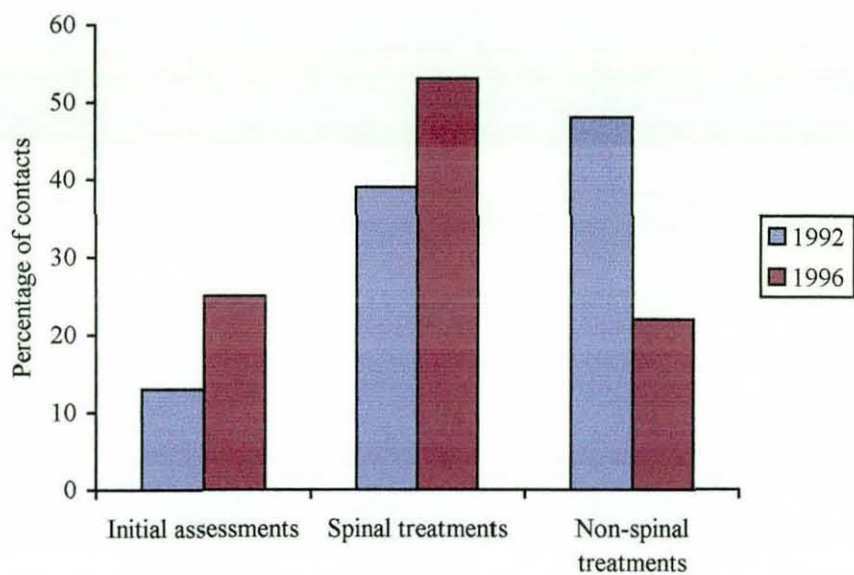


Figure 9.7 The percentage of the physiotherapists' contacts that were initial assessments, spinal and non-spinal treatments.

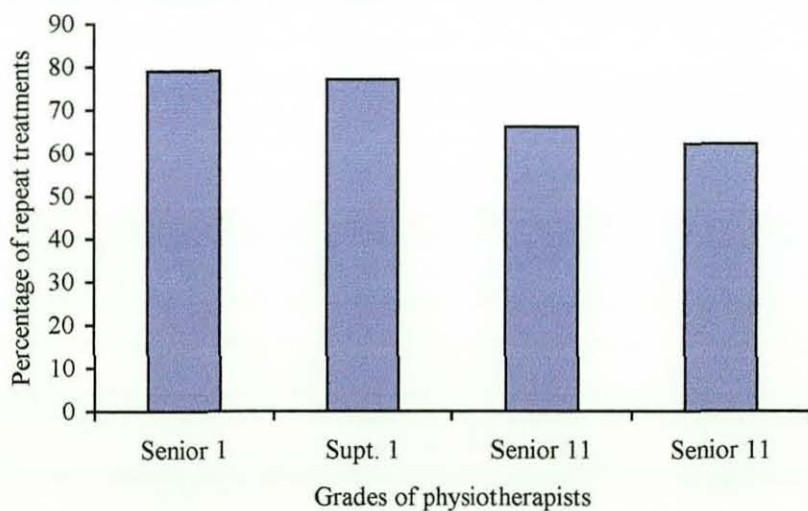


Figure 9.8 The percentage of repeat treatments that were spinal for the different physiotherapists by grade.

The physiotherapists' work changes suggest that an increase has taken place in the tasks that the physiotherapists carry out that need knowledge and high-level skill and that require immediate re-assessment, such as the increase in percentages of initial assessments and spinal treatments found in the audit.

## **9.5 CONCLUSION**

The findings of the audit of six-months of activity at the pilot site three years after the changes were introduced were of a further improvement in the cost-benefit of the service without loss of quality. It was also found that there were changes in the practice of the physiotherapists. These findings are a strong indication that implementation of delegation using the CD model will benefit similar services in the Health Service. This suggests that delegation should be actively managed. Methods of improving delegation using the experience of the research are now offered in Chapter 10 for outpatient physiotherapy services generally.

## CHAPTER 10

### DELEGATION – IMPROVING PRACTICE

#### SUMMARY

The CD model has introduced changes to delegation that were found at audit to be sustained three years following implementation. The experience gained in the research into delegation using the CD model is used to offer detailed information on methods of improving delegation. The theories found successful in the research are offered to make suggestions to facilitate delegation generally for professionals working in similar services. Much of the information is presented in diagrammatic form to help the reader to follow the process. The systematic approach of the CD model is customised to facilitate its application to practice.

#### 10.1 INTRODUCTION

The follow-up audit of the outpatient physiotherapy activity at the pilot site three years after implementation analysed the cost-benefit to the service, and found an improvement in cost-benefit. The clinical activity of the assistants had increased and there had been a change to the physiotherapists' role that increased the proportion of analytical and decision-making tasks. The experience of the research is then used to suggest methods of

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The material in this chapter and Chapter 9 has been published in:

Saunders L. (1998), "Improving delegation in outpatient physiotherapy", *Physiotherapy*, **84**, (5), 207 – 215.

improving delegation by giving managers and physiotherapists tools to help them to set up a system of delegation in their own service.

## **10.2 METHODS FOR IMPROVING DELEGATION**

The CD model put forward systematically factors that were suggested as being required for an efficient system of delegation. For delegation to be successful it was reasoned that management, the profession and the individual physiotherapist needed to be involved and committed to the process. Delegation had to be managed as without available assistant time delegation could not take place, and likewise an available delegator was essential. Professional groups were found, in the research, to make blanket decisions on the level of delegation, justifying decisions on the grounds of "legalities", "dangers", "lack of advice", "lack of knowledge" and "training" which imply that the physiotherapists assumed that they were giving up the whole task up to assistants. Physiotherapists themselves have the discretion to delegate and, bearing in mind that this may be a new process, the physiotherapist as a person will need to build skills in delegation and to understand their own continuing role in the process.

Methods to improve delegation if produced in the form of guidelines for managers, professionals and individuals should help other physiotherapy services to benefit from the research.

### **10.2.1 Managing delegation**

Once decisions are made on the tasks both suitable and cost-beneficial to delegate then skill mix calculations need to be carried out to generate the delegators and delegates for the system. The CD model sets out requirements for training, communications, the working environment and working relationships, all of which managers of services will be

required to set up in preparation for the system. Ultimately delegation must be monitored which involves measuring performance and making adjustments in response to any changes that take place.

Managers will thus need to be able to calculate the appropriate skill mix and dynamically monitor delegation in practice. Accordingly calculating skill mix, setting up and monitoring delegation are explained to facilitate the process.

### **Skill mix calculations**

In order to implement delegation, skill mix calculations need to be made on the basis of how much professional and assistant time is required. An analysis of the proportion of physiotherapy tasks spent that are suitable for delegation, termed routine tasks, as opposed to the unsuitable or non-routine tasks needs to be made, to make an estimate of the assistant time required for the clinical support of the system. Examples are given (table 10.1) of calculations of the physiotherapist to assistant ratio for clinical support. The clerical and housekeeping support, or peripheral support, is in addition to the clinical time; examples (table 10.2) are based on staffing levels observed during the research.

### **Setting up delegation - Using the CD model**

The CD model systematically lists the processes and factors reasoned as necessary to set up delegation to produce an efficient system. It involves the investment in time to analyse suitable tasks, to train staff to carry out the tasks, to formalise communications and to arrange the environment and working practices. Once set up the investment will be repaid if delegation is active. The new system will need to be monitored to make adjustments at times of prolonged staff absence.

Non-routine tasks	Routine tasks	Physio: assistant ratio
90%	10%	8:1
80%	20%	4:1
70%	30%	3:1
60%	40%	2:1
50%	50%	1.5:1
40%	60%	1:1
30%	70%	1:1.5

Table 10.1 Suggested physiotherapist to assistant ratios for given examples of percentages of physiotherapy time spent on routine or non-routine clinical tasks

Physiotherapists	Peripheral support
12	1.5
10	1.25
8	1
6	0.75
4	0.5

Table 10.2 Examples of the assistant time (WTE) required to support groups of physiotherapists

A task analysis of the methods required to assist decision-making in setting the level of delegation is given (figure 10.1). Step by step procedures for setting up delegation are shown (figures 10.2 and 10.3).

## **Training**

For delegation to be worthwhile the investment in training must be low, otherwise it would take too long for delegation to be cost-beneficial. The dynamic role of the physiotherapist in the system allows for the assistant's training to be practically based without the detailed theoretical knowledge and understanding that the physiotherapist requires for the planning and decision-making processes. Examples of hierarchical task analysis of training for the carrying out of electro-therapy techniques and traction are given in tabular form (Appendix A5.1 – A5.6). The communication rules between the physiotherapist, assistant and patient are an integral part of the training HTAs.

## **Monitoring delegation and maintaining the set level**

Once delegation is set up, the partnership arrangement usually sustains the level of delegation, as trust is built as the partnership develops. Activity can be monitored to ensure efficiency is maintained by calculating activity per staff member and average contacts, this implicitly monitors the timely re-assessments of patients. The assistant's diary appointment system will also reveal the assistant's clinical involvement. Physiotherapists can be asked to justify lack of delegation, as personal bias against delegation can result in a more expensive service. Re-training of the physiotherapist in the system may be necessary. Steps for monitoring and maintaining delegation at the set level are given (figure 10.4).

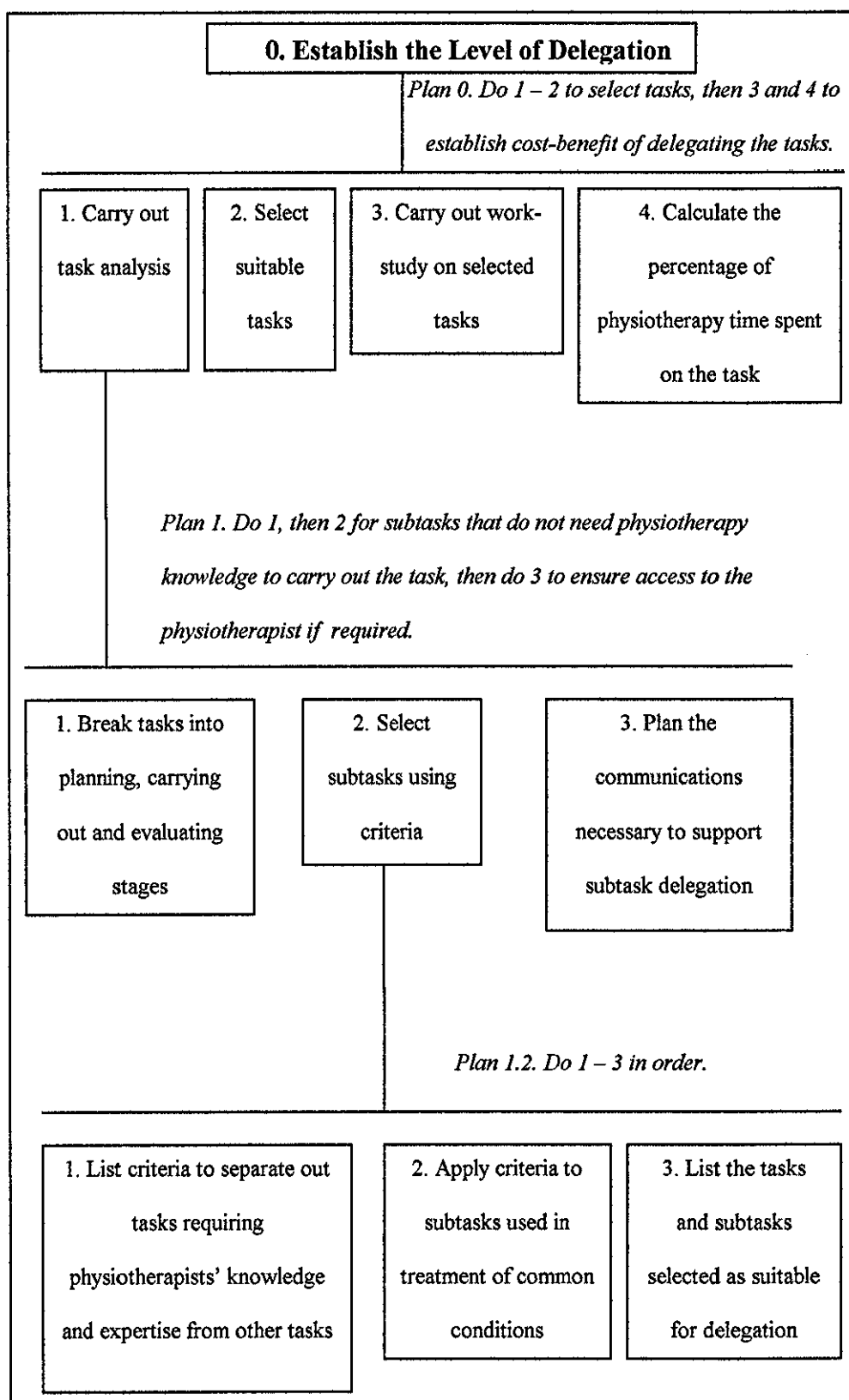


Figure 10.1 The method used to establish the level of delegation set out in hierarchical task analysis format.



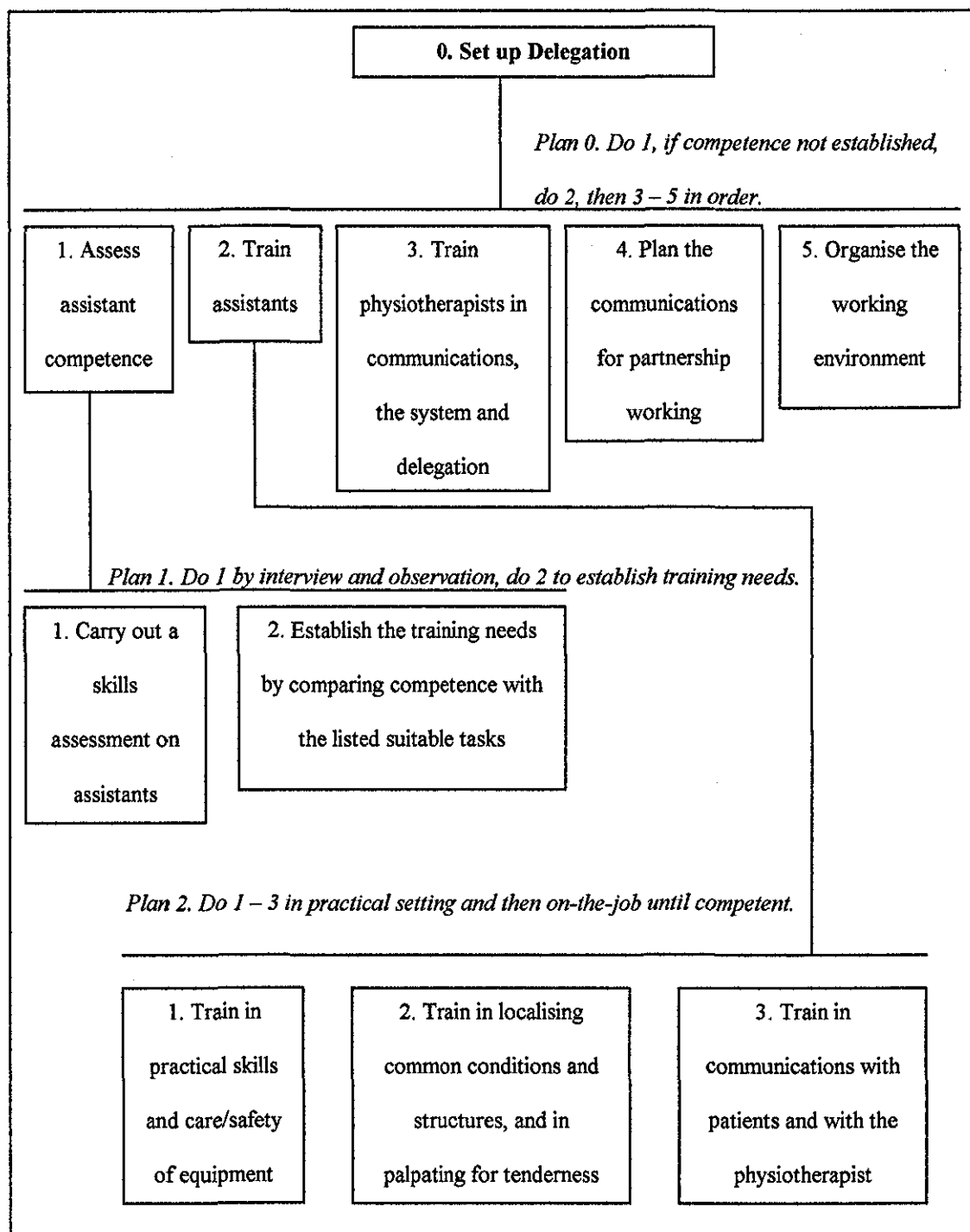


Figure 10.2 The method used to set up delegation described using hierarchical task analysis format.

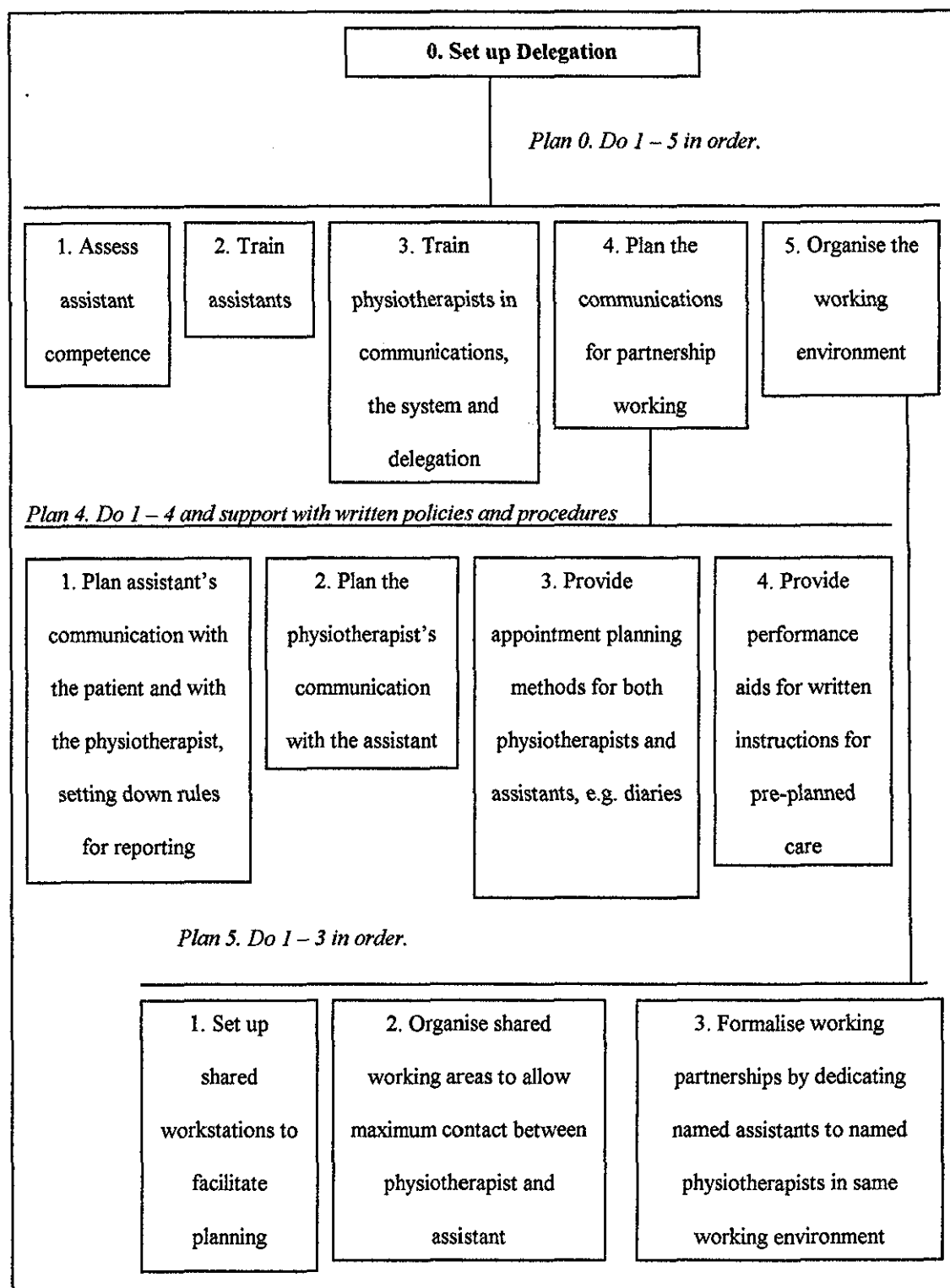


Figure 10.3 Plans to organise training, communications and the environment to support delegation using the hierarchical task analysis format.

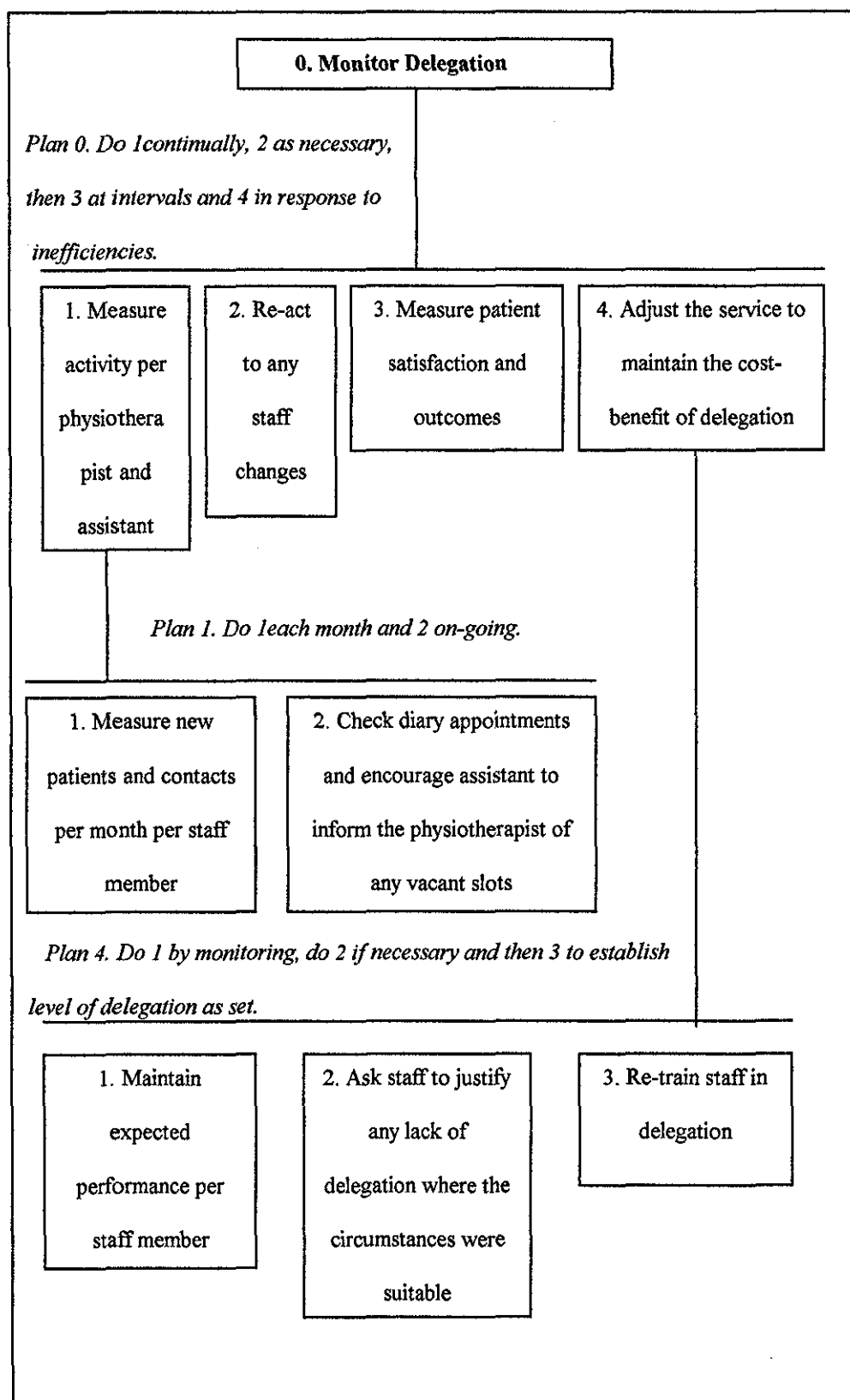


Figure 10.4 The method of monitoring delegation demonstrated using hierarchical task analysis format

### **10.2.2 Dynamic decision-making in delegation**

The delegation of tasks needs to be carried out dynamically, as although the task may be suitable, the patient's condition may not be. If professional considerations are taken in a group on the tasks that are suitable for delegation, then the individual physiotherapist has to make the decision on whether the patient they are dealing with is suitable to delegate to the assistant.

#### **Professional decision-making in delegation**

The survey of physiotherapists on task frequencies and attitudes to delegation found that many of the tasks carried out frequently by physiotherapists were also carried out frequently by some assistants, yet the majority of physiotherapists voiced concerns about assistants carrying out such tasks.

The CD model was designed to create a system where factors used are considered in the context suggested, in order to reduce the risk of utilising assistants and to maintain a quality service.

The CD model suggests a partnership arrangement for physiotherapists and assistants; the knowledge and expertise of the physiotherapist remaining available to the patient, the assistants carrying out frequently used tasks using movement control skills. By applying criteria to subtasks, tasks can be selected as suitable. The condition under which these tasks are carried out is left up to the discretion of the physiotherapist, after a risk assessment. The stages involved in professional decision-making are given (figure 10.5).

## Task Delegation

Tasks are delegated as follows, to trained assistants working in partnership with physiotherapists

1. Select sub-task

2. Analyse skills required to carry out task

Movement control, perceptual or intellectual skill?

Skill-, rule- or knowledge-based behaviour?

3. Apply criteria to subtask

Is there an immediate response?

Are analytical or decision-making skills required?

Is the risk of error high?

Are the consequences of error serious?

Is the task difficult to carry out?

Is the task rarely used?

**NO**

**Any YES – STOP!  
Re-consider**

4. Apply risk assessment

Is patient's condition a common one?

Is the patient's condition stable?

Is the patient emotionally stable?

Is the patient able to co-operate?

**YES**

**Any NO – STOP!  
Re-consider**

**CONSIDER DELEGATION**

Figure 10.5 Professional decision-making for the delegation of tasks to assistants

Judging which tasks or subtasks are suitable for delegation is a decision for both management and the profession. The professional remains accountable for the patient's care and can choose to pass the responsibility for some of that care to an assistant who is competent to carry out the task. Assistants, following practical training, can build skills in frequently carried out tasks on common conditions. If the tasks when applied require no immediate re-examination and therefore no adjustment through knowledge of the underlying condition and effect of the modality, then the task should be considered for suitability to delegate. There are clearly parts of tasks that involve professional decision-making, such as planning and assessing, and other parts that do not. Distinguishing which part of a task could be carried out by an assistant may already be apparent to the professional. A functional analysis of tasks examines the task in a neutral manner in order to see what the task involves irrespective of who carries it out.

Hierarchical task analysis looks in detail at tasks in a sequential and temporal manner, and includes rules to determine actions in given circumstances, lending it as an ideal tool to facilitate delegation. Using this format, the method for selecting suitable tasks is described and the rules under which the tasks are to be carried out are included in the plans (figure 10.6). This method has been used to generate a data base of physiotherapy tasks in the format of the physiotherapist's and physiotherapy assistant's roles in carrying out the task and includes communication rules and "if and then" scenarios (Appendix A6.1 – A6.9).

### **Personal decision-making in delegation**

Delegation in nursing has been described as a skill (Burbach, 1994) which, like any skill, improves with practise. To delegate also adds to the delegator's workload initially (Oates,

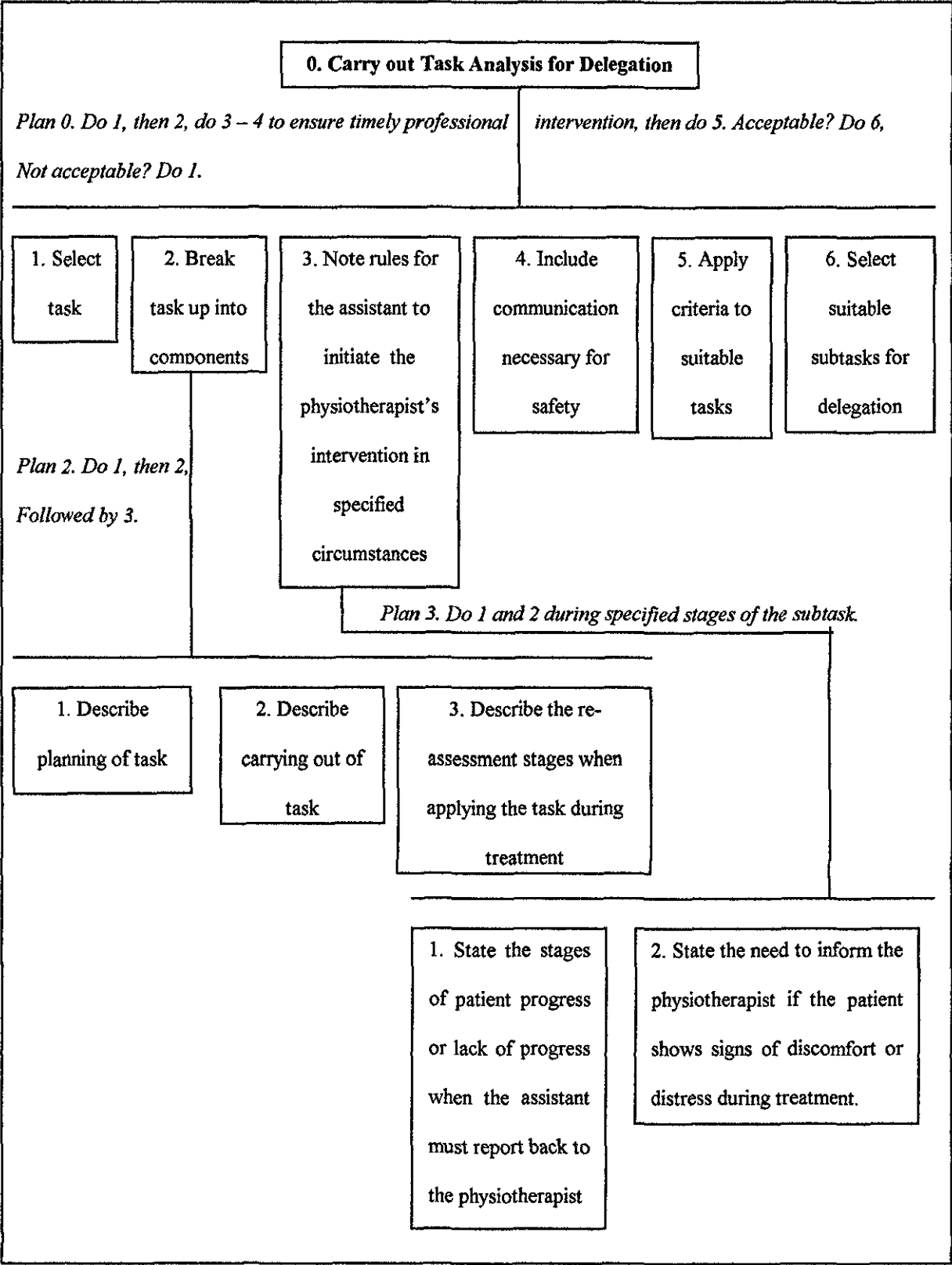


Figure 10.6 Method of applying hierarchical task analysis for delegation of tasks to assistants

1993) as time is involved in performance coaching until competence is reached. This investment in time has to be repaid to make delegation worthwhile. The research in this thesis has found that a limited investment in training and performance coaching has produced a cost-beneficial service.

Becoming skilled at delegation is an aptitude that degree physiotherapists need to have as value-for-money is increasingly demanded in the Health Service.

In delegating, the physiotherapists needs to ensure that the tasks is going to be carried out according to her instructions, and that the assistant can be trusted to perform as expected and to communicate back relevant information. Delegation therefore needs to be structured. The physiotherapist has to remain in control throughout and needs to set the scene to ensure control is retained. A step by step performance aid to assist physiotherapists new to delegation is given (figure 10.7). Teaching aids for physiotherapists to train assistants to the level of delegation suggested are included in the appendix (Appendix A5).

### 10.3 DISCUSSION

Delegation was successfully set up and implemented using the CD model. The level of delegation was found to have been sustained when an audit was carried out three years after implementation at the pilot site. The research at all sites demonstrated that there was no structured system in place to facilitate task delegation with the result that services varied throughout Trent, with at best *ad hoc* delegation and at worst no delegation of clinical tasks at all.



## **Delegate to Assistant**

### **1. Ensure competence of assistant:**

Check that the task is listed as suitable for delegation.  
Check that the assistant is trained.  
Performance coach until competent:-

Demonstrate task on first treatment  
Then observe the assistant carrying out the task.  
After three consecutive correct applications,  
be available if needed.

### **2. Give formal instructions to assistant:**

Give verbal instructions for *ad hoc* delegation  
Give verbal and written instructions for pre-planned delegation. Use performance aids.

### **3. Give explanation to patient:**

Explain to patient their participation in any treatments delegated  
Introduce the patient to the assistant  
Give patients full explanation of what is expected during and after treatment  
Give patient full advice on the condition  
Explain that the assistant is carrying out treatment for you as you determine  
Explain your availability and the means of access to you

### **4. Arrange appointments:**

Arrange appointments in the assistant's diary  
Give appointment card to patient

### **5. Supervise assistant:**

Ensure correct localisation of condition  
Observe treatment of new conditions to ensure localisation  
Observe performance from time to time  
Work in close proximity to assistant

### **6. Ensure communication links are understood:**

State reporting back rules  
State standard questions to ask patient on each occasion

### **7. Inform patient of outcome of episode of care:**

On discharge of patient, inform assistant of the result of the episode of care

Figure 10.7 A step by step performance aid on delegation for physiotherapists

There was support from managers and physiotherapists for introducing a systematic approach to delegation, although there was also some resistance from physiotherapists. As time goes by there is likely to be more pressure to introduce safe systems of delegation, whereby tasks can be delegated with minimal risks. The experience of the physiotherapists and managers in the research has now been included to offer others information to facilitate the process. This chapter has arisen from the research experience to offer a database and tools to facilitate the setting up and operation of the delegation process.

#### **10.4 CONCLUSION**

The factors in the CD model have been explained in a manner that will assist the implementation of new delegation processes for physiotherapy and similar professions, generally. Investment in time to set up delegation will reap benefits in the future, but without this investment delegation may not happen.

To allay the fears of the profession to the increased use of assistants, the system must ensure that quality and outcomes do not deteriorate. Delegation at the set level without the systematic approach used in the CD model may result in loss of quality and inefficiencies due to lack of assessment. The system must allow the physiotherapist to keep control, whilst passing on responsibility for a part of the care to the assistant. The tools in this chapter should help managers to set up new delegation systems that will maintain present levels of quality.

The experience of the research into dynamic delegation has generated the decision-making guidelines for professional and personal decision-making whilst delegating. These can be

used in training physiotherapists and assistants in the delegation process so that those participating understand the process.

Demands in the NHS for greater efficiency is likely to force a greater use of unskilled workers. It is important that any system used is implemented as it was intended or the desired result will not be achieved. The database and tools generated in this chapter are offered to support implementation of delegation using the CD model.

## **CHAPTER ELEVEN**

### **DISCUSSION**

#### **SUMMARY**

The research findings are discussed in this chapter with the implications that the research has for the profession and the organisation. The benefits and weaknesses of the study are discussed, and the areas where further research is required are identified.

#### **11.1 INTRODUCTION**

Research into the tasks that physiotherapists and assistants carry out found that clinical tasks delegated to assistants varied from site to site in similar outpatient physiotherapy departments. The ratio of physiotherapists to assistants has been found to vary between 12:1 to 1.5:1 in Trent. 82% of physiotherapists surveyed said that they would have concerns about delegating a task that was already being carried out by some assistants, the higher the ratio of physiotherapists to assistant, the more strenuous the arguments against delegation were.

A systematic and rational approach to delegation was called for to address this problem for the physiotherapy and other health professions (Saunders, 1996b). The CD model was designed to generate the conditions needed for delegation to be set up to ensure that the investment in training benefited the service in terms of cost-effectiveness and was not at the expense of quality, and that the physiotherapist remained in control through formal communications in a partnership relationship with the assistant.

The CD model in this study was used to analyse current practice of delegation at five sites and to implement delegation at four sites. Its use highlighted some of the problems

that still block successful delegation. It was found that professional groups made decisions on what tasks could be delegated for the whole group and therefore barred individual physiotherapists from using their discretion to delegate. This peer pressure prevented the physiotherapists from delegating and the assistant from developing. It was found that managers did not manage the delegation process; assistants were there to support the physiotherapists, but with minimal organisation this support was usually in the periphery of the treatment area. Some physiotherapists were found to be reluctant to delegate even when the system was set up formally with dedicated assistant time available to them.

The CD model was successfully used to set up delegation at the pilot site and at three field sites. An audit at the pilot site three years after implementation (Saunders, 1998b) found that delegation had continued to operate cost-effectively and that quality and outcomes had maintained at the same satisfactory level. The savings made meant that more patients were seen by each physiotherapist, reducing the cost of care. This has major implications for the physiotherapy and similar professions. It is a means of ensuring that a scarce resource, such as physiotherapy, is spread further by utilising a method of allocation of tasks to staff with the appropriate skills, and it has proved to be both effective and safe. There was, however, covert opposition at one of the research sites to delegating clinical tasks to assistants from a physiotherapist who agreed to participate and then did not do so. This opposition may have been expected from a profession that had previously voiced concerns about such utilisation of assistants. An individual's bias to delegation can only be recorded in this study as a reason for lack of delegation. Ultimately it is the responsibility of the manager to manage their skill mix and any prejudice within their staffing.

## **11.2 OUTCOME OF THE STUDY FOR THE PROFESSION**

### **11.2.1 Summary of key findings**

This research has found:

1. That there was no organisation of delegation in physiotherapy outpatients and as a result there was an inconsistent approach, with wide variations in physiotherapist to assistant ratios and in the tasks that were delegated to assistants.
2. That there was little in the literature on the planning of delegation of tasks that were not managerial; it was alluded to as a concept that was expected.
3. That the Human Science experience of task allocation and job design had developed processes that could transfer to physiotherapy practice.
4. That the CD model was developed as a functional model to construct and monitor delegation systematically and to consider the cost-benefit of delegation.
5. That the CD model analysed delegation in physiotherapy at field sites and implicitly suggested improvements to delegation, having found in all cases that delegation was not planned to consider cost-benefit.
6. That the CD model was successfully used at the pilot site to implement a system of delegation, thereby providing a cost-beneficial service without loss of quality that remained at the level set when measured three years after implementation.
7. That the CD model was successfully used to implement delegation at field sites to result in changes in practice for the physiotherapists and assistants. However there was evidence of personal resistance to delegation at the sites.

8. That the strategy to improve delegation by using the CD model was further developed to facilitate the implementation of delegation by therapists and managers by generating tools in diagrammatic and tabular form.

### **11.2.2 Implications for the physiotherapy profession**

The study has implications for the practice of outpatient physiotherapy as follows:

#### **The role of assistants**

This study has found that assistants can help directly with patient treatments, with little knowledge of the techniques used or the pathology of the patients' condition. As the physiotherapist was always at hand, it was found that the assistants carried out tasks as instructed by the physiotherapist. This changed the role of the assistants to partnership workers, the extra pair of hands the physiotherapists always wanted, from either supporting a team with an *ad hoc* response to assist with clinical work or by working purely in support in the periphery.

Hierarchical task analysis formalised the rules to support the concept of the partnership support worker. Because the physiotherapist's knowledge was always available, the assistant was able to carry out the treatment. The rules stated when and how they must involve the physiotherapist. To have given assistants training to equip them with all the knowledge about the patient's condition, the treatment modality and the reaction to treatment in the tissues, would have taken extensive training and would have made the physiotherapist superfluous.

Using assistants to do jobs in a specialised field means limiting their discretion, however under-pinning knowledge has been found to be unnecessary, as the assistant's role is to help the professional. The trend in the NHS of giving assistants training as the means to

climb the spiral of professionalism may be inappropriate when it has been found that some of the tasks formerly carried out by physiotherapists can be safely carried out by assistants, as a practical movement skill.

The role of the assistant should thus be developed to help the professional to carry out their job and to work under their instruction and supervision. If the professional's work was examined to calculate what proportion could be carried out by assistants working in partnership, there could be a good saving in health care costs. It may be that, as Green (1991) argued, the occupational therapy profession needed fewer trained generic workers but more less-qualified workers with specialised skills who would then be more useful in specialised areas. By increasing the knowledge of assistants there is an increase in status and the beginnings of professionalism, when all the professional needs is someone to follow specific instructions to help them to see more patients.

The issue is: Should the assistant be there to help the physiotherapist to treat more patients, or should the assistant be trained to treat patients independently? A high investment in training would be needed, clearly, for the latter example and on-the-job the pay back from training would be too long; it would be far less trouble to get on and do the task oneself.

### **The training of assistants**

Bailey (1989b) described training as the systematic acquisition of skills, knowledge, and attitudes that will lead to an acceptable level of human performance on a specific activity in a given context. The context in which an assistant carries out a task is as the helper of the professional, the extra pair of hands. This relationship reduces the need for the assistant to have knowledge and increases the need for practical skills.



In the NHS the present official training for assistants is carried out externally in the NVQ system. It involves time away from the job and then testing for competence on-the-job. The time out is considerable and the personal involvement of the assistant to gain the qualification to level 3 is high, said to be equivalent to A levels (CSP, 1996b). The skills gained do not result in the assistants carrying out many of the tasks found suitable for delegation in this study. Furthermore this research found that assistants' involvement in clinical work did not increase whilst undertaking NVQ training. NVQ training away from the job did not change the amount of work the physiotherapists were prepared to delegate to the assistants.

The amount of knowledge required by assistants when carrying out tasks will determine whether training is worthwhile. If the assistant is required to have as much knowledge as the physiotherapist has, but in the limited field she or he is operating in, then the investment in training will be higher than if only practical skill building was required along with limited knowledge. In a single case study of an assistant trained to carry out upper limb work on stroke patients, training involved practical treatment skills but underpinning knowledge was tested (Parry and Vas, 1997). The reading list for the assistant was made up of the most current books used in physiotherapy training. This training was carried out to prepare the assistant for a study where the outcomes of the assistant's treatments will be compared with physiotherapist's. The theoretical training, if not the experience, will be similar to the physiotherapists'. It might have been more interesting if the assistant had been trained purely in practical skills and the comparison with the physiotherapist then made. In-depth knowledge may not be needed if the physiotherapist is available to make assessments and decisions.

To expect assistants to have a full understanding of treatment modalities and their effects in the tissues before carrying out treatments would be a frustration to the assistant if they were not allowed to use that knowledge. It would also be costly in training time and

personal commitment, and result in a situation where physiotherapists were delegating tasks to assistants with the same knowledge levels as themselves, when all that was required was an extra pair of hands to help. Such a situation results in "too many cooks spoiling the broth".

Treatment tasks are carried out on patients with a problem. The problem has to be diagnosed and monitored. To be able to diagnose and assess conditions, assistants would require full training and would be, in fact, physiotherapists. Highly trained assistants cannot work in isolation from qualified staff who need to monitor the patient's condition. It is therefore more cost effective to set up a system that allows the assistant to safely help the physiotherapist. The responsibility to carry out the task is given to the assistant, but responsibility for response to treatment, progression and discharge is left with the physiotherapist.

It is possible that health professionals, to justify their own practice, will insist on high levels of training of assistants carrying out tasks previously owned by the professional. This leads not to skill mix but to increasing professionalisation of the assistant, who eventually will be dissatisfied with being "the extra pair of hands".

This research using the CD model found that with minimal training the assistants became competent in carrying out technical tasks for the physiotherapists. The benefits of the training were quickly reaped in the form of reduced costs of treatment for outcomes and quality that did not deteriorate. There were no reported mishaps. The physiotherapists delegated work to the assistants and worked in partnership with them. This was not found to be the case where assistants at the research sites were undertaking NVQ level 3 training.

### **The training of physiotherapists**

All physiotherapists in the United Kingdom now qualify by degree. With the demands for increased efficiency in the NHS there is a need for student physiotherapists to learn to delegate work to assistants. Students do need to practise the skills required to carry out treatments themselves, but the ability to utilise less skilled staff is also of paramount importance. This training should also address the psychology of passing on the responsibility of carrying out treatments to less skilled staff. Delegation in the CD model is set up so that patients are not abandoned. Training may well reduce some of the professionals' concerns about delegation found in this research.

### **The supervisory role of physiotherapists**

Physiotherapists involved in the implementation of delegation using the CD model were found to be responsible for more patients. The allocation of less skilled work to assistants concentrated the physiotherapists' work in the assessments and treatments that needed their analytical and decision-making skills, but the responsibility for the care of the patient delegated remained theirs, increasing the number of patients in their care. The physiotherapist's role in this study increased in both decision-making and supervisory elements, with a reduced role in the repetitive tasks. This implies that physiotherapists will have a greater supervisory role in the future.

### **Improved cost-benefit of practice**

The salary costs for caring are high with, for example, nursing costs taking 40% of the total health service expenditure (Buchan and Ball, 1992). It is clearly important that skill mix is considered, to give value-for-money. Not to examine current practice would be turning a blind eye to cost-benefit and continuing along the same path, resisting change.

A Department of Health report "Mix and Match" (DoH, 1986) called on managers to give higher priority to achieving best value-for-money by allocating staffing resources more closely related to the needs of patients. But in order to avoid a "hit and miss" situation where different skill mixes are tried out, analysis of tasks to establish suitability for re-allocation followed by a cost-benefit analysis will consider both costs and quality. The role of both the professional and the assistant in the patient's care should then be mapped out, with rules on reporting back and communicating clearly set down.

In nursing some studies have found that non-nursing duties take up the greater percentage of the registered nurse's time (Hamera and O'Connell, 1981, Stillwell and Hawley, 1983, Hamm Vida, 1990) and there are studies that suggest large savings if unqualified staff replace registered nurses (Estaugh and Regan-Donovan, 1990, Hesterly and Robinson, 1990). Yet other studies report that a skill mix of mostly nursing assistants is inefficient due to their inability to "act up" (Herzog, 1985), their limited ability (Helt and Jellinek, 1988) and their unoccupied time (Harper, 1986). The Royal College of Nursing (1992) has reasoned that the increasing numbers of unqualified staff result in qualified nurses spending more time inducting, supervising, teaching and directing. The balance of skill mix needs to ensure that there is enough qualified input to monitor the patient's condition and to impart to the patient information necessary for them to understand their condition and to cope with it. Unqualified staff can undertake task-focused care but do not have the knowledge to tie information together or the authority to take appropriate action. Too high a proportion of unqualified staff would not only result in a loss of quality, but in a lack of appropriate care, if indicators were missed.

There were reduced costs in physiotherapy treatments in the pilot study where the CD model was used to implement delegation, but there was no apparent loss of quality, with no deterioration of outcomes of care as assessed by both the patients and the physiotherapists. This may be due to the factors included in the CD model developing a

comprehensive approach to delegation that includes cost-benefit analysis to examine suitability for delegation, rather than analysing cost-benefit purely after the event.

The costs of physiotherapy treatments at the sites involved in this research would vary greatly if staffing costs were the only consideration. The highest physiotherapist to assistant ratio was 12:1 where the assistant had no time available, not surprisingly to carry out clinical tasks at the level the assistants carried out at the pilot site where the ratio was low at 1.7:1. The need for available assistant time is essential for delegation to operate at all. If the ratio is 4:1 the assistant will have little time to do clinical work.

The cost of training assistants needs to be included in the cost-benefit analysis. A high investment in training will take time to be repaid in clinical activity. That the training is appropriate is a further consideration and should reflect the continuing responsibilities of the professional and the responsibility delegated. We do not need to know how a radio works to turn it on and tune in to a station; neither do we need to know how an ultrasound machine works to operate it to a pre-planned programme.

Using the CD model introduced the concept of the analysis of the repayment of the investment in training and therefore a more analytical approach to training requirements for the skill expected.

### **11.2.3 Suggestions for improving practice**

#### **Training in delegation**

Training in delegation of both students and physiotherapists would improve the attitude of physiotherapists to delegation and increase their supervisory skills. This research found that physiotherapists voiced opinions that indicated a disposition towards delegation, but once in a group they made decisions that were against increasing the level

of delegation and effectively excluded increased assistant involvement. The notion that delegation can be acceptable practice if addressed systematically should be re-enforced in the training given. The experience of this study found that to exclude the training of professionals in delegation would discourage delegation from developing.

### **Management of delegation**

This study suggests that delegation should be actively managed. That the variation in physiotherapist to assistant levels can be from 12:1 to 1.7:1 for similar services found in this study suggests that delegation is not being managed by the managers of the services, themselves professionals. There is a need for guidelines on levels of delegation, to encourage those services with a high ratio of physiotherapist to assistant to make skill mix changes that have been found in this study to be cost-beneficial.

### **Addressing the concerns of the physiotherapists**

At each of the sites visited in this research there was some division of opinions on the level that delegation should be set. Some physiotherapists refused to consider delegation in outpatients and yet in inpatient services physiotherapists delegate patient treatments to assistants, as a study into physiotherapy staffing levels revealed (Stock and Seccombe, 1992a).

The managers involved at the research sites were all open to increasing the level of delegation; the reluctance was from physiotherapists either individually or in groups. Two physiotherapy managers at potential sites when approached refused to participate in the research, as there was no delegation of clinical tasks to assistants in their outpatient departments. There is clearly a division of opinions on the involvement of assistants in clinical care. The fact that all the physiotherapy managers are physiotherapists

themselves is likely to produce a conflict of interests; the physiotherapist's interest is to protect the profession and the manager's interest is to benefit the organisation.

The increased involvement of assistants in clinical work will be seen as a threat to physiotherapists who may be afraid of losing work. This research found that groups of physiotherapists made decisions on the level of delegation and that group members then lost their own discretion on how they could use the assistant. The concerns expressed by physiotherapists in the survey (Saunders, 1995b) in to tasks carried out by physiotherapists and assistants were greater from the group with the highest physiotherapist to assistant ratio; those physiotherapists not used to involving assistants in patient care had the most concerns. The attitude of such groups of physiotherapists against increased delegation could bar delegation from happening without a strong managerial lead.

A positive attitude to delegation was found in physiotherapists at all of the sites involved in the research but at none of the sites was delegation operating at the level suggested in the CD model. At most sites the assistants were in peripheral support and not involved with the team in actual delivery of care. At each site there were also physiotherapists who were negative to delegation, in one case a physiotherapist who pledged that she would have delegated to an assistant if dedicated time was available still did not delegate when the circumstances were changed to provide her with the dedicated assistant time. There will be individual physiotherapists who will refuse to delegate on what they see as a principle.

Physiotherapists concerns about delegation were found in this research to be about quality, but once delegating to the level in the CD model the physiotherapists felt guilty about passing patient care to someone else and initially were concerned that they would lose touch with the patient. Attitudes against delegation may be due to the responsibility

invested in professionals to provide care, hence the feelings of guilt and the fear of loss of control of care. The training of students should involve delegation to help future health professionals to work with assistants.

In reviewing the literature in skill substitution and quality of care McKenna (1995) remarked that one could be forgiven for concluding that managers were interested in costs and not quality, and professionals were interested in quality and not costs. Getting the balance right between numbers of qualified to unqualified staff clearly is a cost and quality issue which will be met with opposition in areas where unqualified staff have not been used before. This is the reason for the need for a scientific and rational approach to delegation, which the CD model provides, to answer the concerns of the profession.

### **11.3 IMPLICATIONS FOR RESEARCH INTO DELEGATION**

This study has introduced the concept of the construction of delegation to the delegation process. It systematically set up and planned delegation in physiotherapy and resulted in changed practice. The CD model introduced the cost-benefit of training into the equation, with a clear link to training and the level of delegation, and it presented a method of calculating the benefit of investing in training. In the study where delegation practice was analysed, the external training that the assistants had undertaken or were presently undertaking was found to have no influence on the level that delegation operated at.

The CD model was a functional model offered to construct a system of delegation. It was not designed to analyse the psychology or the social interactions in delegation. The resistance to delegation encountered in this study and the psychological affect of passing the responsibility for clinical tasks to assistants whilst remaining accountable, need further study.



#### **11.4. BENEFITS AND CRITIQUE OF THE THESIS**

This research has generated a tool that has been found to analyse commitment to delegation and to implement a system of delegation that is cost-beneficial. If implemented it will reduce the cost of care whilst maintaining the quality of the service, and therefore it will benefit patients by increasing the numbers of patients that can be seen for the cost of the service. However the research found that there is some resistance to delegation in physiotherapy services. Despite the systematic and rational approach used, some physiotherapists still would not delegate. There was also found a need for managers to monitor the delegation system to ensure that delegation is sustained as intended. The CD model found that there is a need for commitment from the profession, the individual professional and management for delegation to be successful. Any one of these three factors, if missing, may result in a failure of the system.

The weakness of the study was in the small numbers of research sites used to implement delegation. The resistance to increasing the use of assistants in the profession was high and resulted in reluctance to participate. This was found to be the case encountered when individuals were asked to participate at the sites. The research was carried out largely in Trent Regional Health Authority where the researcher worked. No site was visited twice and twenty sites in all participated in the study.

The research took place in organisations and therefore was organisational research. Bryman (1995, page 2) points out that a weakness of organisational research is that access has to be granted by the organisation for the research with their employees to take place. Negotiations with the extra layer in order to access individuals to participate in research can cause problems particularly if the nature of the research is considered sensitive. It may be that those in favour of the research will participate and those against will not. This study clearly could only succeed where participants were willing to delegate.

Bryman (1995, page 30) describes action research in organisations as a researcher, in conjunction with members of an organisation, dealing with a problem that is recognised as such by both parties. The researcher offers possible solutions to the problem and this is then actively tried out and the impact of implementation is observed. It is the nature of the relationship of the researcher with their subjects that Bryman suggests gives action research its distinct design. If there is a conflict of interests between management and professionals involved in a sensitive issue this may result in reluctant participation, if the subjects feel they have been "sent". In this study the managers at the field sites agreed with the researcher that there was a problem in delegation to assistants in physiotherapy. They suggested staff that would be available to participate in the study; sometimes this involved all or most of their staff in outpatients, as staff numbers ranged from 2 to 12. The staff agreed to participate but yet may either have been biased by the manager's involvement or have been reluctant participants. In practice a range of different grades and levels of experience of staff were interviewed in the study, and different views were expressed either openly or covertly.

The presentation of the CD model in this thesis offers a practical approach to delegation that is new. Delegation can now be reasoned and planned, with consideration of savings in costs, following the trade off from the training necessary for carrying out tasks, rather than the extensive training to give the knowledge for planning and decision-making. The availability of the physiotherapists provides the higher level skills, whilst the assistant becomes the extra pair of hands with the ability to carry out treatments according to the physiotherapist's plan. The benefits of the CD model are that delegation is organised to provide the level of skill for the service being provided. As assistant time is available for the physiotherapist, the structure is in place to allow delegation to happen. Delegation is supported using factors in the model. There is therefore the potential for more patients to be seen for the available resources.

#### **11.4.1 The role of reliability and validity in the development of the research**

Where research instruments are developed in the course of a research project, it is necessary to demonstrate the extent to which the data collected is both reliable and valid. Otherwise, generalisation from the research findings is unjustified. However, as with many applied research projects, it is often difficult to demonstrate reliability and validity. This section will review the extent to which this has been done with respect to the present research.

Within the present thesis the concepts of reliability and validity have different implications for the different aspects being measured. In particular, these concepts may be seen to apply to (i) the development and use of the CD model, (ii) the development of HTAs and (iii) the assessment component derived from questionnaires and interviews. Each of these issues will now be discussed in turn. Improvements to the research tool will then be considered.

#### **Reliability and validity with respect to the CD model**

The CD model was designed to provide a normative explanation of delegation in order to establish a basis for generating the sorts of issues that would need to be examined in surveys and interviews. A normative model may not need to be true in the sense that it must accurately reflect how a set of decisions is arrived at, provided it facilitates the collection of information in a consistent and useful manner. However for it to be most

useful, it should reflect how such decisions might be made, i.e. provide *construct validity*. The literature review showed little indication of how delegation decisions are arrived at and, therefore, offered little to guide this construct validity.

The CD model was developed to provide a rational basis for delegation in terms of a cost-benefit analysis applied to the act of delegation. Thus, the *rational* supervisor would judge the benefits that might be obtained from a delegation against the costs that would need to be invested to achieve the delegation. This model is explicit and clearly excludes things that supervisors may argue are important, for example, issues of professional standards that might also influence whether or not a delegation is arranged. Therefore, as information is gained about how delegation is carried out in a reality it may be beneficial to refine this model to direct further investigation.

While further effort would be justified in establishing which aspect of delegation ought to be considered within a delegation model, caution must be exercised in determining how this should be done. There is a major problem concerning the perceived political nature of this issue. While the current research has been undertaken with a view to examine the potential for delegation, it is clear that some physiotherapists oppose such delegation in principle because they feel it will impair the quality of care. This is refuted because the CD model takes account of whether the assistant would be carrying out delegated duties to an acceptable standard, assesses the costs of any training necessary to bring the assistant's performance up to standard and also assesses the costs involved in monitoring the assistant's performance. In this way, the standards of care and treatment are protected.

### **Reliability and validity with respect to the development of HTAs**

The issues of reliability and validity in task analysis are contentious (Patrick, 1992).

This is of concern where task analysis is used to represent a general statement about certain tasks. In the development of National Vocational Qualifications for example, the tasks that are examined must be universally acceptable to the population of users. In the present research, however, task analysis was used as a means by which individual physiotherapy supervisors could express the task they considered delegating. Once delegation has been decided, the analysis provides a clear statement of the conditions under which the task could be carried out. This would clearly state the extent of the autonomy given to the assistant and specify how the physiotherapist must supervise and monitor in order to ensure that standards are maintained. In this respect, it was of no concern that different supervisors had different preferences for conducting treatments, but they needed to show the methods adopted were safe and acceptable. It is quite possible for two task analyses to set out different procedures in detail but for each to represent a safe and acceptable method. Therefore they might appear unreliable in that they varied between supervisors, but they may still be valid in that they describe a suitable method of treatment. It can be argued that steps should be taken to ensure that the treatment method adopted by any supervisor is safe and effective. In this sense it should be recommended that any task analysis to support the CD model is checked by a colleague to ensure that it represents a set of procedures that do not offend good practice. Moreover there remains considerable scope for examining the manner in which this aspect of supervision is managed.

### **Reliability and validity with respect to questionnaires and interviews**

An important part of this thesis was eliciting comments from physiotherapists concerning their procedures for considering delegation. The questioning was guided by use of the CD model, which has been justified in terms of construct validity, as detailed in chapter 5 (pages 114-120). A concluding question enquired of the interviewees whether they considered any additional issues on delegation should be included.

The issues of reliability and validity can, in principle, be applied to the responses obtained from interviews and questionnaires. Reliability would imply that the answers given would be given consistently and not be subject to variations regarding mood or varying circumstances. Validity would reflect the extent to which the answers given reflected the truth. The use of the CD model, it is argued, promotes construct validity and emphasises reliability.

There remains, however, the issue of whether the responses obtained through interviews and questionnaires were reliable and valid. Most questions asked in this research were categorical and did not involve opinion, for example they sought evidence on whether physiotherapists had dedicated assistant time to delegate to, and whether there was a list of clinical tasks that the assistant was competent to carry out. Therefore, the question of empirically demonstrating reliability and validity of such questions was not pursued. For other questions, for example whether the physiotherapists were satisfied with current levels of delegation, or whether the assistants were satisfied with their present clinical workload, the issues of reliability and validity might profitably be pursued. However, this

was not done because the sample was limited in this exploratory project, although consensus of opinion was demonstrated.

### **Reliability and validity in future research using the CD model**

Following assessment of how reliability and validity was handled in this research there are ways in which these factors could be more effectively assured. The main focus for these improvements should be directed towards empirically establishing that the responses obtained during the questionnaires and interviews are valid and reliable. It has already been argued that, as a normative model, the CD model does not warrant empirical validation. So, improvement to the CD model might rest with modifying some of its content through further discussion with physiotherapy professionals. Equally, the task analyses do not need validating in a general way because task analysis is used as a means of physiotherapists expressing their tasks prior to considering delegation. The necessary improvement here is to require any physiotherapist using task analysis, to confirm their account of the task by checking with a qualified colleague to ensure that the procedures specified were safe and acceptable.

Attention should be directed towards demonstrating reliability and validity of the questionnaires and interviews. Firstly, interviews and questionnaires used in the research on analysing current delegation would be subject to more extensive piloting in order to capture the views of a representative sample of the profession, to ensure that the questions had face and content validity. The same sample would be re-tested at a later

date and their answers correlated in a test-retest analysis for the reliability of the interviews and questionnaires.

Secondly, for the full investigation, the sample used in the research should be expanded to validate the research for the physiotherapy profession. This would examine practice in a greater number of sites, with consistent results predicting a further means of checking for validity (Meister, 1990). A stratified sample could be used to ensure that different types of sites were visited, for example to include teaching hospitals, district general hospitals, community hospitals and clinics and General Practice. Systematic observation of practice looking for consistency of methods used from the model would be used to measure reliability. Two independent assessors would be used, with the independent notes taken of observations compared afterwards for consistency (Sommer and Sommer, 1986). To validate content, the observations of working practice would be recorded and checked against observations from different working teams and from other sites.

Inter-rater reliability would be tested by getting two independent observers to make notes of the practice of the implementation of delegation to be observed. Comparison of the notes both for quantity of observations and actual items observed, e.g. verbal communication, carrying out of task, diary planning, would be made and tested for consistency. Intra-rater reliability would be tested by comparing the observations made of a team by the researcher, then repeating the observation of practice by the same team operating a similar session, and comparing the results for consistency.



## **11. 5 IMPLICATIONS FOR FURTHER WORK**

There is now a need to research skill mix directly in other health professions using the CD model to apply the concept of analysing the cost-benefits of training for certain tasks, following task analysis. Studies into the psychology and social interactions of delegation will give further insight into the attitudes and behaviours of professionals during delegation. The CD model offers a functional approach to delegation and is suggested as a means to manage delegation taking into consideration available skills and the cost-benefit of training to produce skills. The CD model was not offered as a solution to the resistance of some professionals to the concept of sharing work with a non-professional worker.

For organisations, further study of the appropriateness of training is indicated by this study. With a large demand for vacant assistant posts, criteria can be used to select assistants capable of learning on-the-job. The assistants, with a low investment in training, have been found in this study to be able to carry out clinical tasks for therapists, with the end result of lowering costs without loss of quality. The implications of this are that training type and content need to be studied to find the most appropriate training for the responsibility delegated in services.

The physiotherapy profession is an all degree profession. There is a national shortage of physiotherapists. Yet many of the tasks being carried out by physiotherapists could be delegated to assistants, if the physiotherapist works closely to the assistant and builds up trust in her or him. The profession should, as this research suggests, accept that closer working relationships with assistants would allow professional skills and expertise to reach a greater number of patients. They could then concentrate on the use of knowledge to analyse and plan, to the development of specialised manual skills to provide specialist treatments, and to the acquisition of pathological and ergonomic knowledge to educate

and advise patients. The delegation of clinical tasks to assistants has implications for the training and practice of physiotherapists in the future.

## **11.6 CONCLUSION**

Although this research has successfully implemented and analysed delegation using the CD model, delegation can still be frustrated by the lack of commitment of professionals. The fact that delegation has been set up and operated successfully may well encourage others to repeat the findings and may help the profession to reflect on the level of skill required for tasks. There is clearly a need to examine roles and working relationships. The need to train student physiotherapists to delegate to prepare them for the Health Service of the 2,000s is evident and such training may well help to change the attitudes of future physiotherapists.

## **CHAPTER TWELVE**

### **CONCLUSIONS**

#### **SUMMARY**

This final chapter considers the main findings of the research and offers the CD model as a means of both implementing and investigating delegation in physiotherapy, with the result that there is now a tool to improve delegation practice between health professionals and assistants. The impact on present services and the need for further research is discussed, with suggestions made as to its focus.

#### **12.1 INTRODUCTION**

The problem found in the research of inconsistent practice in the delegation of tasks to assistants has resulted in different levels of delegation operating in similar services and in inefficiencies where assistants are not utilised fully. The research also found reluctance on the part of professional staff to consider an increased level of sharing of clinical work with the assistants. Thus the need for a systematic approach to delegation was identified. Delegation is considered desirable but the level at which it is set is often low, with clinical tasks retained by the professionals. The findings of this research suggest that the CD model can be used to plan and organise delegation, taking into consideration cost-benefit and structuring communications to ensure safe working practices. The CD model has been found to be the framework to both implement changes in skill mix in outpatient physiotherapy services and examine current practice in delegation. By constructing

delegation systematically, the issues that concerned the physiotherapists were addressed, with the result that a planned level of delegation could be set up. This resulted in the availability of appropriate skill levels for the safe delivery of clinical tasks.

The research has led to four main issues that health professionals and their managers need to consider; task allocation, cost-benefit, training and working practices.

## **12.2 TASK ALLOCATION**

This research applied, through the CD model, techniques to Health Service practice that had been successfully used in industry to allocate tasks between people, or between people and machines. Techniques such as task analysis provide rich information to simplify apparently complex tasks and identify the skill level and procedures required for the delivery of the subtask, thus providing the basis for the safe allocation of task between professional and assistant.

The difference between industry and health is, of course, that whatever the task, it is carried out for or on the patient. Tasks can not, therefore, be divided between professional and assistant as they were between man and machine. Delegation must be left to the discretion of the professional, who will need to keep control of patient care. However the system needs to be in place to allow such task allocation to happen, and yet to ensure that the health professional stays in control of the intervention.

The findings of this research that blanket decisions on task allocation were made by groups of staff, without taking into consideration the ability of the assistant or the

suitability of the task for delegation, confirms the overdue need for a scientific and rational approach to delegation. Such a system was called for by Watts (1971) almost three decades ago. The CD model provides the solution to the allocation of tasks and as such will help the scarce resources of the Health Service to reach more patients.

### **12.3 COST-BENEFIT**

This study found that there was little evidence of the application of cost-benefit to the training and use of assistants. Yet the implications are that without applying cost-benefit to skill mix, services will be more expensive and less efficient than they should be. The arguments against using assistants were that there might be loss of quality of care. No such loss of quality, or reduction in good outcomes, was found when delegation was implemented using the CD model. The delegation process using the CD model was designed to maintain quality by planning the working arrangements and communication links to ensure the availability of appropriate knowledge and skills throughout the episode of treatment.

Skill mix in this research using the CD model was set at a 2:1 physiotherapist to assistant ratio. Further research is needed to see if this can be reduced, as the physiotherapists in the pilot study still carried out routine tasks about thirty percent of the time.

### **12.4 TRAINING**

The investment in training in the research was low, as the assistants were trained to the level required for the responsibilities delegated. The training of the assistants was mainly achieved by performance coaching on-the-job, the aim being to develop practical skills. Some theoretical training was given but this was kept to a minimum and involved theory

on safety of use of equipment and localisation of common treatment tissues. Rationales behind treatments were not included in the training, as the CD model provided a working structure where the physiotherapist would remain available as the knowledge source. Physiotherapists were given training in the delegation system. It was found that just as the assistants built skills, so did the physiotherapists in the art of delegation.

The research found that delegation had been largely unplanned and essentially done on an *ad hoc* basis at all of the sites prior to implementation. In the individual treatment areas the assistants worked in peripheral support carrying out very few clinical tasks. This was the case whether the assistants were plentiful or in short supply, or whether they were trained to NVQ level 3. Physiotherapists, rather than using their discretion on whether to delegate to assistants, did not feel that as individuals they had the authority to use assistants differently than the rest of the group. Delegation would not grow due to availability of extra help, or to training off the job. It was clear that planning and setting up of delegation was needed to change practice.

Health professionals are accountable for the care of their patients and are entrusted to deliver that care to high standards. They take both the credit and blame for their actions. There clearly is a risk in delegating, one is giving away the very thing one would like to retain (authority) but keeping the thing one would like to give away (accountability). However, health professionals now qualified by degree and should expect to delegate to make use of resources available to them. The inclusion of delegation in the training of physiotherapists would prepare newly qualified physiotherapists to maintain control of their patient's care whilst making use of assistants, to deliver that care in a cost-effective

manner. The National Health Service of today can no longer afford the luxury of professionals working alone. Health professionals must be trained to extend their work through others skilled enough to be an extra pair of hands.

The training for assistants was low in this study and appropriate to the responsibilities of the tasks delegated, otherwise the cost would have been prohibitive. It should always be remembered that to save time one must invest in time, but only the time to do the job in hand. Hence the CD model's inclusion of inter-linking factors to produce a cost-effective delegation system.

The findings of this research have implications for training of both assistants and health professionals. Assistant training to NVQ level 3 was not found to increase the clinical tasks assistants are delegated. The inclusion of delegation in the curriculum of student health professionals would prepare them to make use of available assistants.

## **12.5 WORKING PRACTICES**

The CD model used an ergonomic approach to support delegation dynamically by organising training, working partnerships and communications, and by arranging the working environment.

As the professional will need to keep control of patient care, an ergonomic approach applied to the working environment and communications was found to structure a safe system for delegation, with the health professional in the necessary position of control.

The CD model by generating suitable circumstances allowed delegation to grow as trust was built between physiotherapists and assistant working in partnership. The working arrangements were found to facilitate the delegation of clinical work to the level set by the CD model. This type of working practice was not seen in any of the physiotherapy services visited for the research. The norm was for an assistant to be available for all of the team so that no team member could be sure of regular support. This led to very few clinical tasks being carried out by the assistants.

It would not be possible to delegate to the level suggested in the CD model unless dedicated help was available. Hence the need for available assistant time in such an arrangement that the physiotherapist remains in control of the patient, delegating only the responsibility for carrying out the task according to her or his plan and booking exclusive assistant time in the assistant's diary.

The partnership working practice suggested in the CD model is offered to facilitate delegation between health professional and assistant. There was some resistance to delegation by physiotherapists at all stages of the research. There were departments that refused to be included in the study due to former decisions taken by the physiotherapists not to delegate clinical tasks to assistants. Yet there were physiotherapists who demonstrated considerable commitment to delegation, but who initially experienced psychological difficulties in passing clinical tasks to assistants. The resistance to delegation in the profession, including the psychology and social interaction of delegation, needs further study.

If the CD model was adopted nationally, the changed working practices of professionals would allow scarce resources in the health professions to reach more patients.



## 12.6 CONCLUSION

The CD model has, by addressing the difficult professional issues involved, produced a system where delegation has been found to be carried out at a cost-effective level without loss of quality. The attitude of some professionals to delegation remains a problem that this research found could be a bar to delegation. However there was also much support for delegation at the sites visited. This research has found that a low investment in training was all that was required for the assistants to carry out the treatments delegated, because the physiotherapist were available to make higher level decisions, if and when required. The fact that research has found that delegation can operate effectively at the level set in the CD model may well answer some of the concerns of the profession to delegating clinical tasks to assistants.

The CD model is offered as a means to improve efficiency in delegation in the health professions. It could help to reduce the cost of the delivery of health care, without any lowering of standards of care. It is a fact of life, though, that in the present climate there will be resistance by some professionals to delegation. However change is more acceptable when a systematic and rational approach of proven ability is used. Further research is called for into the psychology and social interaction in delegation.

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## **APPENDICES**



## **APPENDIX ONE**

**INSTRUMENTS FOR COLLECTING TASK OWNERSHIP AND FREQUENCY**

**AND**

**ATTITUDES TO DELEGATION**

**MANAGER'S SEMI-STRUCTURED INTERVIEW**

**Type of organisation .....**

**Numbers of Whole Time Equivalent (WTE) physiotherapists in  
outpatients .....**

**Numbers of WTE assistants in outpatients .....**

**Numbers of clerical assistants (WTE) .....**

**Questions:**

1. Do you have a waiting list for outpatient appointments?
2. If yes, how long is it in weeks?
3. What initiatives do you use to reduce the waiting list, if any?
4. Do you perceive that there is a shortage of physiotherapists?
5. If yes, how does the shortage affect your service?
6. What criteria do you use to select assistants when recruiting?
7. Do you consider that an increased utilisation of assistants could reduce the affect  
of a shortage of physiotherapists?

8. Do your assistants carry out any clinical tasks?

9. If yes, what type of task do they carry out?

10. What training do you feel that assistants should receive?

11. If assistants were used to do an increased amount of clinical work, how would the following be affected?

Quality of patient care?

Costs of the service to purchasers?

Efficiency (numbers of attendances per case)?

Outcomes?

12. What concerns would you have to assistants carrying out ultrasound treatments as planned by a physiotherapists and working under supervision?

**PHYSIOTHERAPIST'S TASK QUESTIONNAIRE**

This questionnaire is designed to analyse the tasks that you do at work. Please do not put your name on the form so that it remains anonymous. Your answers will not be used to compare individual hospitals.

*Where a choice is given please circle your chosen answer.*

**What type of organisation do you work for?**

District General Hospital

Community Hospital

Other please state

**What grade are you?**

Superintendent

Senior 1

Senior 11

Staff/Junior

**Are you?**

Whole time

Part time

**If part time please state your hours per week in outpatients.....**

**How long have you worked in outpatients? .....**

**Do you have assistants working with you in outpatients?**

Yes

No

Yes      No

0 = I don't ever do that task

2 = I do that task about once a week

4 = I do that tasks two to five times daily

**Domestic/housekeeping tasks:**

**Clearing away equipment .....**

Escorting patients to treatment areas .....

Preparing patients for treatment .....

Answering patient calls for attention .....

**Monitoring the waiting area .....**

Answering the 'phone .....

Writing in treatment records .....

**Taking the patients' histories .....**

Examining patients .....

Planning treatments .....

## **Treatment tasks:**

### **Exercise therapy:**

Monitoring exercises .....

Progressing exercises .....

Applying suspension therapy .....

### **Manual therapy:**

Cervical traction .....

Lumbar traction .....

Mobilising spinal lesions .....

Manipulating spinal lesions .....

### **Electro-therapy:**

Ice .....

Hot packs .....

Pulsed short wave diathermy .....

Ultrasound .....

Laser therapy .....

Interferential .....

Transcutaneous Nerve Stimulation .....

Wax .....

Ultra-violet light .....

Faradism .....

**What training do you feel that assistants should have?**

Formal inservice by  
physiotherapists

On-the-job

NVQ

Other  
(Please specify)

**If assistants carried out electro-therapy tasks as planned by you and under supervision, such as ultrasound treatments, what would your concerns be?**

**Would using assistants to carry out clinical tasks for you improve or reduce quality of care to patients?**

Reduce

No difference

Improve

**Would using assistants to carry out clinical tasks for you reduce or increase the costs of care?**

Reduce

Increase

No difference

***Thank you for your help in completing this questionnaire. Please return it to me in the envelope provided.***

### ASSISTANT'S TASK QUESTIONNAIRE

This questionnaire is designed to analyse the tasks that you do at work. Please do not put your name on the form so that it remains anonymous. Your answers will not be used to compare individual hospitals.

*Where a choice is given please circle your chosen answer.*

**What type of organisation do you work for?**

District General Hospital      Community Hospital      Other, please state

**Are you?**

Whole time      Part time

**If part time please state your hours per week in outpatients.....**

**How long have you worked in outpatients? .....**

**Do you rotate to other specialities from outpatients?**      Yes      No

**Do physiotherapists delegate clinical tasks to you?**      Yes      No

**What type of training have you received for this job?**  
**(You may circle more than one)**

Formal inservice by physiotherapists      On-the-job      NVQ      Other (please state)



**Please indicate how often you carry out any of the following tasks by using the following rankings:**

0 = I don't ever do that task

1 = I do that task about once a month

2 = I do that task about once a week

3 = I do that task about once a day

4 = I do that tasks two to five times daily

5 = I do that task over five times daily

**Do you do domestic/housekeeping tasks?**                      Yes                      No

**If yes, please use the ranking of 0 to 5 to indicate how often you do the following tasks:**

Tidying treatment areas .....

Clearing away equipment .....

**Do you do patient care duties?**                      Yes                      No

**If yes, please use the ranking of 0 to 5 to indicate how often you do the following tasks:**

Escorting patients to treatment areas .....

Preparing patients for treatment .....

Answering patient calls for attention .....

Monitoring the waiting area .....

**Do you do clerical tasks?**                      Yes                      No

**If yes, please use the ranking of 0 to 5 to indicate how often you do the following tasks:**

Answering the 'phone .....

Writing in treatment records .....

**Do you do assessment tasks?** Yes No

**If yes, please use the ranking of 0 to 5 to indicate how often you do the following tasks:**

Taking the patients' histories .....

Examining patients .....

Planning treatments .....

**Do you do treatment tasks?** Yes No

**If yes, please use the ranking of 0 to 5 to indicate how often you do the following tasks:**

**Exercise therapy:**

Monitoring exercises .....

Progressing exercises .....

Applying suspension therapy .....

**Manual therapy:**

Cervical traction .....

Lumbar traction .....

Mobilising spinal lesions .....

Manipulating spinal lesions .....

**Electro-therapy:**

Ice .....

Hot packs .....

Pulsed short wave diathermy .....

Ultrasound .....

Laser therapy .....

Interferential .....

Transcutaneous Nerve Stimulation .....

Wax .....

Ultra-violet light .....

Faradism .....

**What training do you feel assistants should have?**

Formal inservice by  
physiotherapists

on-the-job

NVQ

Other  
(Please specify)

*Thank you for your help in completing this questionnaire. Please return it to me in the envelope provided.*

## **APPENDIX TWO**

### **THE CD MODEL IN TABULAR FORM**

The CD Model in Tabular Form

Superord.	Plan	Task Analysis - Operations and Plans	Notes
0	<b>Manage Delegation</b>		
		Plan 0: Using knowledge of the service and staff, do 1 - 2, then using the information gained, do 3 - 4, finally do 5 to operate new system.	
	1	Assess functional needs of the service	<ul style="list-style-type: none"> <li>■ Hierarchical task analysis (HTA) is used to analysis how all subtasks are carried out,, without reference to grade of staff. Plans are used to state the conditions under which tasks are executed. Criteria are applied to allocate subtasks to staff.</li> </ul>
	2	Assess staff competence	<ul style="list-style-type: none"> <li>■ Interviews are conducted with assistants to establish level of skill they are operating at, and to identify training needs.</li> </ul>
	3	Establish level of delegation	
	4	Set up delegation	
	5	Operate according to delegation	
3	<b>Establish level of delegation</b>		
		Plan 3: Do 1, then 2, suitable? Yes, do 3, No, are there subtasks remaining for consideration? Yes, repeat from 1, No, Exit.	
	1	Select subtask for consideration	<ul style="list-style-type: none"> <li>■ Using HTA, select subtask previously carried out by physiotherapist.</li> </ul>
	2	Assess suitability of selected subtask for delegation.	
	3	Record subtask as acceptable	<ul style="list-style-type: none"> <li>■ Compile list of subtasks for delegation to be used when assessing training needs.</li> </ul>
4	<b>Set up delegation</b>		
		Plan 4: Do 1 and 2 simultaneously, then 3.	
	1	Organise staff.	

The CD Model in Tabular Form

	2	Train subordinates		
	3	Set go point		
5	<i>Operate according to delegation</i>			
		Plan 5: Do 1 as opportunity arises. Do 2 to facilitate communication networks, do 3 - 4 regularly.		
	1	Adjust skill mix to appropriate level for delegation.	■	Change skill mix to new physiotherapist to assistant ratio by employing assistants as the opportunity arises, eg vacancies.
	2	Set up workstations.	■	Workstations should be shared by the team of physiotherapists and assistant, working in treatment cubicles close to the station. Diaries, helper cards, patient notes etc should be kept at the station. This is necessary for prompt communication.
	3	Monitor quality and quantity.	■	Activity needs to be measured to monitor efficiency. Quality to ensure standards are kept high.
	4	Monitor job satisfaction.	■	Measure initially to assess the effect of new system on staff, and to identify and act on any problems.
3.2	<i>Assess suitability of selected tasks for delegation</i>			
		Plan 3.2: Do 1 and 2, then using this information do 3 then 4.		
	1	Establish and use criteria for subtask delegation.		
	2	Assess training required.		
	3	Assess monitoring required.		
	4	Assess benefits of delegation.	■	Weigh up the investment in training against benefits using formula: Training cost + (treatment time * salary of assistant) + (monitoring time * salary of physio) < salary physio * treatment time. Benefits increase with time if training cost are low.

The CD Model in Tabular Form

4.1	<i>Organise staff</i>			
		Plan 4.1: Using functional HTA of service and decisions on suitability of tasks for delegation, do 1 to establish communication networks, then do 2, followed by 3 - 4.		
	1	Do HTAs for task and its subtask for physiotherapists and assistants.		
	2	Instruct staff.	<ul style="list-style-type: none"> <li>Physiotherapists need to be instructed in the communication networks in the HTAs, the assistant's skills, diaries for planning and job aids for specific instruction and in monitoring arrangements so that trust is built between staff and in the system.</li> </ul>	
	3	Organise teams.	<ul style="list-style-type: none"> <li>Teams of physiotherapists and assistant, depending on the physio to assistant ratio are arranged to work closely together to facilitate close communication and planning of work.</li> </ul>	
	4	Organise environment	<ul style="list-style-type: none"> <li>Workstations should be arranged for the teams to allow physiotherapist and assistant to work closely together in the same environment. Paperwork should be easily accessible to physio and assistant to enhance communications.</li> </ul>	
4.2	<i>Train assistants</i>			
		Plan 4.2: Using knowledge gained from staff interviews, do 1, then 2, inservice training? Yes, do 3 - 4, then 5. No? Exit.		

The CD Model in Tabular Form

	1	Assess training needs	<ul style="list-style-type: none"> <li>Interviews with staff will highlight new skills that need to be built in order for assistants to carry out new tasks.</li> </ul>
	2	Select training methods	<ul style="list-style-type: none"> <li>Using knowledge of tasks, training methods need to be selected to give initial instructions to allow skills to be built in new tasks.</li> </ul>
	3	Locate training materials	<ul style="list-style-type: none"> <li>Decide on training materials and prepare for teaching.</li> </ul>
	4	Conduct training demo	<ul style="list-style-type: none"> <li>If physiotherapists are involved in training, ensure correct level of approach is applied to allow acceptable level of learning to</li> </ul>
	5	Carry out training	<ul style="list-style-type: none"> <li>Arrange for training program to be carried out to facilitate skill building practically.</li> </ul>
4.3	<i>Set "go" point</i>		
		Plan 4.3. Do 1, Yes?, do 2. No?, Exit and train.	
	1	Establish preparatory training is complete.	<ul style="list-style-type: none"> <li>Consult staff carrying out training that preparatory training is complete and that the assistants have had a full attendance record.</li> </ul>
	2	Set to practice	<ul style="list-style-type: none"> <li>Arrange for assistant to work with a physiotherapists to begin "on the job" training.</li> </ul>
3.2.1	<i>Establish and use criteria for subtask delegation</i>		
		Plan 3.2.1: Using breakdown of subtasks in HTA, do 1. Is the task largely motor? Yes, do 2, then 3. No, any other subtasks for consideration? Yes, repeat from 1, No, Exit.	
	1	Establish criteria to allocate subtasks	<ul style="list-style-type: none"> <li>Using knowledge of physiotherapy, establish criteria, eg (a) response to treatment time. (b) task frequency. (c) Consequences of error. (d) Risk of error (e) knowledge. (f) manual feedback . (g) complexity</li> </ul>



The CD Model in Tabular Form

	2	Assess subtask type and nature	<ul style="list-style-type: none"> <li>Analyse the task into different components, eg ultrasound, describing the different subtasks in detail so that criteria can be applied to each subtask.</li> </ul>
	3	Make decision on delegation	<ul style="list-style-type: none"> <li>After the application of the criteria a decision is made on delegation of the subtasks according to the conditions laid out in the plan in the HTA. Communication networks are set out in the HTA to make delegation possible. HTAs are used in training.</li> </ul>
3.2.2	<i>Assess training required</i>		
		Plan 3.2.2: Do 1, then 2, balance investment with advantages and do 3	
	1	Assess investment	<ul style="list-style-type: none"> <li>Assess the amount of training required off the job, and assess monitoring required on the job. Use formula to see if the training investment is worth passing the work from therapist to assistant.</li> </ul>
	2	Assess advantages	<ul style="list-style-type: none"> <li>Assess advantages to service, to staff and to patients.</li> </ul>
	3	Decide on training level	<ul style="list-style-type: none"> <li>Using the information from staff interviews, and the knowledge of subtask and its delivery circumstances, decide on training level.</li> </ul>
3.2.3	<i>Assess monitoring required</i>		
		Plan 3.2.3: Do 1 - 2, using this information, do 3.	
	1	Select levels of monitoring	<ul style="list-style-type: none"> <li>Using HTA of task and subtask, state working relationships, eg practice only with physiotherapist in same environment or practice with physiotherapist in the building.</li> </ul>
	2	Set competence required	<ul style="list-style-type: none"> <li>In order to establish whether able to practice within monitoring level set, establish competence required, ie demonstrates on 3 occasions able to correctly carry out subtask.</li> </ul>

The CD Model in Tabular Form

	3	Select key monitoring points	■	Select points to measure the new service by, eg activity, quality to the patient, outcomes per number of treatments. These are all necessary to ensure no loss of quality of efficiency through delegation of tasks.
4.2.2	<i>Select training methods</i>			
		Plan 4.2.2: Using decision made on training level required, do 1 or 2		
	1	Select external training	■	Make necessary arrangements but ensure that available course fits the requirements of the service.
	2	Select inservice training		
4.2.3	<i>Locate training materials</i>			
		Plan 4.2.3: Do 1 and/or 2		
	1	Prepare training package	■	Prepare contents of training and prepare handouts to support information. Arrange practical sessions where applicable.
	2	Prepare job aids	■	Prepare job aids to give step by step information on subtask delivery. Job aids should be in user friendly terminology to allow assistants to understand instructions and should be supported by drawings to help locate anatomical structures.
4.3.2	<i>Set to practice</i>			
		Plan 4.3.2: Do 1, then 2 - 3		
	1	Monitor key monitoring points	■	Monitor new service to examine effects of change.
	2	Feed back to staff	■	Involve the staff in reporting on the results of the monitor in order to keep their ownership.

The CD Model in Tabular Form

	3	Record data	■	By recording the results, ongoing monitoring will audit the service.
4.2.2.2	<i>Select inservice training</i>			
		Plan 4.2.2.2: Using knowledge of subtask, do 1 - 3 in any order or in any combination		
	1	Select verbal instruction	■	Verbal instructions, supported by handouts, will explain in the required detail the information necessary to carry out the subtask.
	2	Select practical "hands on" training	■	Many assistant tasks are practical. Training practically will help the assistant to become familiar with the subtask delivery.
	3	Select "on the job" training	■	Subtasks need to be carried out on patients, therefore on the job training is important to apply the subtask to various conditions and locations of anatomy.

## **APPENDIX THREE**

### **INSTRUMENTS FOR MEASURING CHANGED PRACTICE AND EFFECTIVENESS**

**PHYSIOTHERAPY DEPARTMENT**  
**OUT-PATIENT QUESTIONNAIRE**

The physiotherapy department is conducting a survey into the quality of the service provided to our patients. We hope that you will help us by answering a few questions. Please do not write your name on this form so that your responses remain anonymous. There is a post box in the Reception area for you to place the completed form in.

***Please tick the statement in each section that applies to you.***

1. How long were you waiting for your first physiotherapy appointment after your doctor sent you for physiotherapy?

Under 2 weeks ☐

2 - 6 weeks ☐

7 - 11 weeks ☐

Over 12 weeks ☐

2. On arrival in the department, on average, how long did you have to wait after your appointment time to be attended to?

I was always seen on time ☐

5 Minutes or Less ☐

6 - 10 minutes ☐

11 - 15 minutes ☐

16 - 30 minutes ☐

Over 30 minutes ☐

3. How did you find the physiotherapy staff?

Unpleasant and Unhelpful ☐

Pleasant and Helpful sometimes ☐

Pleasant and Helpful most of the time ☐

Always Pleasant and Helpful ☐

4. Did your physiotherapist introduce herself/himself to you?

Yes ☐

No ☐

Don't Know ☐

5. Did the physiotherapy staff address you by your preferred name?

Yes ☐

No ☐

Not Applicable ☐

6. Following your course of physiotherapy, what understanding do you have of the problem you were sent with?

None ☐

A Little ☐

A Moderate Amount ☐

A Lot ☐

Not Applicable ☐

7. Did your physiotherapist explain what he/she hoped to gain for you with the treatments that you received?

Yes ☐

Not Sure ☐

Not Applicable ☐

No ☐

8. Since attending for physiotherapy, have you learnt to change the way you do things at home and at work to help yourself?

A Great Deal ☐

A Moderate Amount ☐

Very Little ☐

Not At All ☐

Not Applicable ☐

9. When talking about your problem, did you feel your physiotherapist was easy or difficult to talk to?

Please circle the number of your choice:

Easy                      5           4           3           2           1           Difficult

10. How many times did you attend for treatment?

Less Than 5 Times ☐

6 - 10 Times ☐

11 - 15 Times ☐

16 - 20 Times ☐

Over 20 Times ☐

11. How did you find your attendance?

Not At All Helpful ☐

Slightly Helpful ☐

Moderately Helpful ☐

Very Helpful ☐

12. During this period of treatment, did your problem change?

It Became Completely Better ☐

It Became Much Better ☐

It Became 50% Better ☐

It Became Slightly Better ☐

It Did Not Change ☐

It Became Worse ☐

13. Do you understand why your physiotherapy has ended?

No ☐

Yes ☐

Not Sure ☐

Not Applicable ☐

14. How do you feel about coping with your problem in the future?

Very Confident ☐

Moderately Confident ☐

Slightly Confident ☐

Not At All Confident ☐



If you would like to comment further on your physiotherapy, or if you have any ideas on how we can improve the service, please use the space provided below.

Thank you very much for your help

Physiotherapy Helper Card	
Name	Tel:
Physiotherapist	Helper
Diagnosis	
Treatment	
Signed	Date

Attendances		Changes to treatment
Date	Signed	

The front, as shown by top diagram, and the back of the physiotherapy helper card.

## SEMI-STRUCTURED INTERVIEW

### Topic: Delegation system

#### Physiotherapists:

1. How are you finding the new system?
2. Are you delegating patients to the assistant?
3. Are you experiencing any difficulties in delegating?
4. What effect has delegation had on your workload?
5. Has the assistant had enough time available for the work you wish to delegate?
6. Has the housekeeping work been carried out?
7. Have you used the "helper" cards to plan the assistant's work?
8. Have you any comments to make on the "helper" cards and diary system?
9. Have there been any mishaps or causes for concern?
10. Would you wish to retain the help now available to you?

#### Assistants:

11. How are you finding the new system?
12. Are the physiotherapists delegating patients to you?
13. Are you experiencing any difficulties with the delegation?
14. What effect has delegation had on your workload?
15. Have you had enough slots available in your diary for delegated work?
16. Have you managed to carry out other duties such as housekeeping?
17. Have the "helper" cards been used? Are they easy to interpret? Do they provide enough information?
18. Are physiotherapists re-assessing their patients? Is this planned in diaries?
19. Have you had any difficulty in getting the physiotherapist to see patients?
20. Have you any comments or suggestions to make on the system?

Work-Study of Time Spent on Tasks

A3.4

	PHYSIOTHERAPY TASK STUDY		Date	
Task	Frequency	Time per task to nearest 30 secs.	Time spent in physiotherapy talk	Time spent in social talk
Verbal assessment				
Physical assessment				
Education or advice				
Laser				
Ultrasound				
Pulsed SWD				
Interferential				
Traction				
Exercises				
Manipulation or mobilisation				
Hot packs or ice				
Administration				
Other, please state				

**PATIENT SATISFACTION QUESTIONNAIRE****Additional Two Questions for the Field Study**

15. During your course of treatment, who carried out most of your treatments?

An assistant?

☐

A Physiotherapist?

☐

Assistant & Physiotherapist  
equally?

☐

16. If mostly an assistant treated you, did you find that you were able to see your physiotherapist:

As often as you felt you needed?

☐

Almost as often as you felt you needed?

☐

Seldom as often as you felt you needed?

☐

Never as often as you felt you needed?

☐

### Assistant Task Chart

Assistant's Task Chart															
Name	Date														
Please enter the number of times you carry out each task per half hour															
	8.30.	9.00.	9.30.	10.00.	10.30.	11.00.	11.30.	12.30.	1.00.	1.30.	2.00.	2.30.	3.00.	3.30.	4.00.
Exercise class															
Monitor exercises															
Suspension therapy															
Ice															
Hot packs															
Wax															
Ultrasound															
Laser															
Pulsed SWD															
Interferential															
Back traction															
Neck traction															
Ultra violet															

**ASSISTANT'S WORK LOAD QUESTIONNAIRE**

Assistant .....

Site .....

Date .....

*Please put a mark across the line to indicate how you feel about your situation at the end of a typical morning:*

1. The amount of mental pressure (thinking, deciding, and planning) was:

Extremely high

No mental pressure

---

2. My caseload was:

Too low

Too high

---

3. My frustration level was:

High

Low

---

4. I find my job:

a) Demanding

Easy

---

b) Not at all satisfying

Very satisfying

---

## **Assistant Task List**

Hot packs

Ice

Wax

Ultrasound

Laser

Pulsed shortwave

Interferential

Suspension therapy

Active exercises

Cervical traction

Lumbar traction

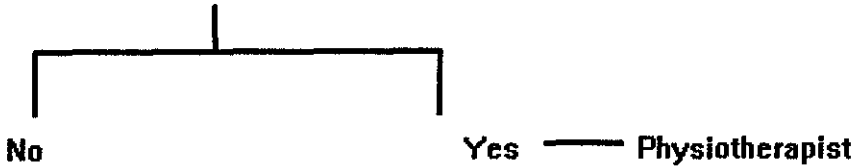


### Physiotherapist's Monitoring Chart

[illegible]

### Criteria for Task Delegation

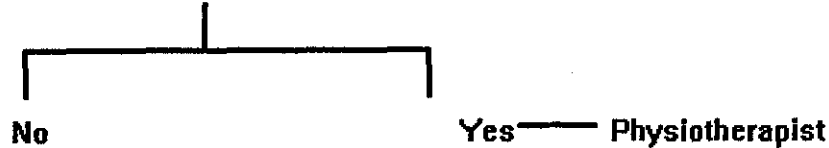
Is information and/or decision-making involved?



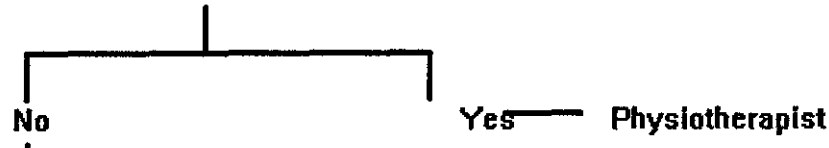
Is the task carried out frequently?



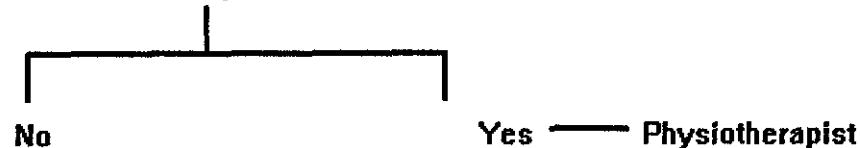
Are manual feedback or adjustments involved?



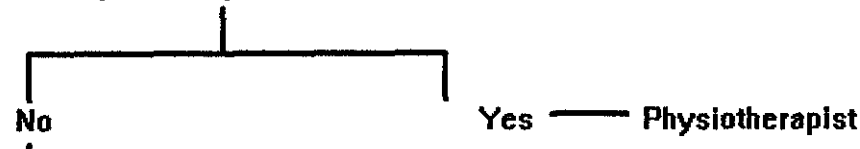
Is the response to treatment immediate?



Are the consequences of error serious?



Is the possibility of errors occurring high?



Delegate to assistant

## **APPENDIX FOUR**

### **INFORMATION AIDS**

## **INTERFERENTIAL THERAPY TREATMENTS**

### **Information for Patients**

Interferential therapy makes use of a low frequency current of 0 - 100 Hertz that is produced when two middle frequency currents interfere with each other. Middle frequency currents are used in this way because the sensation they produce is quite pleasant, unlike the low frequency currents.

The electrodes are covered in wet sponges, so that the current will transmit through the water into the skin. Electrodes are held in place by suction or bandages. They are arranged so that the two currents interfere in the target tissue.

The effects produced depend on the frequency of current used and are follows:

Increase in blood flow

Stimulation of muscle contraction

Reduction of pain

Reduction of muscle spasm

Reduction of inflammation

The sensation from the treatment is a tingling sensation of "pins and needles". Muscle contractions will be felt twitching in the treatment area. These sensations will reduce after the first minute, and the current will be increased again to produce the desired effect. If sensations are unpleasantly severe, or if pain is felt, inform the person administering the treatment immediately.

## **LASER TREATMENTS**

### **Information for Patients**

Laser light used in physiotherapy treatments is low power (usually less than 70 milli Watts) infra red or red light. It penetrates through the skin into the soft tissue and it stimulates the cells. The cells become more active for up to 48 hours. The following effects occur as a result:

Inflammation is reduced

Pain is relieved

The cells divide and grow; this stimulates the repair of damaged tissue.

During treatment there is no sensation, apart from the pressure felt as the probe or cluster are pressed into the tissues.

Treatment lasts for a few minutes, doses are calculated according to the depth of the tissues and the desired effect.

Laser treatment should begin to be effective after the first few treatments, and improvement should continue with each exposure. Usually about nine treatments are necessary for soft tissue problems (tendons, ligaments, joints and muscles).

## **PULSED SHORT WAVE DIATHERMY TREATMENTS**

### **Information for Patients**

Pulsed short wave diathermy (SWD) produces an electromagnetic and electrostatic field that enters the tissues. The pulsing effect results in bursts of energy with short rest periods between bursts, so that the tissues are heating and cooling simultaneously. There are no cumulative heating effects. The energy is absorbed in the tissues, penetrates deeply, and any cells with a low charge across their cell wall pick up the charge, with the following effects:

Inflammation is reduced

Swelling is reduced

Healing is stimulated

Blood supply is increased

Pain is relieved

There are no sensations felt during treatment. If any heat or pain is felt the person administering treatment should be informed immediately. The energy can affect hearing aids so these should be removed.

Response to treatment should begin after the first few treatments and should continue gradually. Treatment, depending on response usually continues for 3 - 5 weeks.

## **ULTRASOUND TREATMENT**

### **Information for Patients**

Ultrasound is high frequency sound energy. In physiotherapy treatments it is usually 1 or 3 Mega Hertz, with a power of less than 3 Watts per cm<sup>2</sup>. It can be used in either pulsed mode or continuous. (If pulsed, it is administered in rhythmical bursts of energy, separated by rest periods).

During exposure the energy is transmitted into the tissues via a jelly, cream or water.

The cells vibrate finely and are stimulated. The following effects result:

Inflammation is reduced

Swelling is reduced

Scar tissue is softened

Pain is relieved

Muscle spasm is decreased

Blood flow is increased

Stimulation of healing

There should be no sensations felt during treatment, apart from the movement of the ultrasound treatment head. If heat, prickles, pain or aching are felt during treatment, inform the person administering the treatment immediately.

Treatment usually lasts for several minutes and benefits are expected to be felt gradually, starting after the first few treatments. There should then be further, but gradual, improvement. Treatment is usually continued for 2 - 3 weeks, depending on response.

## **APPENDIX FIVE**

### **TEACHING AIDS**



Superord.	Plan	Task Analysis - Operations and Plans	Notes
0	<i>Teach assistant ultrasound</i>		
		Plan 0. Having established level of competence, do 1 - 6 in order to prepare the assistant to practice.	
	1	Interpret the physiotherapist's plan	
	2	Prepare the patient	
	3	Prepare the equipment	
	4	Carry out the treatment	
	5	Liaise with physiotherapist	
	6	Complete paperwork	
1	<i>Interpret the physiotherapist's plan</i>		
		Plan 1. Do 1, then do 2	
	1	Explain that the patient's condition and the exact location for the treatment will be written down on the helper card	<p>The helper card is used as a performance aid and all information is recorded for the assistant. Complex terms are avoided. The card is customized for each patient</p>
	2	Explain the different parameters that will be used to describe the treatment settings	<p>All the settings that will be used during the treatments are explained and their position on the machines are pointed out.</p>
2	<i>Prepare the patient</i>		
		Plan 2. Do 1, if progress is satisfactory, do 2 to 4, following the plan. If unsatisfactory, Exit and do plan 5.	
	1	Teach the assistant to establish the patient's progress since the last visit.	<p>The patient is asked how they have been since the last visit. The assistant listens and if there have been any problems or if the patient is worse, the physiotherapist is informed before any treatment is given.</p>
	2	Show the assistant how to prepare the patient, so that the treatment location is accessible and supported and the patient is comfortable.	<p>The assistant is shown how to arrange the common treatment locations, so that the patient is comfortable and warm, with their dignity respected</p>

	3	Show the assistant how to apply coupling medium	<ul style="list-style-type: none"> <li>■ The assistant is shown how to line the treatment area in paper towels and to apply coupling medium, usually gel in sufficient amounts to the area</li> </ul>
	4	Show the assistant how to involve patient in the treatment	<ul style="list-style-type: none"> <li>■ Teach the assistant to ask the patient to report any sensations during treatment felt in the treatment area. Teach the assistant to know what should be felt.</li> </ul>
3	<i>Prepare the equipment</i>		
		Pan 3. Do 1, then 2 until the assistant can demonstrate that they can follow the physiotherapist's plan	
	1	Show the assistant how to arrange the machine with the treatment head held in the coupling medium over the treatment area as in the physiotherapist's plan	<ul style="list-style-type: none"> <li>■ The assistant is made familiar with the different treatment heads, with care of the head explained along with any safety measures.</li> </ul>
	2	Show the assistant how to arrange the settings as stated in the physiotherapist's plan	<ul style="list-style-type: none"> <li>■ The assistant is shown the control knobs for the different parameters. The parameters are explained so that the assistant is familiar with the range of settings, their operational sequence and significance</li> </ul>
4	<i>Carry out the treatment</i>		
		Plan 4. Do 1, then throughout do 2 and 3, any problems, Exit and do plan 5. When the buzzer goes do 4, then 5 to finish treatment.	
	1	Teach the assistant how to set and turn on the machine.	<ul style="list-style-type: none"> <li>■ The assistant is shown how to select the treatment frequency, pulse mode and time, and how to turn the energy up to the required level in the plan.</li> </ul>

	2	Show the assistant how to manoeuvre the treatment head around the location	■	The assistant is taught by the physiotherapist responsible for the patient how to move the head in the gel around the treatment area
	3	Show the assistant how to monitor the patient during treatment.	■	The assistant is asked to watch the patient for any signs of distress and to listen to the patient's comments
	4	Show the assistant how to turn off the machine .	■	The assistant is shown how to turn all the knobs to zero and to withdraw the machine from the patient on hearing the buzzer go to end the treatment.
	5	Teach the assistant to tidy up patient and tidy away the equipment	■	The assistant is shown how to wipe coupling medium from patient and to tidy the equipment away and to return it ready for use by the team.
5	<b>Plan 5. Liaise with the physiotherapist</b>			
		Plan 5. Do 1 to establish planning, do 2 to set up operational communications		
	1	Show assistant planning aids		
	2	State the conditions when communication must be made verbally		
	3	Show the assistant how to arrange re-assessments in the physiotherapist's diary.	■	
6	<b>Plan 6. Do paperwork</b>			
		Plan 6. Do 1, then 2.		
	1	Show assistant how to sign helper card or write in the notes	■	The assistant is taught to date and initial the helper card each time the treatment has been carried out to plan.
	2	Show assistant how to complete the register of attendance	■	The assistant is taught to complete the register at the end of each session so that the patient's attendance is recorded

<b>5.1</b>	<b><i>Plan 5.1 Show the assistant planning aids</i></b>		
		Plan 5.1. Do 1	
	<b>1</b>	Show the assistant the helper cards and the diary planning	<p>The assistant is shown the helper cards, which have the written plan and space to record the treatment has been done. Diary planning and times allocated for treatments are explained along with access to diaries.</p>
<b>5.2</b>	<b><i>Plan 5.2 State when communication must be made verbally</i></b>		
		Plan 5.2 Do 1, 2 and 3	
	<b>1</b>	Set out rules on progress since last visit	<p>The assistant is taught to report any increase in symptoms since the last treatment and if the patient is</p>
	<b>2</b>	Set out rules on patient reaction to treatment	<p>The assistant is taught to report any signs of distress experienced by the patient during treatment</p>
	<b>3</b>	Set out rules on other problems affecting patient	<p>The assistant is taught to report to the physiotherapist any adverse changes in the patient's general condition</p>

Superord.	Plan	Task Analysis - Operations and Plans	Notes
0	<i>Teach assistant pulsed shortwave</i>		
		Plan 0. Having established level of competence, do 1 - 6 in order to prepare the assistant to practice.	
	1	Interpret the physiotherapist's plan	
	2	Prepare the patient	
	3	Prepare the equipment	
	4	Carry out the treatment	
	5	Liaise with physiotherapist	
	6	Complete paperwork	
1	<i>Interpret the physiotherapist's plan</i>		
		Plan 1. Do 1, then do 2	
	1	Explain that the patient's condition and the exact location for the treatment will be written down on the helper card	<ul style="list-style-type: none"> <li>■ The helper card is used as a performance aid and all information is recorded for the assistant. Complex terms are avoided. The card is customized for each patient</li> </ul>
	2	Explain the different parameters that will be used to describe the treatment settings	<ul style="list-style-type: none"> <li>■ All the settings that will be used during the treatments are explained and their position on the machines are pointed out.</li> </ul>
2	<i>Prepare the patient</i>		
		Plan 2. Do 1, if progress is satisfactory, do 2 following the plan. Do 3. If unsatisfactory, Exit and do plan 5.	
	1	Teach the assistant to establish the patient's progress since the last visit.	<ul style="list-style-type: none"> <li>■ The patient is asked how they have been since the last visit. The assistant listens and if there have been any problems or if the patient is worse, the physiotherapist is informed before any treatment is given.</li> </ul>
	2	Show the assistant how to prepare the patient, so that the treatment location is accessible and supported and the patient is comfortable.	<ul style="list-style-type: none"> <li>■ The assistant is shown how to arrange the common treatment locations, so that the patient is comfortable and warm, with their dignity respected</li> </ul>
	3	Show the assistant how to involve patient in the treatment	<ul style="list-style-type: none"> <li>■ Teach the assistant to ask the patient to report any sensations during treatment felt in the treatment area. Teach the assistant to know what should be felt.</li> </ul>

<b>3</b>	<b><i>Plan 3. Prepare the equipment</i></b>		
		Pan 3. Do 1, then 2 until the assistant can demonstrate that they can follow the physiotherapist's plan	
	<b>1</b>	Show the assistant how to arrange the machine with the applicator in the position in the physiotherapist's plan	■ The assistant is made familiar with all the different applications that the physiotherapist may use and is shown how to place the electrodes or applicators, with any safety measures explained.
	<b>2</b>	Show the assistant how to arrange the settings as stated in the physiotherapist's plan	■ The assistant is shown the control knobs for the different parameters. The parameters are explained so that the assistant is familiar with the range of settings, their operational sequence and significance
<b>4</b>	<b><i>Carry out the treatment</i></b>		
		Plan 4. Do 1, then throughout do 2, any problems, Exit and do plan 5. When the buzzer goes do 3, then 4 to finish treatment.	
	<b>1</b>	Teach the assistant how to turn on and tune the machine.	■ The assistant is shown how to tune the machines manually and automatically, and then how to set the machine into operation for the required time.
	<b>2</b>	Show the assistant how to monitor the patient during treatment.	■ The assistant is asked to respond to any calls for assistance from the patient, and to respond to the buzzer at the end of the treatment
	<b>3</b>	Show the assistant how to turn off the machine .	■ The assistant is shown how to turn all the knobs to zero and to withdraw the machine from the patient.
	<b>4</b>	Teach the assistant to tidy away the equipment	■ The assistant is shown how the equipment is tidied away and where it is returned to ready for use by the team.
<b>5</b>	<b><i>Plan 5. Liaise with the physiotherapist</i></b>		
		Plan 5. Do 1 to establish planning, do 2 to set up operational communications	
	<b>1</b>	Show assistant planning aids	

	2	State the conditions when communication must be made verbally		
	3	Show the assistant how to arrange re-assessments in the physiotherapist's diary.	■	
6	<b>Plan 6. Do paperwork</b>			
		Plan 6. Do 1, then 2.		
	1	Show assistant how to sign helper card or write in the notes	■	The assistant is taught to date and initial the helper card each time the treatment has been carried out to plan.
	2	Show assistant how to complete the register of attendance	■	The assistant is taught to complete the register at the end of each session so that the patient's attendance is recorded
5.1	<b>Plan 5.1 Show the assistant planning aids</b>			
		Plan 5.1. Do 1		
	1	Show the assistant the helper cards and the diary planning	■	The assistant is shown the helper cards, which have the written plan and space to record the treatment has been done. Diary planning and times allocated for treatments are explained along with access to diaries.
5.2	<b>Plan 5.2 State when communication must be made verbally</b>			
		Plan 5.2 Do 1, 2 and 3		
	1	Set out rules on progress since last visit	■	The assistant is taught to report any increase in symptoms since the last treatment and if the patient is symptom free.
	2	Set out rules on patient reaction to treatment	■	The assistant is taught to report any signs of distress experienced by the patient during treatment
	3	Set out rules on other problems affecting patient	■	The assistant is taught to report to the physiotherapist any adverse changes in the patient's general condition

Superord.	Plan	Task Analysis - Operations and Plans	Notes
<b>0</b>	<b><i>Teach assistant laser therapy</i></b>		
		Plan 0. Having established level of competence, do 1 - 6 in order to prepare the assistant to practice.	
	<b>1</b>	Interpret the physiotherapist's plan	
	<b>2</b>	Prepare the patient	
	<b>3</b>	Prepare the equipment	
	<b>4</b>	Carry out the treatment	
	<b>5</b>	Liaise with physiotherapist	
	<b>6</b>	Complete paperwork	
<b>1</b>	<b><i>Interpret the physiotherapist's plan</i></b>		
		Plan 1. Do 1, then do 2	
	<b>1</b>	Explain that the patient's condition and the exact location for the treatment will be written down on the helper card	<p>The helper card is used as a performance aid and all information is recorded for the assistant. Complex terms are avoided. The card is customized for each patient</p>
	<b>2</b>	Explain the different parameters that will be used to describe the treatment settings	<p>All the settings that will be used during the treatments are explained and their position on the machines are pointed out.</p>
<b>2</b>	<b><i>Prepare the patient</i></b>		
		Plan 2. Do 1, if progress is satisfactory, do 2 - 3, then do 4 following the plan. If unsatisfactory, Exit and do plan 5.	
	<b>1</b>	Teach the assistant to establish the patient's progress since the last visit.	<p>The patient is asked how they have been since the last visit. The assistant listens and if there have been any problems or if the patient is worse, the physiotherapist is informed before any treatment is given.</p>
	<b>2</b>	Show the assistant how to prepare the patient, so that the treatment location is accessible and supported and the patient is comfortable.	<p>The assistant is shown how to arrange the common treatment locations, so that the patient is comfortable and warm, with their dignity respected</p>



	3	Show the assistant how to involve patient in the treatment	■ Teach the assistant to ask the patient to report any sensations during treatment felt in the treatment area. Teach the assistant to know what should be felt.
	4	Show the assistant how to observe safety rules on using lasers	■ The assistant is shown the rules on safe practice for use with laser. The rules are explained in detail until the assistant demonstrates full understanding and compliance operationally.
3	<b>Plan 3. Prepare the equipment</b>		
		Pan 3. Do 1, then 2 until the assistant can demonstrate that they can follow the physiotherapist's plan	
	1	Show the assistant how to arrange the machine with the probe or cluster held in contact and at right angles to the tissues, as in the physiotherapist's plan	■ The assistant is made familiar with the different treatment probes and clusters, with care of the equipment and safety measures explained.
	2	Show the assistant how to arrange the settings as stated in the physiotherapist's plan	■ The assistant is shown the control knobs for the different parameters. The parameters are explained so that the assistant is familiar with the range of settings, their operational sequence and significance
4	<b>Carry out the treatment</b>		
		Plan 4. Do 1, then 2, throughout do 3 and 4, any problems, Exit and do plan 5. When the time set in the plan is reached do 5, then 6.	
	1	Teach the assistant to ensure that all safety measures have been applied prior to starting the machine.	■ The assistant is taught to ensure that all people in the treatment area are wearing goggles, that a safety sign is displayed outside the cubicle, and that the key is only inserted when treatment is ready to commence.

	1	Teach the assistant how to set and turn on the machine.	■	The assistant is shown how to select the treatment probe wavelength and frequency, and to watch the time in seconds. The probe or cluster are placed in the area before the machine is turned on.
	2	Show the assistant how to carry out the laser treatment	■	The assistant is taught to hold the probe or cluster in the treatment position, to maintain contact as in the physiotherapist's plan and to keep the contact switch depressed until the dose time registers on the clock. The switch is then released before the probe/cluster is moved.
	3	Show the assistant how to monitor the patient during treatment.	■	The assistant is asked to watch the patient for any signs of distress and to listen to the patient's comments
	4	Show the assistant how to turn off the machine .	■	The assistant is shown how to turn all the knobs to zero and to withdraw the probe or cluster after the machine is turned off. Then the goggles may be taken off.
	5	Teach the assistant to tidy away the equipment	■	The assistant is shown how to tidy the equipment away and to return the key to the designated cupboard and the machine ready for use by the team.
5	<b>Plan 5. Liaise with the physiotherapist</b>			
		Plan 5. Do 1 to establish planning, do 2 to set up operational communications		
	1	Show assistant planning aids		
	2	State the conditions when communication must be made verbally		
	3	Show the assistant how to arrange re-assessments in the physiotherapist's diary.	■	

<b>6</b>	<b><i>Plan 6. Do paperwork</i></b>		
		Plan 6. Do 1, then 2.	
	<b>1</b>	Show assistant how to sign helper card or write in the notes	<p>■ The assistant is taught to date and initial the helper card each time the treatment has been carried out to plan.</p>
	<b>2</b>	Show assistant how to complete the register of attendance	<p>■ The assistant is taught to complete the register at the end of each session so that the patient's attendance is recorded</p>
<b>5.1</b>	<b><i>Plan 5.1 Show the assistant planning aids</i></b>		
		Plan 5.1. Do 1	
	<b>1</b>	Show the assistant the helper cards and the diary planning	<p>■ The assistant is shown the helper cards, which have the written plan and space to record the treatment has been done. Diary planning and times allocated for treatments are explained along with access to diaries.</p>
<b>5.2</b>	<b><i>Plan 5.2 State when communication must be made verbally</i></b>		
		Plan 5.2 Do 1, 2 and 3	
	<b>1</b>	Set out rules on progress since last visit	<p>■ The assistant is taught to report any increase in symptoms since the last treatment and if the patient is symptom free.</p>
	<b>2</b>	Set out rules on patient reaction to treatment	<p>■ The assistant is taught to report any signs of distress experienced by the patient during treatment</p>
	<b>3</b>	Set out rules on other problems affecting patient	<p>■ The assistant is taught to report to the physiotherapist any adverse changes in the patient's general condition</p>

Superord.	Plan	Task Analysis - Operations and Plans	Notes
0	<b>Teach assistant interferential therapy</b>		
		Plan 0. Having established level of competence, do 1 - 6 in order to prepare the assistant to practice.	
	1	Interpret the physiotherapist's plan	
	2	Prepare the patient	
	3	Prepare the equipment	
	4	Carry out the treatment	
	5	Liaise with physiotherapist	
	6	Complete paperwork	
1	<b>Interpret the physiotherapist's plan</b>		
		Plan 1. Do 1, then do 2	
	1	Explain that the patient's condition and the exact location for the treatment will be written down on the helper card	<ul style="list-style-type: none"> <li>■ The helper card is used as a performance aid and all information is recorded for the assistant. Complex terms are avoided. The card is customized for each patient</li> </ul>
	2	Explain the different parameters that will be used to describe the treatment settings	<ul style="list-style-type: none"> <li>■ All the settings that will be used during the treatments are explained and their position on the machines are pointed out.</li> </ul>
2	<b>Prepare the patient</b>		
		Plan 2. Do 1, if progress is satisfactory, do 2 following the plan. Do 3. If unsatisfactory, Exit and do plan 5.	
	1	Teach the assistant to establish the patient's progress since the last visit.	<ul style="list-style-type: none"> <li>■ The patient is asked how they have been since the last visit. The assistant listens and if there have been any problems or if the patient is worse, the physiotherapist is informed before any treatment is given.</li> </ul>
	2	Show the assistant how to prepare the patient, so that the treatment location is accessible and supported and the patient is comfortable.	<ul style="list-style-type: none"> <li>■ The assistant is shown how to arrange the common treatment locations, so that the patient is comfortable and warm, with their dignity respected</li> </ul>
	3	Show the assistant how to involve patient in the treatment	<ul style="list-style-type: none"> <li>■ Teach the assistant to ask the patient to report any sensations during treatment felt in the treatment area. Teach the assistant to know what should be felt.</li> </ul>
3	<b>Plan 3. Prepare the equipment</b>		
		Plan 3. Do 1, then 2 until the assistant can demonstrate that they can follow the physiotherapist's plan	

	1	Show the assistant how to arrange the machine with the applicator in the position in the physiotherapist's plan	■	The assistant is made familiar with suction and electrode application of treatment, and the amount of saturation required on the sponges. The two currents are explained using colour codes and their position on common locations explained.
	2	Show the assistant how to arrange the settings as stated in the physiotherapist's plan	■	The assistant is shown the control knobs for the different parameters. The parameters are explained so that the assistant is familiar with the range of settings, their operational sequence and significance
4	<i>Carry out the treatment</i>			
		Plan 4. Do 1, then throughout do 2, any problems, Exit and do plan 5. When the buzzer goes do 3, then 4 to finish treatment.		
	1	Teach the assistant how to turn on the suction machine and turn on the treatment.	■	The assistant is shown how to apply suction to the minimal amount necessary and to set the parameters then gradually turn up the current until the patient feels it, then after a minute as the feelings lessen to turn the intensity up again to the set level
	2	Show the assistant how to monitor the patient during treatment.	■	The assistant is asked to respond to any calls for assistance from the patient, and to respond to the buzzer at the end of the treatment
	3	Show the assistant how to turn off the machine .	■	The assistant is shown how to turn all the knobs to zero and to withdraw the machine from the patient.
	4	Teach the assistant to tidy away the equipment	■	The assistant is shown how the equipment is tidied away and where it is returned to ready for use by the team.
5	<i>Plan 5. Liaise with the physiotherapist</i>			
		Plan 5. Do 1 to establish planning, do 2 to set up operational communications		
	1	Show assistant planning aids		
	2	State the conditions when communication must be made verbally		

	3	Show the assistant how to arrange re-assessments in the physiotherapist's diary.	■	
6	<b>Plan 6. Do paperwork</b>			
		Plan 6. Do 1, then 2.		
	1	Show assistant how to sign helper card or write in the notes	■	The assistant is taught to date and initial the helper card each time the treatment has been carried out to plan.
	2	Show assistant how to complete the register of attendance	■	The assistant is taught to complete the register at the end of each session so that the patient's attendance is recorded
5.1	<b>Plan 5.1 Show the assistant planning aids</b>			
		Plan 5.1. Do 1		
	1	Show the assistant the helper cards and the diary planning	■	The assistant is shown the helper cards, which have the written plan and space to record the treatment has been done. Diary planning and times allocated for treatments are explained along with access to diaries.
5.2	<b>Plan 5.2 State when communication must be made verbally</b>			
		Plan 5.2 Do 1, 2 and 3		
	1	Set out rules on progress since last visit	■	The assistant is taught to report any increase in symptoms since the last treatment and if the patient is symptom free.
	2	Set out rules on patient reaction to treatment	■	The assistant is taught to report any signs of distress experienced by the patient during treatment
	3	Set out rules on other problems affecting patient	■	The assistant is taught to report to the physiotherapist any adverse changes in the patient's general condition

Superord.	Plan	Task Analysis - Operations and	Notes
0	<i>Teach assistant cervical traction</i>		
		Plan 0. Having established level of competence, do 1 - 6 in order to prepare the assistant to practice.	
	1	Interpret the physiotherapist's plan	
	2	Prepare the patient	
	3	Prepare the equipment	
	4	Carry out the treatment	
	5	Liaise with physiotherapist	
	6	Complete paperwork	
1	<i>Interpret the physiotherapist's plan</i>		
		Plan 1. Do 1, then do 2	
	1	Explain that the patient's condition and the position for the traction will be written down on the helper card	■ The helper card is used as a performance aid and all information is recorded for the assistant. Complex terms are avoided. The card is customized for each patient
	2	Explain the poundage and the timing used for traction	■
2	<i>Prepare the patient</i>		
		Plan 2. Do 1, if progress is satisfactory, do 2 following the plan. If unsatisfactory, Exit and do plan 5.	
	1	Teach the assistant to establish the patient's progress since the last visit.	■ The patient is asked how they have been since the last visit. The assistant listens and if there have been any problems, if the patient is worse or if the symptom area has changed, the physiotherapist is informed before traction is applied.
	2	Show the assistant how to prepare the patient, so that the patient is comfortable.	■ The assistant is shown how to make the patient comfortable, supporting their arms on a pillow. The harness is applied lined with a tissue.
	3	Show the assistant how to involve the patient during treatment.	■ The assistant is taught to ask the patient to use the nurse call bell to contact them if they experience any new or more intense discomfort during treatment, and to call at the end of the set time.
3	<i>Plan 3. Prepare the equipment</i>		
		Plan 3. Do 1 until the assistant can demonstrate that they can follow the physiotherapist's plan	

	1	Show the assistant how to arrange, apply and release the traction equipment to the poundage and in the position in the physiotherapist's plan	■	The assistant is made familiar with the traction apparatus, the means of applying the set poundage, with any safety measures explained.
4	<i>Carry out the treatment</i>			
		Plan 4. Do 1, then throughout do 2, any problems, Exit and do plan 5. When the buzzer goes do 3, then 4 to finish treatment.		
	1	Teach the assistant how to manually apply traction gradually to the set amount.	■	The assistant is shown how to apply traction manually and gradually, and then how to secure the traction at the poundage, and to set the timer.
	2	Show the assistant how to monitor the patient during treatment.	■	The assistant is asked to respond to any calls for assistance from the patient, and to respond to the timer bell at the end of the treatment
	3	Show the assistant how to release the traction.	■	The assistant is shown how to take the traction weight and manually release the traction gradually.
	4	Teach the assistant to monitor the patient after traction.	■	The assistant is shown how to monitor the patient for five minutes. A hot pack may be applied or the patient encourage to rest.
5	<i>Plan 5. Liaise with the physiotherapist</i>			
		Plan 5. Do 1 to establish planning, do 2 to set up operational communications		
	1	Show assistant planning aids		
	2	State the conditions when communication must be made verbally		
	3	Show the assistant how to arrange re-assessments in the physiotherapist's diary.	■	
6	<i>Plan 6. Do paperwork</i>			
		Plan 6. Do 1, then 2.		
	1	Show assistant how to sign helper card or write in the notes	■	The assistant is taught to date and initial the helper card each time the treatment has been carried out to plan.



	2	Show assistant how to complete the register of attendance	■	The assistant is taught to complete the register at the end of each session so that the patient's attendance is recorded
5.1	<i>Plan 5.1 Show the assistant planning aids</i>			
		Plan 5.1. Do 1		
	1	Show the assistant the helper cards and the diary planning	■	The assistant is shown the helper cards, which have the written plan and space to record the treatment has been done. Diary planning and times allocated for treatments are explained along with access to diaries.
5.2	<i>Plan 5.2 State when communication must be made verbally</i>			
		Plan 5.2 Do 1, 2 and 3		
	1	Set out rules on progress since last visit	■	The assistant is taught to report any increase in symptoms since the last treatment and if the patient is symptom free.
	2	Set out rules on patient reaction to treatment	■	The assistant is taught to report any signs of distress experienced by the patient during treatment
	3	Set out rules on other problems affecting patient	■	The assistant is taught to report to the physiotherapist any adverse changes in the patient's general condition

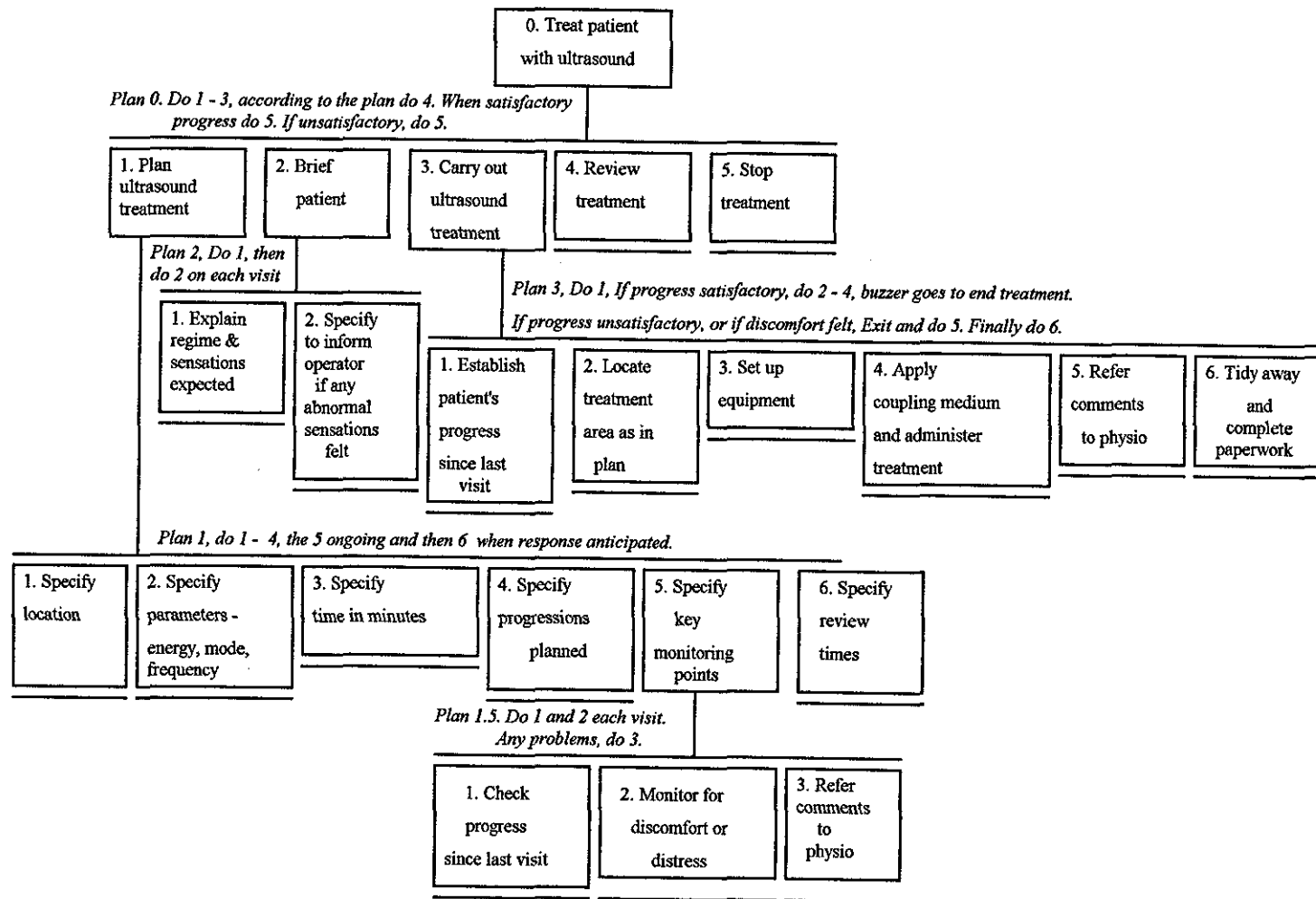
Superord.	Plan	Task Analysis - Operations and	Notes
0	<i>Teach assistant lumbar traction</i>		
		Plan 0. Having established level of competence, do 1 - 6 in order to prepare the assistant to practice.	
	1	Interpret the physiotherapist's plan	
	2	Prepare the patient	
	3	Prepare the equipment	
	4	Carry out the treatment	
	5	Liaise with physiotherapist	
	6	Complete paperwork	
1	<i>Interpret the physiotherapist's plan</i>		
		Plan 1. Do 1, then do 2	
	1	Explain that the patient's condition and the position for the traction will be written down on the helper card	<ul style="list-style-type: none"> <li>■ The helper card is used as a performance aid and all information is recorded for the assistant. Complex terms are avoided. The card is customized for each patient</li> </ul>
	2	Explain the poundage and the timing used for traction	<ul style="list-style-type: none"> <li>■</li> </ul>
2	<i>Prepare the patient</i>		
		Plan 2. Do 1, if progress is satisfactory, do 2 following the plan. Do 3. If unsatisfactory, Exit and do plan 5.	
	1	Teach the assistant to establish the patient's progress since the last visit.	<ul style="list-style-type: none"> <li>■ The patient is asked how they have been since the last visit. The assistant listens and if there have been any problems, if the patient is worse or if the symptom area has changed, the physiotherapist is informed before traction is applied.</li> </ul>
	2	Show the assistant how to prepare the patient, so that the patient is comfortable.	<ul style="list-style-type: none"> <li>■ The assistant is shown how to make the patient comfortable, supporting their legs on a stool if in the plan. The harnesses are applied lined with a towels.</li> </ul>

	3	Show the assistant how to involve the patient during treatment.	■	The assistant is taught to ask the patient to use the nurse call bell to contact them if they experience any new or more intense discomfort during treatment, and to call at the end of the set time.
3	<i>Plan 3. Prepare the equipment</i>			
		Plan 3. Do 1 until the assistant can demonstrate that they can follow the physiotherapist's plan		
	1	Show the assistant how to arrange, apply and release the traction equipment to the poundage and in the position in the physiotherapist's plan	■	The assistant is made familiar with the traction apparatus, the means of opening the plinth, sitting and applying the poundage, with any safety measures explained.
4	<i>Carry out the treatment</i>			
		Plan 4. Do 1, then throughout do 2, any problems, Exit and do plan 5. When the buzzer goes do 3, then 4 to finish treatment.		
	1	Teach the assistant how to apply traction gradually to the set amount.	■	The assistant is shown how to apply traction, and how to ensure that the patient can release the traction and call for assistance if necessary. The timing arrangement is also explained.
	2	Show the assistant how to monitor the patient during treatment.	■	The assistant is asked to respond to any calls for assistance from the patient, and to respond to the timer bell at the end of the treatment
	3	Show the assistant how to release the traction.	■	The assistant is shown how to take the harnesses off and how to gradually sit the patient up.
	4	Teach the assistant to monitor the patient after traction.	■	The assistant is shown how to monitor the patient for five minutes. A hot pack may be applied or the patient encouraged to rest.
5	<i>Plan 5. Liaise with the physiotherapist</i>			
		Plan 5. Do 1 to establish planning, do 2 to set up operational communications		

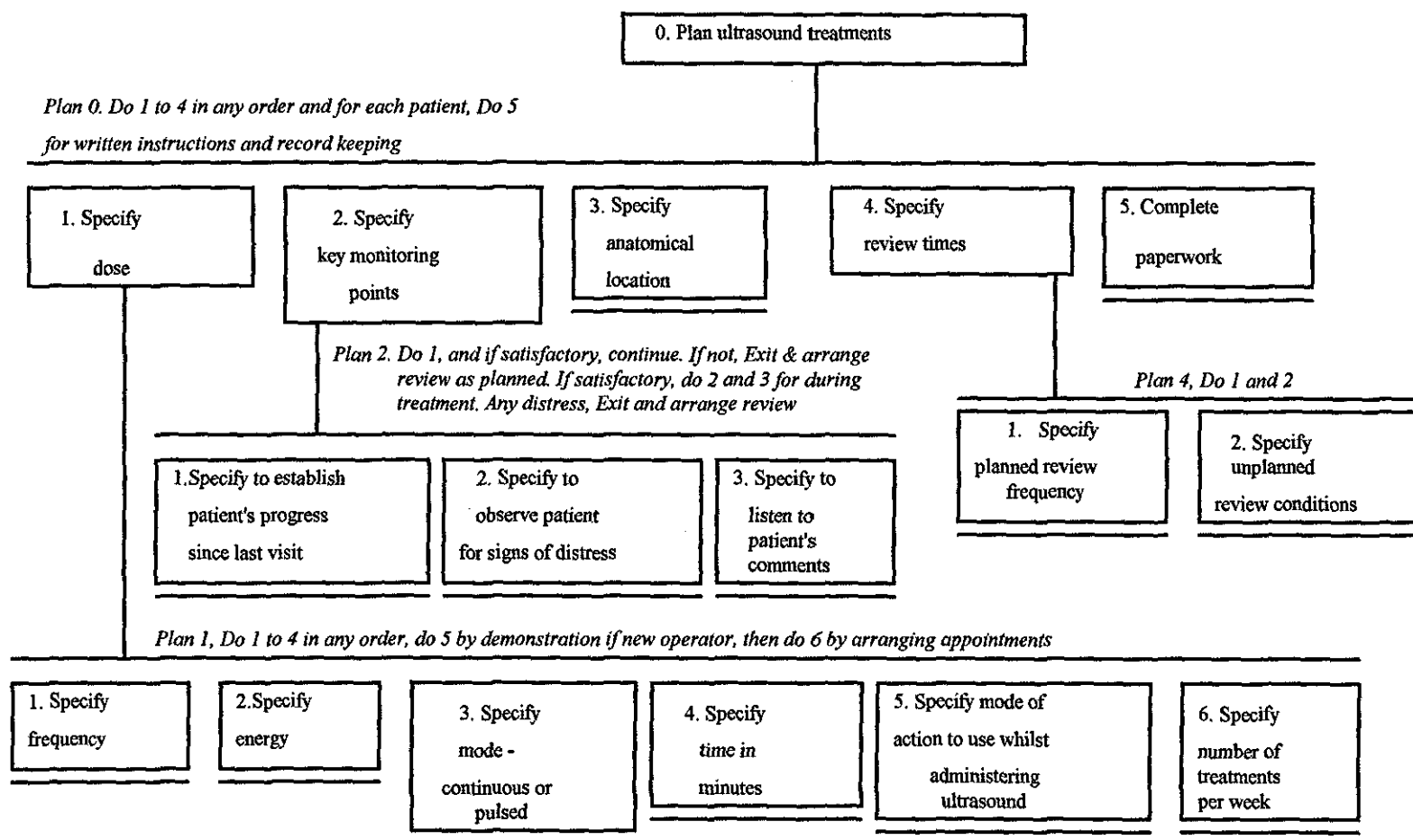
	1	Show assistant planning aids		
	2	State the conditions when communication must be made verbally		
	3	Show the assistant how to arrange re-assessments in the physiotherapist's diary.	■	
6	<b>Plan 6. Do paperwork</b>			
		Plan 6. Do 1, then 2.		
	1	Show assistant how to sign helper card or write in the notes	■	The assistant is taught to date and initial the helper card each time the treatment has been carried out to plan.
	2	Show assistant how to complete the register of attendance	■	The assistant is taught to complete the register at the end of each session so that the patient's attendance is recorded
5.1	<b>Plan 5.1 Show the assistant planning aids</b>			
		Plan 5.1. Do 1		
	1	Show the assistant the helper cards and the diary planning	■	The assistant is shown the helper cards, which have the written plan and space to record the treatment has been done. Diary planning and times allocated for treatments are explained along with access to diaries.
5.2	<b>Plan 5.2 State when communication must be made verbally</b>			
		Plan 5.2 Do 1, 2 and 3		
	1	Set out rules on progress since last visit	■	The assistant is taught to report any increase in symptoms since the last treatment and if the patient is symptom free.
	2	Set out rules on patient reaction to treatment	■	The assistant is taught to report any signs of distress experienced by the patient during treatment
	3	Set out rules on other problems affecting patient	■	The assistant is taught to report to the physiotherapist any adverse changes in the patient's general condition

## **APPENDIX SIX**

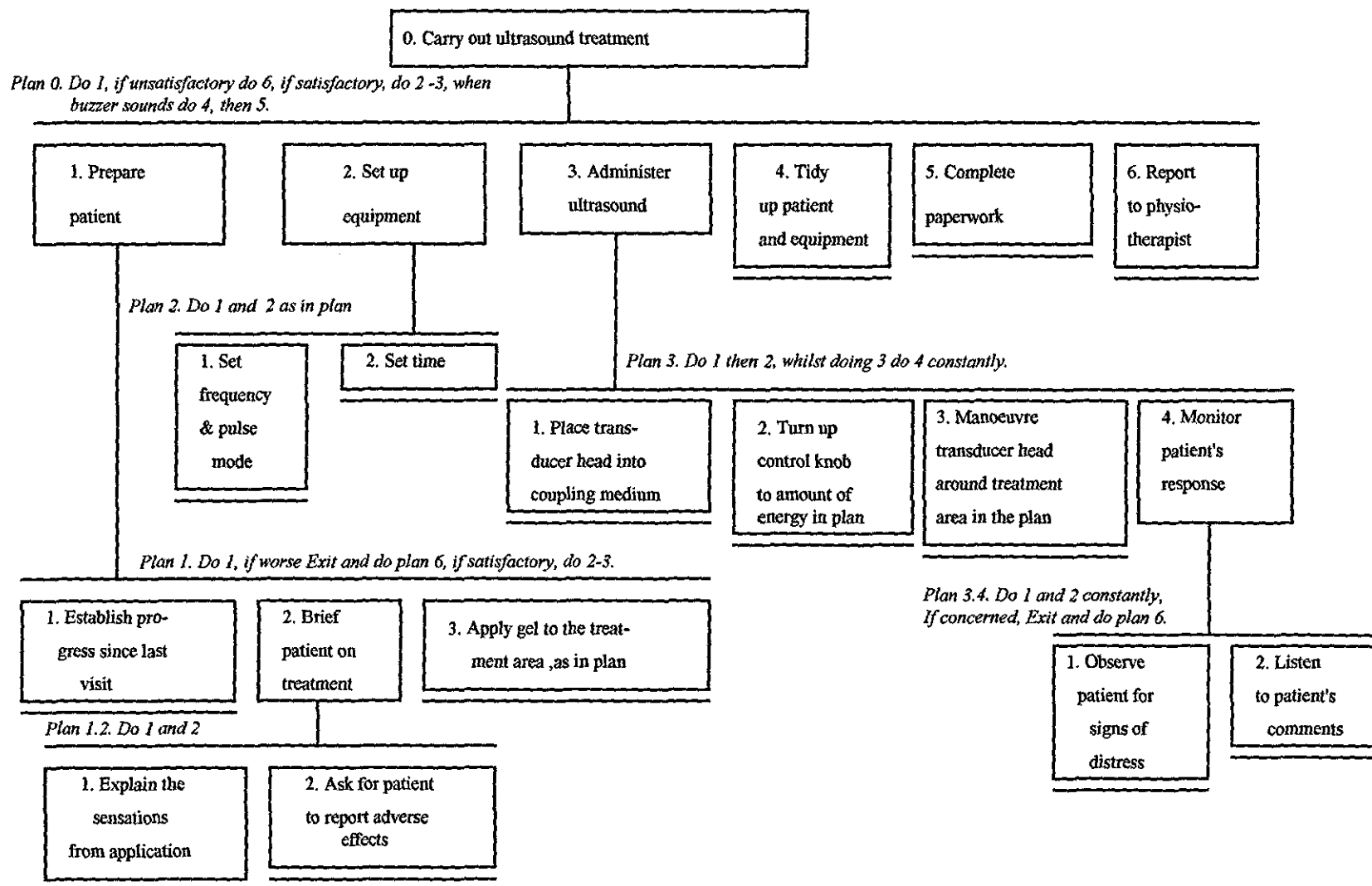
### **EXAMPLES OF TASK ANALYSIS IN PHYSIOTHERAPY**



Hierarchical task analysis of ultrasound

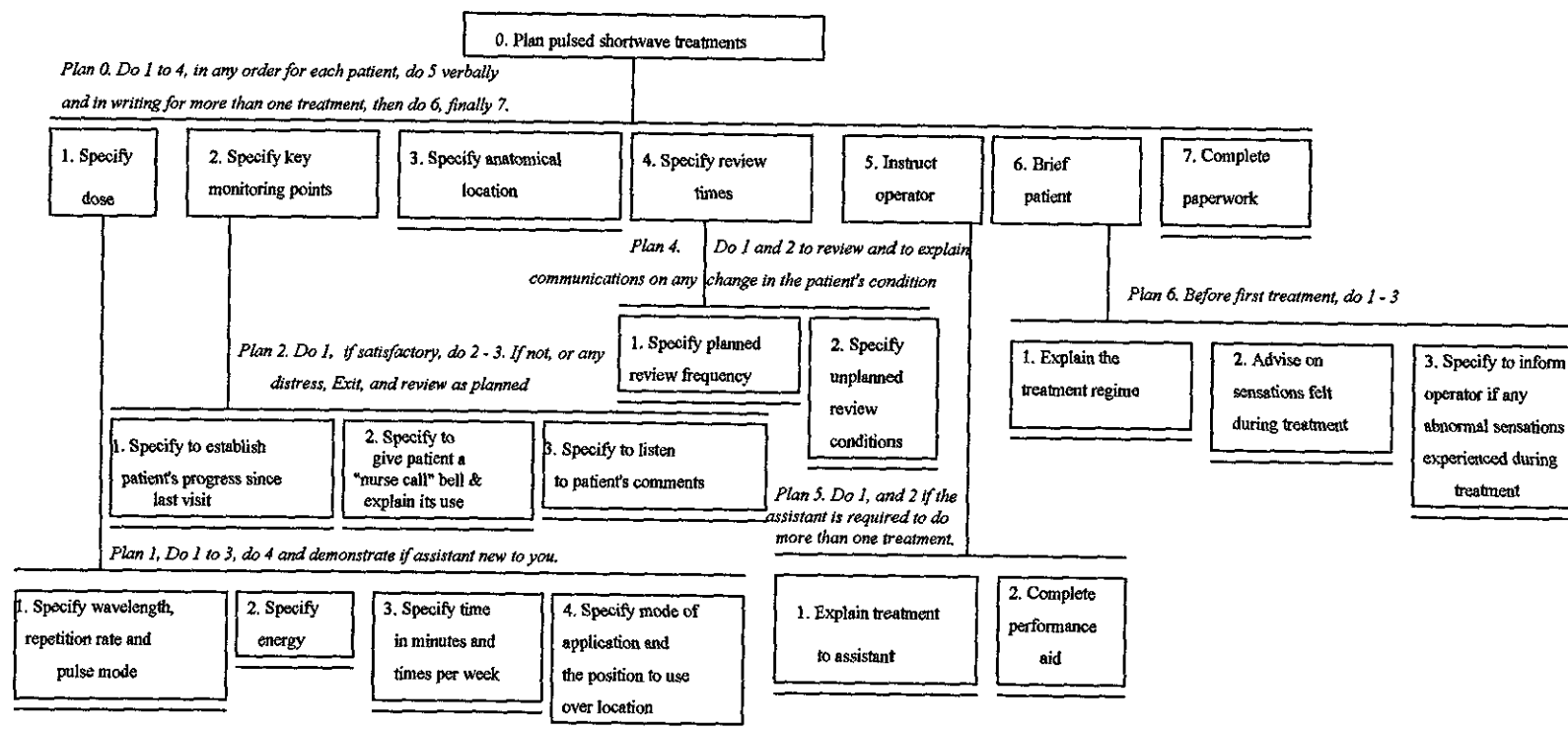


Physiotherapist's hierarchical task analysis of ultrasound

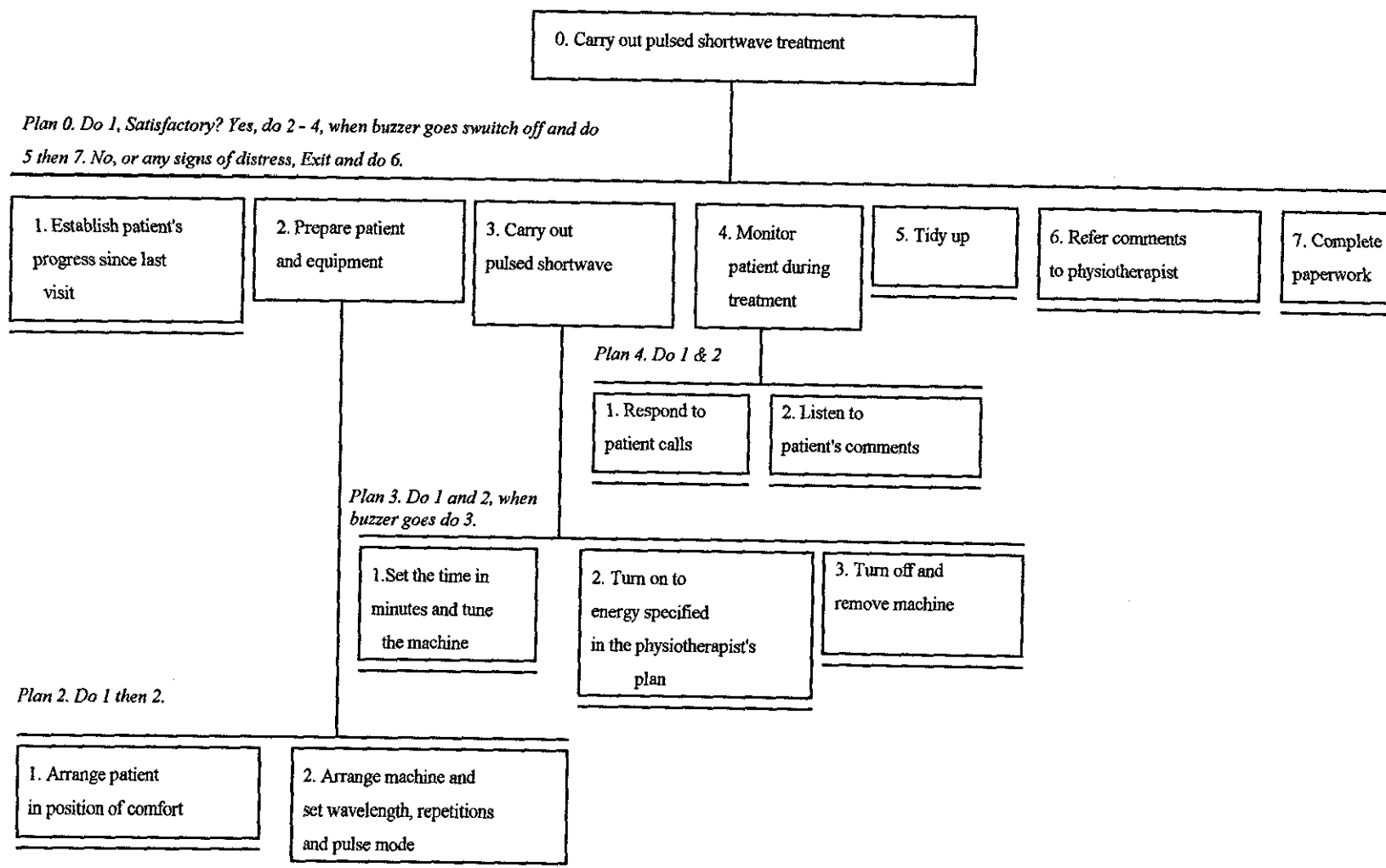


Hierarchical task analysis of the assistant's role in ultrasound treatments

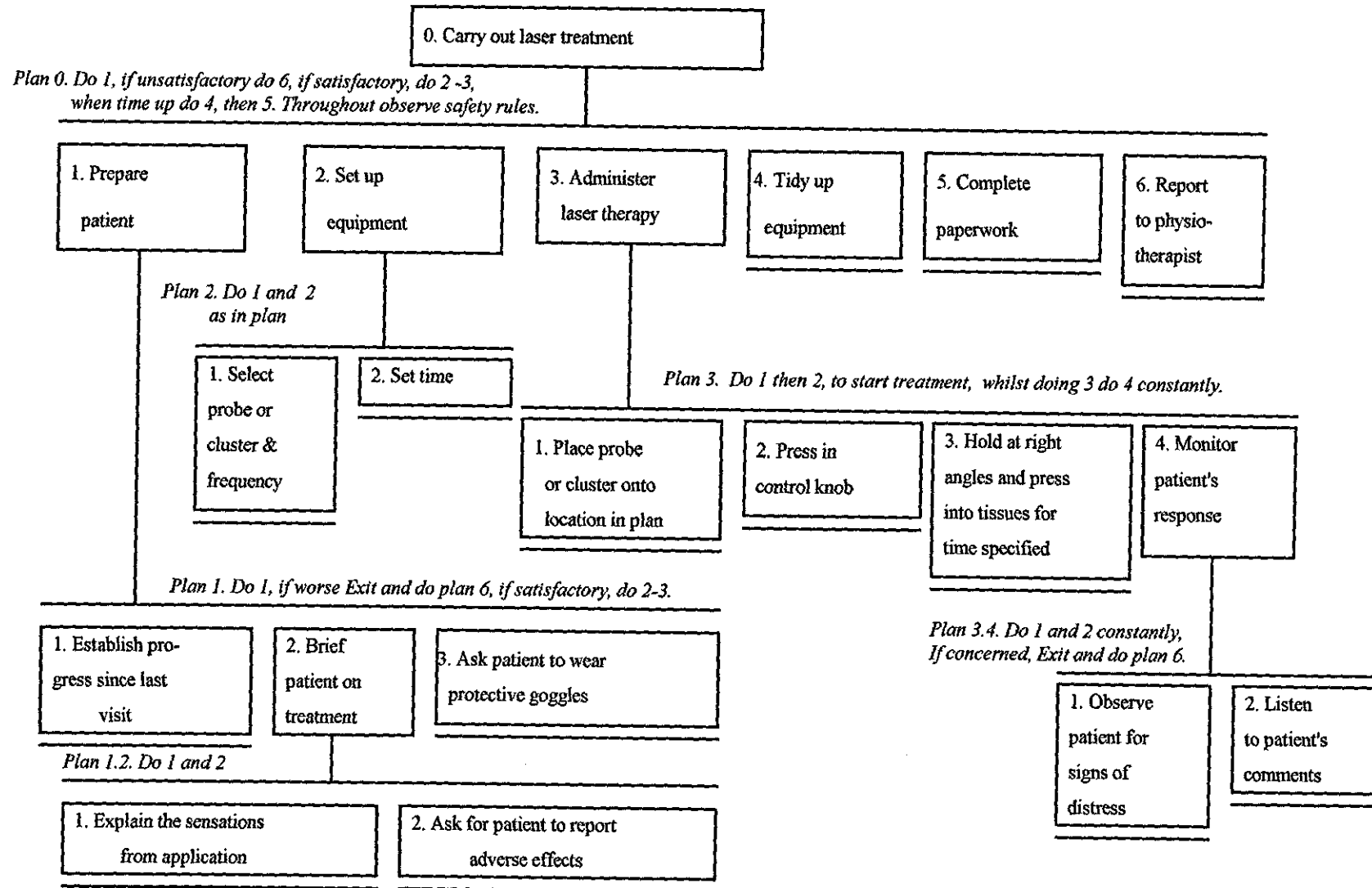




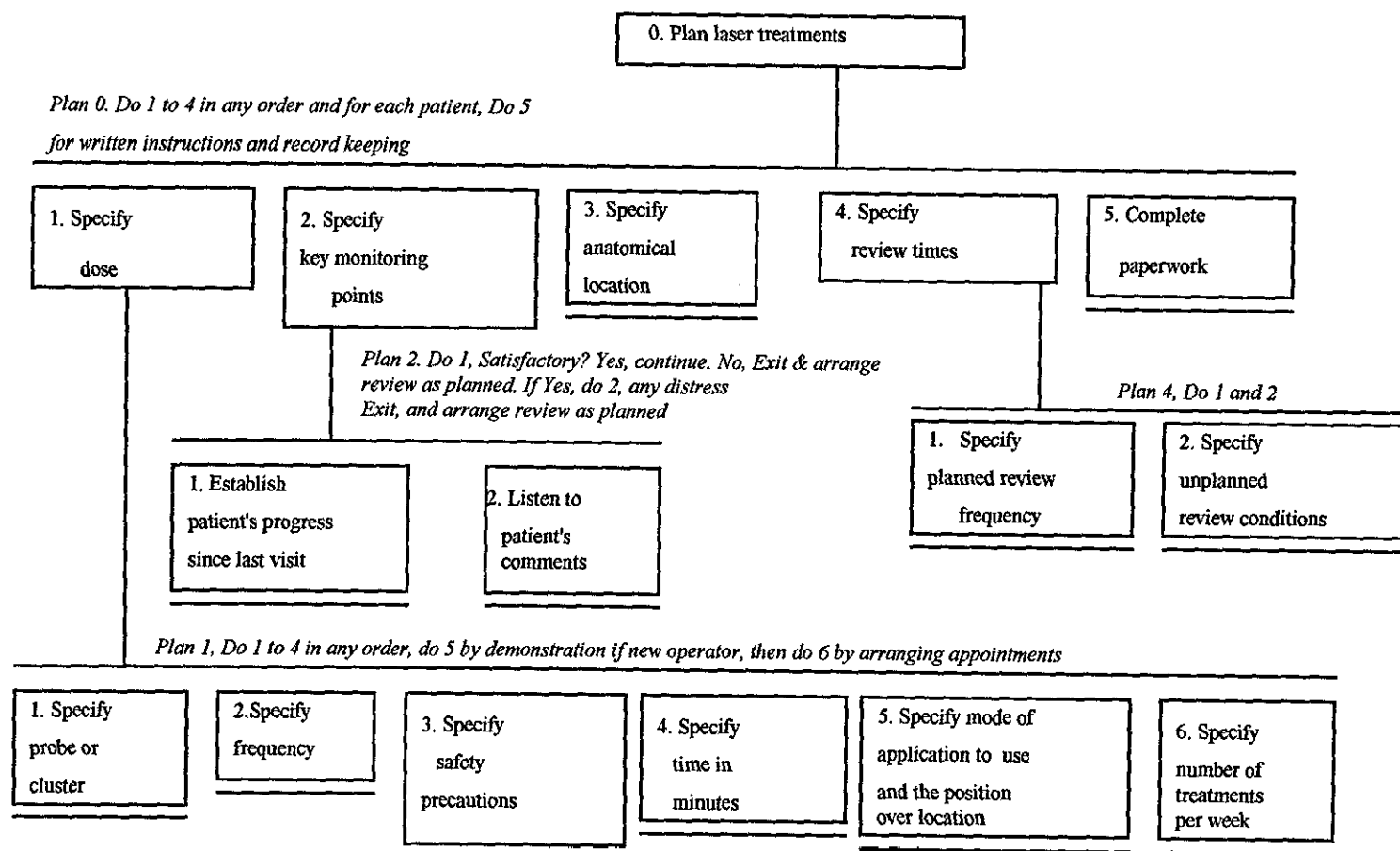
Hierarchical task analysis of the physiotherapist's role in pulsed shortwave



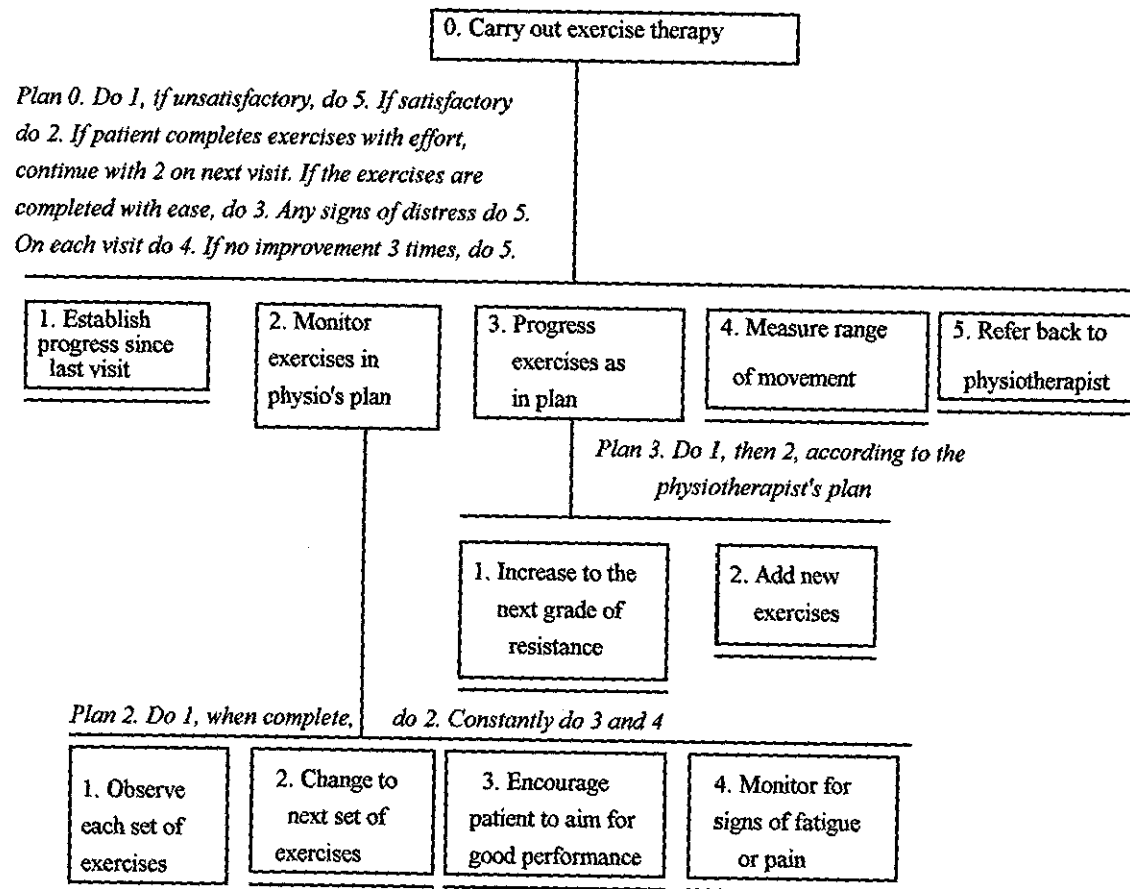
Hierarchical task analysis of the assistant's role in pulsed shortwave.



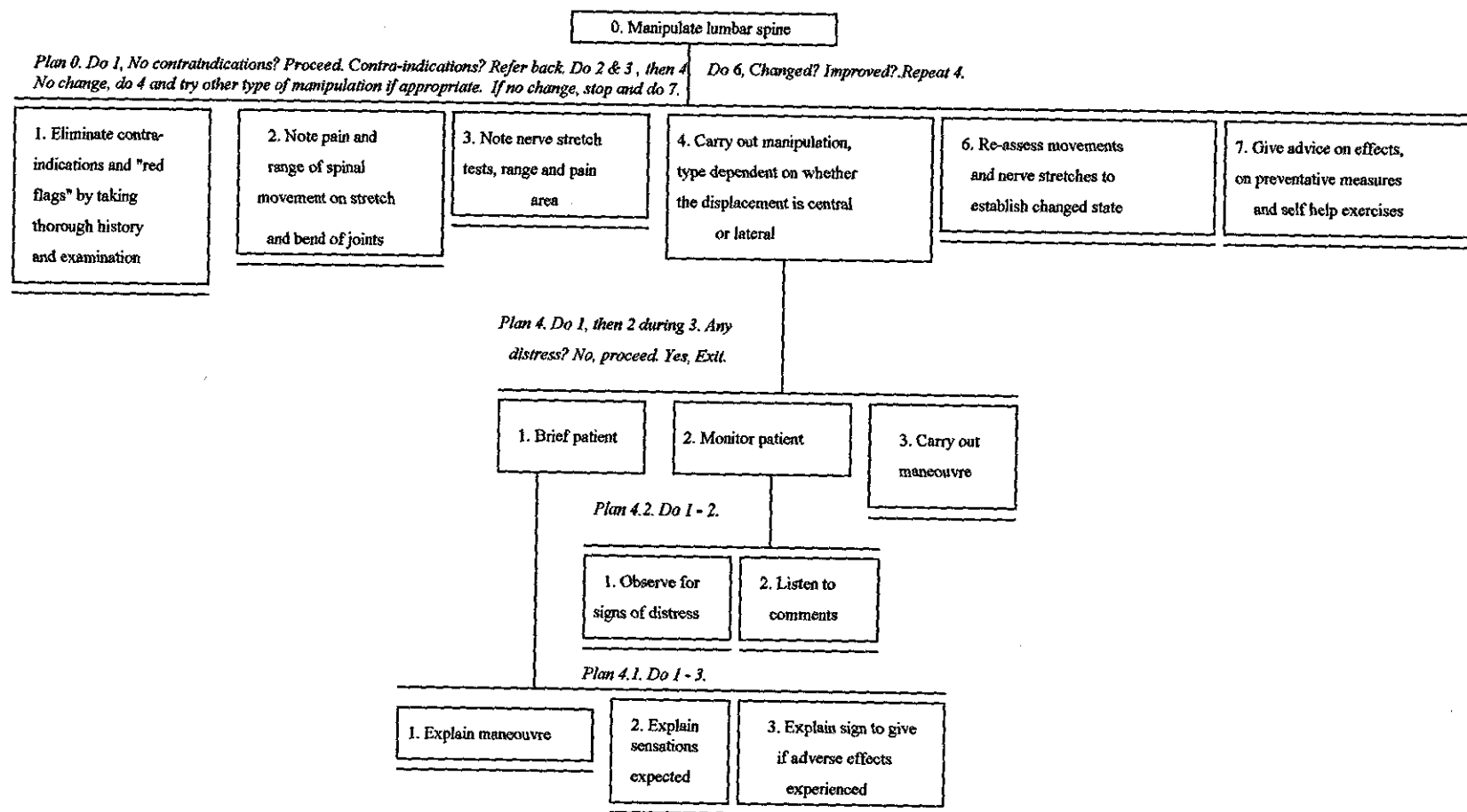
The hierarchical task analysis of assistant's role in laser therapy



Hierarchical task analysis of physiotherapist's role in laser therapy



Hierarchical task analysis of the assistant's role in knee exercises



Hierarchical task analysis of physiotherapist's role in manipulation

