

## **RESEARCH BASED PRACTICE ON THE DISTRICT**

**A study to test whether research findings can influence district nursing practice and to explore any associations between organisational factors in the reformed NHS and clinical research utilisation.**

**Thesis submitted in accordance with the requirements of the University of Liverpool for the degree of Doctor of Philosophy in the Faculty of Medicine.**

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## **DECLARATION**

No portion of the work referred to in this thesis has been submitted in support of an application for another degree or qualification in this or any other university or institute of learning.

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## ABSTRACT

In the National Health Service of the 1990's, with its increasing emphasis on efficient and cost effective services, the need for clinical practices to be based on research evidence has become an important issue for all health professionals.

Although there is considerable debate within the nursing profession about research utilisation there is relatively little empirical evidence illustrating the theoretical and practical implications of developing research based practice. Much of the understanding about research utilisation in nursing has been based on a model which describes the diffusion of information into practice as a passive process, but more recent research reported in the medical literature has suggested that active dissemination strategies are more effective in bringing about change in clinical practice. However, there are no studies which are focused on research utilisation by nurses working in the community.

In this context this study was designed to test whether it was possible for research findings to influence district nurses' knowledge and reported practice and also to explore any associations between the management of district nursing services in the reformed NHS and the utilisation of research findings by district nurses.



A two part study was conducted in 5 health authorities in an English health region. For the first part of the study a non-randomised, pre-test/post-test experimental design was utilised, with a control group to estimate interactive effects of pre-testing. Out of a population of 222 eligible district nurses 171 were sampled at pre-test and 130 at post-test.

Using instruments developed for the study, a baseline measure was taken of the extent to which all district nurses were using research findings in relation to the care and management of patients with leg ulcers, and from this a score was computed. A means of active dissemination of clinical research findings was developed for the study, and nurses in the experimental group were then exposed to relevant clinical research findings. Six weeks later all district nurses were re-tested and measured changes in the experimental and control groups scores were subjected to statistical analysis.

The study found significant changes in the experimental group's pre to post-test scores which, with all individual and extraneous variables accounted for, suggested that it was possible for research findings to directly influence district nursing knowledge and reported practice. Findings also furnished an understanding of the utility of active dissemination strategies and suggested that, in order to be effective, research findings had to be presented such that they were both acceptable and clinically relevant to district nurses.

In the second part of the study data about primary health care organisations were collected through interviews with service managers. Semi-structured interview schedules were developed for the study and out of a population of 32 managers 22 were interviewed. Interview data were subject to content analysis in order to gain insights into the management of district nursing services in the reformed NHS. The district nurses' scores were also interpreted in relation to the findings from the interviews.

Study findings gave useful insights into effective research dissemination strategies in district nursing. In addition, when the findings from both parts of the study were considered together they suggested that the management arrangements in district nursing services were an important feature in research utilisation. Although there were many similarities found between the service managers and the organisations they worked in, the study also found some differences which pointed up some organisational factors which may facilitate or inhibit research utilisation in district nursing practice.

In the health authority where the district nurses had significantly higher scores than all other participating authorities, marked differences in organisational structure and management processes were found. It appeared that this health authority was "clinically oriented" in contrast to the other study sites which demonstrated a more market oriented culture consistent with the ideology underpinning the NHS reforms.

Discussion of the study findings suggests that the policy debate about efficient and effective health services in a market oriented NHS may itself be creating tensions between the need for research based district nursing practices and the means to achieve it. The study concludes that the ideology of the health market may ultimately be incompatible with the development of research based district nursing practices.

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**CHAPTER I**  
**INTRODUCTION**

## **CHAPTER 1 - INTRODUCTION**

### **1.1. Introduction**

This thesis presents a study which tested whether it was possible for clinical research findings to influence district nurses' knowledge and reported practice, and which also explored how the reformed National Health Service (DoH 1990a), as an organisational system, influenced research utilisation by district nurses.

### **1.2. General Background to the Research Problem**

The study reported here was undertaken during a time of unprecedented change in the National Health Service (NHS). At the time of writing the practices of "General Management" (DHSS 1983a) were well established at all levels of the National Health Service organisation (Strong & Robinson 1990, Levitt & Wall 1992). As a result of the NHS and Community Care Act (DoH 1990a) an "internal market" had been introduced to the service through the separation of the functions and responsibilities of purchasers and providers of health care.

In addition to the fundamental reforms of the organisation and culture of the NHS (Holliday 1992), the implementation of a new contract for General Practitioners (DoH 1989a), and the pursuit of the "Health of the Nation"

targets (DoH 1992a), were shifting the focus of health services firmly into the domain of the primary care sector. The political agenda of the times had also encouraged increasing awareness, amongst the general public, of their rights and expectations with regard to the National Health Service (Fatchett 1994). The Patient's Charter (DoH 1991a) initiative gave many health professionals cause to examine their traditional procedures and practices, particularly in relation to the growing need to audit practices in terms of quality criteria (Eddy 1990a).

One consequence of the 1990 NHS reforms, and the increasing emphasis on quality issues, was the establishment of the Central Research and Development Committee (DoH 1991b), whose stated objective was to facilitate the development of a "knowledge based service" throughout the entire organisation (DoH 1993a). Within the nursing profession itself the notion of developing a research base for practice had been taken up with vigour. The strategy for nursing (DoH 1989b) suggests that research based practice is necessary because patients and clients are entitled to the best possible care. In addition, the Taskforce Reports on the Strategy for Nursing Research (DoH 1993b, RCN 1993) have indicated that research based practice is also necessary in the interests of individual professional accountability. These British nursing policy developments, together with fundamental changes in basic nurse education (U.K.C.C. 1986) and the post basic education now necessary for periodic re-registration (U.K.C.C. 1991),



have contributed to the development of a professional ethos which is supportive of and responsive to research.

In addition to being an important issue for nurses, the question of evidence based practice has inevitably impinged upon the wider organisation and the work of health service managers. Managers in the market oriented NHS are charged with ensuring that care delivery is efficient, effective and relevant to improving the health of the nation (DoH 1991b, RCN 1992, DoH 1993a, NHSME 1994, Walsh, Ham & Appleby 1995). In this context the management of community nursing services, especially the work of district nurses, can be seen as particularly challenging. As the district nursing service is mainly delivered in the privacy of patients' homes it is rarely overseen, either by colleagues or service managers, and the quality of clinical care can be difficult to monitor. Given the current policy emphasis on research based practice it is important to consider how the service manager in the community can ensure the delivery of a high quality and effective district nursing service which is also evidence based.

### **1.3. Formulation of the Research Question**

In the two years prior to undertaking the study, the researcher was employed as a Senior Nurse Manager at a "First Wave" Trust Hospital, and as such was actively involved in a local implementation of the Health Service reforms. In the context of the financial and organisational constraints

operating in this particular hospital it very quickly became apparent that in a situation where demand for nursing services most often outstripped supply, one of the managerial priorities was to ensure that the nursing resources available were being put to the best possible use. In addition, a condition of acquiring Trust status was that the management team were able to demonstrate that mechanisms for evaluating service quality were in place. As part of the local quality initiative, a practice audit was undertaken and nursing staff were required to demonstrate that their clinical work reflected the state of current nursing knowledge and was consistent with the wider professional objectives identified in "A Strategy for Nursing" (DoH 1989b). However, individual ward audits showed most clinical practices to be grounded in precedent and local tradition, with very little evidence of clinical research findings being used to inform practice. From the perspective of a nurse manager in this "reformed" organisation it appeared that in order to safeguard and develop the local nursing service it was necessary that the clinical nursing staff be able to justify all aspects of their practices. This personal experience inevitably raised questions as to why these nurses seemed to have difficulties using research in their practice.

Although this question was not systematically addressed at the local level, it was evident from the nursing literature that the issue of research utilisation was a widespread professional problem and that in most instances there was a wide discrepancy between theory and practice (Hunt 1987, Champion & Leach 1989, McGuire 1990, English 1994). It appears that

much nursing practice is founded on experience rather than research, and despite the fact that nursing research has been undertaken now for more than forty years (Brown, Tanner & Padrick 1983), and there is an ever increasing body of nursing research (Hunt 1981, Walsh & Ford 1989) the influence that research findings actually have on nurses' clinical practice has never been properly clarified.

A preliminary review of the literature suggested that although there was considerable debate around the issue of research utilisation in nursing (Smith 1979, Barnard 1980, McClure 1981, Hunt 1981, LeLean 1982, Bircumshaw 1990), there was relatively little empirical research exploring the theoretical and practical implications of developing research based practice. Almost all the studies reported in the literature had been carried out in North America (Ketefian 1975, Kirchhoff 1983, Horsley, Crane Crabtree & Wood 1983, Goode, Lovett, Hayes & Butcher 1987, Brett 1987, Bostrom, Malnight, McDougall & Hargis 1989, Champion & Leach 1989, Coyle & Sokop 1990), with only one of note (Hunt 1987) having been conducted with British nurses. In addition there was no available evidence of any studies being carried out with a focus on the community, despite the understanding that district nurses have a very different role and professional identity to that of their hospital peers (Twomey 1983, McIntosh 1985, Baly, Rowbottom & Clark 1987).

In the context of the organisational changes in the British Health Service the lack of attention to the research utilisation experiences of nurses working in community health services can be viewed as a considerable omission in nursing's knowledge base. With the continuing reorientation of health care towards the community (DoH 1990c) and the Project 2000 reforms of basic nurse education (UKCC 1986), an increasing responsibility for health care and student nurse training is being assumed by nurses in the community (Hitchen 1994). There are approximately 72,000 nurses working in the community, of whom the largest single proportion, around 20,000, are district nurses (DoH 1991c). This suggests that if the NHS really is to become a "knowledge based service" (DoH 1993a), then the way district nurses use research findings to inform their clinical practice will be crucial to the achievement of this goal.

#### **1.4. Purpose of the Study**

Against this background the study was designed, in the first instance, to investigate whether it was possible for research findings to exert an influence on district nurses' knowledge and reported practice. The study also aimed to gain insights into the management of district nursing services and to identify organisational factors, specific to the reformed NHS, which may influence research utilisation by district nurses.

In order to address the research question it was necessary to develop a method of disseminating research based information to district nurses, and then to evaluate the effect of the information on nurses' knowledge and reported practice. It was also necessary to assess the acceptability and utility of the research information had to practitioners.

In addition, the study aims required the researcher to investigate managerial structures and processes in all the study sites and to explore managers perceptions of their responsibilities for district nursing services in the reformed NHS.

To gain insights into the different perspectives of district nurses and their managers a range of research techniques were employed, and these are described in detail in the thesis.

### **1.5. Organisation of the Thesis**

The thesis is organised into five chapters. This chapter provides a broad introduction to the research problem and the researcher's own interest in the subject area. The second chapter is concerned with the background to the study. A critical review of the literature relevant to research utilisation in clinical practice is presented. The nature of perceived barriers to the implementation of clinical research findings are discussed, together with a

discussion of recent initiatives to improve research dissemination<sup>1</sup>. The chapter also considers the research problem in a wider context. With particular reference to health care in the community it looks at the organisational reform of the National Health Service, the role of the district nurse in the changing organisation, and in particular at the evolving management culture within the service. The study aims are stated at the end of Chapter 2.

Chapter 3 describes the methods of investigation and the study design. The theoretical basis of the research methods are also discussed. As the research was carried out with two related but distinct groups of subjects, the study is described in two parts. Part I is concerned with the district nurses and Part II with the community health service managers. Both these sections of the chapter describe instrument development and pilot studies and then describe their respective populations and samples, recruitment to the study, practical management of data collection, data reduction and the techniques used for data analysis.

The study findings are presented in Chapter 4. The first part of the chapter describes the characteristics of the district nurses who participated in the study. The results of statistical analysis of nurses' scores at pre and post-

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<sup>1</sup> It should be noted that since the establishment of the CRDC in 1991 (DoH 1991b) and the Cochrane Centre in 1992 (Chalmers 1992a), an increasing amount of research activity in the NHS has been concerned with research dissemination. Whilst this did not influence the articulation of the research problem, material published since this study was carried out has, naturally, informed the interpretation of study findings and the writing of this thesis.

test are presented, highlighting measured differences within and between groups. The effects of individual variables on nurses' scores are described and the district nurses evaluation of the method of research dissemination is also presented.

The second part of Chapter 4 focuses on the findings from analysis of contextual data collected in interviews with the managers of district nursing services. This part of the chapter discusses the managers and their responsibilities, and also describes the management structures and processes in the study locations. The findings of follow up interviews, which show managers perceptions of the effects of the study on district nursing services, are also presented.

In Chapter 5 of the thesis the study findings are considered and their implications for research utilisation in district nursing practice are discussed. The insights gained from the study about management arrangements and research dissemination in the reformed National Health Service are also discussed. This chapter also includes a consideration of the limitations of the study together with some suggestions for further research.

**CHAPTER 2**

**BACKGROUND TO THE STUDY**



## **CHAPTER 2 - BACKGROUND TO THE STUDY**

### **2.1. Introduction**

This chapter presents a critical review of the literature which informed the articulation of the research question and the design of the study. It also considers the more recent literature on research utilisation which influenced the interpretation of the study findings and the writing of the thesis.

The chapter is divided into subsections. These discuss the concept of research utilisation in clinical practice through evaluation of the modest number of empirical studies carried out in this field. Models of research diffusion and dissemination are also discussed.

The published literature about the effects of the NHS reforms (DoH 1990a), in particular those affecting the organisation and delivery of community health services, is also reviewed. The effects that the reforms may have had on both district nurses' work, and the need for community nursing practices to be research based are also discussed.

### **2.2. Analytical Framework**

In order to facilitate an understanding of both research utilisation in nursing and the organisational reforms of the National Health Service, the literature

reviewed in this chapter has been interpreted and evaluated within a general systems framework (Von Bertalanffy 1972, Klir 1972).

General systems is a unifying theory of scientific thought which facilitates interdisciplinary investigation (Ashby 1972). A systems analysis assumes that an organisation or social system is a whole comprised of interrelated and interacting parts (Buckley 1968). The nature of systems can be described in terms of their structure, their processes, the interdependence of the component parts and the degree of interaction with the environment. The dynamics of systems can be understood through analysis of the stability of the system, the way in which it changes over time and the extent to which it is able to adapt to feedback (Von Bertalanffy 1972). It has also been suggested that systems are characterised by isomorphism (Putt 1978) which allows the transference of knowledge and understanding from one system to another.

The concepts of adaptive, operating, maintenance and information systems have been found to be relevant to an understanding of management and organisations (Dawson 1986, Handy 1988) In addition, a systems analysis has also been found to facilitate understanding of nursing as a social system (Putt 1978, Goode, Lovett, Hayes & Butcher 1987), and the manner in which health policy is processed through the interactions of government departments, health professionals and all other interested parties (Harrison, Hunter & Pollitt 1990, Ham 1992).

In this context, despite the lack of information about both research utilisation in district nursing and the effects of the reform of health services in the community, the findings of general nursing and medical research and the policy debate around the need for evidence based practice in a market oriented NHS can be used to give insight into the research problem.

### **2.3. Research Utilisation**

#### **2.3.1. Research in Nursing**

It has been suggested that nursing needs research in order to develop and test nursing theory (Fawcett 1980, Miller 1985); to advance the professional status of nursing (Schrock 1987, Mulhall 1995); to ensure that nurses are accountable both for the care they deliver (Clark 1987, UKCC 1992) and the quality of that care (McFarlane 1984, DoH 1989b); and also that research is necessary for the development of nursing practice (Birch 1979, Smith 1979, Greenwood 1984, Bircumshaw 1990).

Whatever the underlying motive for pursuing nursing research there is considerable debate within the profession around the issue of what constitutes research utilisation and it has been suggested that the true extent of research utilisation in nursing is largely unknown (Armitage 1990, Rodgers 1994).

Loomis (1985) suggests that research utilisation can be understood as one element of the process by which new knowledge in any discipline is converted into practical innovations. She describes knowledge use as a process of social change effected through interactions between resource systems (the generators of research findings) and user systems (practitioners), which is mediated through personal, social, organisational, political and economic factors. It has also been suggested that research utilisation is a specific type of practice change in that any proposed innovation is data based and therefore has the added complexity of being subject to scrutiny within the prevailing model of science (Stetler 1985). Bookbinder (1995) proposes that whilst research may be driven by a need to develop knowledge, to solve practical problems or to improve the quality of nursing care, successful utilisation requires an understanding and level of communication between researchers and practitioners which does not often occur.

Although it is a matter of considerable debate and speculation, the process by which research information can influence clinical practice is not well understood (Delamothe 1993). The theoretical model of passive diffusion of information described by Rogers (1983) has been used in some nursing research studies to facilitate an understanding of the way research findings may influence clinical practice.

### 2.3.2. The Passive Diffusion Model

Rogers (1983) described the process of implementing innovations in organisations in terms of a model of passive diffusion of information within an established social system. In this model innovative ideas and practices percolate through a given system in a predictable pattern, and are adopted at varying rates by members of that system. In Rogers' (1983) model, innovations are adopted initially by the 'innovators' who respond quickly and positively to new information, or by the 'early adopters' who make a more considered response but are nevertheless willing to try new approaches to practice. Most individuals in a given social system will belong to the group Rogers describes as 'the majority', who will have a more deliberative and sceptical view but will, nonetheless, respond eventually to the innovation. However, Rogers also suggests that the majority group are more likely to be persuaded by the opinions and behaviours of the early adopters, rather than by the innovation itself. A small number of people will be 'laggards' who will resist innovations altogether. Within Rogers' passive diffusion model an individual's 'adaptor' characteristics are determined by their attitudinal and behavioral responses to the perceived consequences of adapting the information into practice.

It should be noted that Rogers' (1983) model relates principally to the diffusion of innovations in production systems and in this context, where there are profit incentives and measurable output targets, the individual

focus of the model may be entirely appropriate. However, despite the importation of an industrial organisational model into the NHS (Hood 1991, Hunter 1993, Walby & Greenwell 1995), health services do not have clearly defined output measures and the internal market lacks a genuine profit motive (Holliday 1992). In this case it is debateable whether the individual focus and the lack of attention to structural factors in the passive diffusion model make it appropriate for understanding clinical practice innovations.

Nevertheless, Rogers' model has provided insights into research utilisation in nursing and has been used descriptively by Loomis (1985) and Stetler (1985). It also formed the theoretical basis of the studies carried out by Horsley, Crane, Crabtree & Wood (1983), Brett (1987) and Coyle & Sokop (1990).

## **2.4. Studies of Research Utilisation in Nursing**

### **2.4.1. North American Studies**

Much of the work on research utilisation in nursing has been carried out in north America, and all with populations of nurses working in hospitals.

Perhaps the best known and most widely cited study is the major 5 year initiative carried out by the Michigan Nurses Association known as the Conduct and Utilisation of Research in Nursing (CURN) project (Horsely,

Crane & Bingle 1978, Horsley, Crane, Crabtree & Wood 1983). This project aimed to increase the use of research findings in the daily practices of clinical nurses.

Seventeen hospitals in one American state participated in the study, through liaison between the research team and a senior nursing administrator at each site. The hospitals identified broad areas of practice which they were interested in developing and then the research team reviewed the literature to identify studies which had scientific credibility, had clinical relevance and had the potential to be directly transferable to the practice setting.

Literature reviews uncovered 10 aspects of nursing practice which met the criteria. These were in relation to clean intermittent catheterisation, closed urinary drainage systems, changing intravenous cannulae, mutual goal setting, pre-operative teaching, information giving before diagnostic procedures and before surgery, tube feeding, deliberative nursing in pain control and the prevention of decubitus ulcers. The research team then developed 10 "Innovation Protocols" for application in adult medical and surgical nursing environments. In addition to identifying the research basis for these clinical practices, the protocols also set out process criteria to guide implementation.

The Innovation Protocols were disseminated to the 17 participating hospitals through a series of workshops led jointly by the research team and the local

nursing administrator, with the researchers acting as organisational change agents (Olsen 1979, Welch 1979) in each site.

The CURN project was based on an integrated model of diffusion of information (Rogers 1983) and planned change theory (Bennis, Benne & Chin 1985), and has had considerable influence in defining the way nurses conceptualise and attempt to utilise research in practice. However, there is little if any research which has sought to substantiate the findings of the CURN initiative (Rodgers 1994).

Procedures by which the CURN team reviewed the literature are not stated explicitly, so it can not be assumed that material was subject to systematic review. In addition it is not clear from the project reports (Horsely, Crane & Bingle 1978, Horsley, Crane, Crabtree & Wood 1983) how a "successful" implementation was identified in terms of outcome measures.

It could also be argued that as the 10 innovation protocols had all been developed in response to an identified need on the part of the 17 hospitals, then a degree of successful implementation was inevitable. Through taking part in the project the nurse administrators and participant hospitals could be seen to have made a commitment to developing research based practices.



Nonetheless, the CURN project appears to have been influential in American nursing research. The techniques and strategies of the CURN project were replicated by Goode, Lovett, Hayes & Butcher (1987) in a 42 bed acute care hospital. In this study a 7 nurse committee, which included administrators and practitioners, developed and implemented protocols in relation to oral temperature taking, breast feeding and pre-operative teaching. However, it should be noted that in the report of the project the authors state that none of the participants had any previous research experience and that their research skills were all self taught through members of the committee reading and discussing research methods texts together.

As a result of another study which utilised some of the CURN techniques, Brett (1987) also suggested the process by which research can influence nurses' clinical practices can be explained by means of a passive diffusion model. Brett (1987) tested this proposition through development and administration of the "Nursing Practice Questionnaire". This instrument was developed through review of research reports relevant to adult medical and surgical patients which had been published in nationally circulated (American) nursing journals over a 5 year period. If the study had been in the literature for at least 2 years, had arisen from research on a real clinical population, was supported by at least one replication study and had findings which could be implemented by individual nurses, then it was included in the instrument. This strategy uncovered 9 eligible practices; intramuscular injections, catheter removal, giving sensory information before diagnostic

and surgical procedures, relaxation techniques, urine testing, pre-operative education, oral temperature taking and intracranial pressure monitoring. Brett also included 5 of the protocols developed during the CURN project (changing intravenous cannulae, tube feeding, closed sterile urinary drainage, mutual goal setting and deliberative nursing). The Nursing Practice Questionnaire then gave brief details of the practice findings and asked nurse respondents to state whether they were aware of the finding, persuaded of it's relevance, used it sometimes or always carried it out.

A sample of 279 nurses in 10 hospitals responded to the survey and Brett found that although all nurse respondents reported being aware of all the 14 practice innovations only 4 were reported as being in occasional use and only one, closed sterile urinary drainage, was always used by this population of nurses. As a result of this study Brett (1987) suggested that within the passive diffusion framework nurses first spend a period of time "aware" of research findings, before they enter a phase of "persuasion" of the findings relevance to practice. At this stage in the process a nurse may occasionally use the findings to inform practice, and once their practical utility has been tested and evaluated, the research findings may become accepted into every day clinical work. However, it has also been suggested that the process of assimilation of research findings may be terminated at any stage (Kirchoff 1982).

A difficulty in evaluating findings such as these lies in the self report method used in the Nursing Practice Questionnaire. All self report methods are open to questions about the accuracy and completeness of responses (Polit & Hungler 1993), and as these respondents were all qualified nurses there may be a degree of doubt about whether in fact they would admit to being unaware of any of the research findings being presented to them.

Brett's study was replicated by Coyle and Sokop (1990). Using the Nursing Practice Questionnaire they surveyed 200 nurses randomly selected from 10 hospitals in one American state. Despite the 3 year time difference between Brett's study and their own Coyle and Sokop (1990) found no increases in the level of adoption of any of the 14 clinical research findings.

All the studies cited here were carried out with American nurses working in hospital settings, and although there are bound to be cultural differences between American hospital nurses and British district nurses, studies such as these would suggest that nurses' awareness of research findings and the utilisation of them in practice is perhaps not the inevitable sequential process that the passive diffusion model suggests. It would also appear from these studies that nurse administrators and the organisations in which nurses work are perhaps important factors in research utilisation.

#### **2.4.2. British Studies**

In Britain there have been very few research utilisation studies, and nothing on the scale of the American work. However, some nurse researchers have suggested that research utilisation in clinical practice can be facilitated through 'action research' strategies (Hunt 1987, Alexander & Orton 1988, Webb 1989, Wilson-Barnett, Corner & DeCarle 1990, Tierney & Taylor 1991, Titchen & Binnie 1993). Armitage (1990) suggests that for research findings to have meaning to practitioners it is necessary for nurses to identify their own practical research problems, in their own environment, and that they should then be guided, by experienced researchers, toward developing their own practice solutions.

An illustration of this approach can be found in Hunt's 1987 study in which she sought to facilitate research based practice in a group of hospitals by using an organisational action research approach to the management of change (Susman & Evered 1978, Bennis et al 1985).

The study involved nurse teachers, librarians, nurse managers, ward sisters, staff of the central sterile supplies department (CSSD), pharmacists, anaesthetists and dental consultants. The research was conducted through 3 sequential but interrelated phases.

In the first phase nurse teachers, with the help of librarians, from 9 schools of nursing in the group accessed and reviewed literature relevant to an area of practice in which they had an interest. Over a 2 year period the participants were supported through discussion groups with the researcher and at the end of the period 2 groups of teachers who had been reviewing mouth care and pre-operative fasting chose to proceed to the next stage of the study.

This stage was concerned with evaluation and synthesis of published information and participants were given standardised guidelines for critiquing the literature as well as "expert" input from anaesthetists and pharmacists. The research findings were then translated into protocols which could be implemented in the clinical setting.

The third phase of the project involved discussion groups with the teachers, the researcher, ward sisters and hospital managers, and once the protocols were agreed by all interested parties they were formulated as policies to be implemented in the participating hospitals.

Hunt (1987) found that despite a positive organisational culture and a systematic approach to the implementation of these 2 sets of clinical research findings, very little changed at the level of clinical practice. Hunt suggested that the results of this study illustrated that effective practice change was a collective responsibility and one which was beyond the scope

of any one individual. However, perhaps more importantly, Hunt (1987) also suggested that dynamic conservatism, through adherence to routines, is a mechanism by which nurses keep control and stability in unpredictable circumstances. In the context of the enormous changes in community health services (DoH 1989a, DoH 1990a, DoH 1990b, DoH 1990c) this could be an important factor in understanding how district nurses utilise research in their clinical practice.

### **2.4.3. Action Research Approaches**

Although action research approaches, such as that utilised by Hunt (1987) are considered to be particularly relevant for integrating theory and practice in practical disciplines (Nolan & Grant 1993, Holter & Schwartz-Barcott 1993), there is also some debate about whether action research is the same as research utilisation.

It has been suggested that the purpose of action research is to deal with specific local problems within an organisation (Lauri 1982, Peters & Robinson 1984). The methods are grounded in qualitative techniques and in general terms involve the diagnosis of a "problem", the consideration of alternative solutions, the selection and trial of a course of action and the evaluation of the effects of actions taken.

Proponents of the action research approach in nursing claim that the advantages of the method over traditional research designs are to be found in the non-exploitative and collaborative nature of action research, giving practitioners ownership of the findings and facilitating research based solutions to practical nursing problems (Webb 1990, Tierney & Taylor 1991). In addition, the findings of action research are seen to be particularly relevant to the local context, and the cyclic nature of the action research process ensures that clinical practice develops continuously (Hart & Bond 1995).

However, there is some debate about whether action research is truly non-exploitative (Meyer 1993) and also whether the approach is feasible for large scale projects (Sparrow & Robinson 1994).

It would seem that in order for action research approaches to facilitate the development of research based nursing practices, it would be necessary for there to be considerable numbers of researchers able to work with practitioners on local projects and for the profession to have a positive research culture. However, there is nothing to suggest that this is in fact the case (Coyle & Sokop 1990, Rizutto, Bostrom, Suter & Chenitz 1994, Closs & Cheater 1994). Therefore, until such time as the profession is able to systematically utilise action research approaches, then other mechanisms for integrating research into practice also need to be explored.

## **2.5. The Extent of Research Utilisation in Nursing**

### **2.5.1. Levels of Utilisation**

It has been suggested that research findings may be used by nurses either conceptually or instrumentally (Dunn 1983, Stetler & DiMaggio 1991). Conceptual utilisation is described as the situation where an individual has an awareness of research findings, which whilst they may influence their thinking or their understanding of an issue, do not have any demonstrable effect on practice. Instrumental utilisation is described as the situation where research findings can be observed to influence the day to day clinical practices of nurses, in that they underpin decisions pertaining to patient care (Brett 1987, Stetler & DiMaggio 1991).

In relation to this study it could be argued that conceptual utilisation of research by district nurses would be measurable through the level of knowledge they were able to demonstrate in relation to a specified clinical topic. However, the notion of a 'knowledge based' health service, in which practice is demonstrably based on research, would also require a measure of the extent of instrumental research utilisation in district nurses' clinical practice.

While it may be relatively straightforward to measure levels of district nurses' knowledge, it is considerably more problematic to measure practice,



particularly in community locations where nurses most often work in isolation. However, the extent to which nursing practice is based on research can perhaps be studied obliquely through consideration of some of the research on nurses' clinical decision making.

### **2.5.2. Clinical Decision Making Studies**

The cognitive process of decision making requires clinicians to have the skills to assimilate large amounts of information and apply it appropriately in response to the contingencies of a given clinical situation (Jenkins 1985, Thiele, Baldwin, Hyde, Sloan, Strandquist 1986, Prescott, Dennis & Jacox 1987, Jones 1988, Eddy 1990b). The research into decision making in nursing demonstrates that many nursing practices are carried out in the absence of any rational deliberation, which would suggest that research findings are not being used by nurses at either conceptual or instrumental levels. Jenkins (1985) suggested that nurses' clinical decisions were moderated by situational variables, and that in most instances nurses relied on their own past experience to guide their practice.

The nature of the experiential basis of nursing practice was explored in depth by Benner (1984). Through the use of observation, interview, questionnaire and critical incident techniques the practices of 1200 American nurses were studied. As a result Benner suggested that some nursing knowledge is acquired without theoretical understanding and that

many nursing skills have an element of unspecifiable knowledge. In addition Benner (1983) suggested that where a "novice" nurse's practice was rule governed an "expert" nurse was one who did not use an analytical principle to connect a clinical situation with the appropriate nursing action but operated from an intuitive knowledge of nursing.

However, as English (1993) suggests, the notion of nursing intuition could also be accounted for in terms of cognitive models of cue recognition, and it may be misleading to suggest that expert nurses do not use analytical principles in making decisions about clinical actions. In this context attempts to validate the notion of intuition could be counterproductive in a profession which seeks to have a demonstrable research basis for practice.

The predominantly experiential basis of clinical practice has also been identified in the work of other researchers who have suggested that while nurses may exhibit a high level of practical skill, it is often without reference to any research evidence.

Baumann & Bourbonnais (1982), studied a convenience sample of 50 north American nurses in critical care units. Through semi-structured interviews using hypothetical patient case studies they found that whilst 90% of nurses were able to make accurate clinical decisions they had difficulties providing a theoretical rationale for their actions. Thompson & Sutton's (1985) replication study of Baumann & Bourbonnais' work, which surveyed

20 British nurses in a coronary care unit, also found nursing experience to be a major factor in clinical decision making. Although the nurses being studied were able to make rapid and appropriate clinical decisions in response to medical emergencies, they were unable to provide any evidential basis for the actions they took. Past nursing experience was the most frequently cited rationale for practice decisions.

Similarly, Pardue's (1987) survey of 121 nurses in 2 American hospitals found that experience was ranked as the most important factor in decision making by all groups of nurses.

An observational study of the decision making of 30 district nursing sisters (McIntosh 1979) found that nursing decision making appeared to be an unrefined process, that did not seem to have a rational basis. After participation in 1309 home visits and observation of decisions related to wound treatments, nursing care decisions and delegation of responsibility, McIntosh (1979) reported that district nursing sisters' decisions lacked a scientific basis and appeared to be based on precedent and trial and error.

Whilst nursing experience may be an important factor in clinical practice, the notion of an experiential knowledge base rests on the assumption that the collective experiences of practitioners are "correct". This would imply that the subjective experiences of nurses are able to estimate the advantages, disadvantages and likely outcomes of nursing practice. However, as Eddy

(1990c) suggests, this approach to clinical practice could only be justified in the absence of any research which could more accurately predict the benefits and outcomes of nursing care.

Findings such as these suggest that it may not be worthwhile using clinical decision making as a means to explore research utilisation in district nursing practice. It would seem that a more direct interventionist approach, whereby research utilisation could be measured, is indicated.

## **2.6. Barriers to Research Utilisation**

### **2.6.1. Perceived Barriers**

Despite the growth of nursing research in the recent past, there does not appear to have been a parallel growth in research utilisation in nursing practice (McGuire 1991). Although there is considerable debate about whether inhibitory factors are due to individuals, organisations or the research itself, there are relatively few empirical studies which have conclusively identified barriers to research utilisation in nursing.

A nationwide survey of 1989 American nurses by Funk, Champagne, Wiese and Tornquist (1991) used a questionnaire which described 29 perceived barriers to research utilisation and asked nurses to rank them. Funk et al (1991) classified the barriers to research utilisation in terms of Rogers'

(1983) passive diffusion model, and suggested that barriers to research utilisation may be due to the adopter (the individual nurse), the organisation, the qualities of the research or the way in which findings are communicated.

However, it should be noted that the 1989 nurses who returned questionnaires only represented a 40% response rate and that more than half of the respondents (55%) were nurses with higher degrees. In this case it is possible that nurses responding to Funk et al's survey may have had an overt interest in research utilisation, and as such they may not have been representative of the 60% of nurses who did not participate in the study.

#### **2.6.2. Lack of Relevance to Practice**

A recurrent theme in the literature is that much nursing research lacks direct relevance to clinical practice (Barnard 1980). For example, Miller and Messenger's (1978) descriptive survey of nurses in 2 American states collected data from 215 nurses and 157 (73%) of these respondents reported they did not use research findings as there was no research relevant to their area of interest. In addition 181 (84%) reported that the research findings which were available had little relevance to practical nursing situations.

Clark and Hockey's (1979) review of published nursing research found that the great majority of studies were concerned with understanding nurses and

nursing, rather than with issues directly related to patient care. A similar conclusion was reached by LeLean (1982) who found that of 150 published nursing research abstracts only 30 were concerned with issues of patient care. Hunt (1981) suggested that although nursing was accumulating a substantial body of research there was still a dearth of research relevant to clinical practice. Wilson Barnett et al (1990) suggest that a lack of nursing research findings with immediate practical relevance still pertains today. However, as Tierney (1987) points out, it is facile to imagine that all nursing research studies should have straightforward and immediate practical applications.

In relation to this perceived lack of clinically relevant research findings, it has been suggested that researchers and practitioners have different perceptions of the nature of nursing (Clark 1986) and also have different professional values and goals (Miller 1985, Closs & Cheater 1994). Smith (1979) and Greenwood (1984) suggest that this arises from the fact that nursing is a relatively "new" academic discipline, and as a consequence much research is undertaken for the furtherance of individual careers, rather than the development of nursing practice. Associated with the need to pursue original studies there is also a general lack of replication studies in nursing research (Luker & Kenrick 1992), and the implementation of findings of individual studies may not provide a more robust basis for nursing practice than nursing intuition or "hunches".

However, the perception that there is a generalised lack of research findings with clinical relevance implies that nursing practice may only be influenced by the findings of nursing research, which given that nursing is underpinned by a number of disciplines, is patently not a tenable proposition. In relation to many areas of clinical practice, for example the prevention and management of pressure sores, there is a wealth of research information from associated disciplines, which can be used to enhance nursing knowledge and inform clinical practices (Cullum & Clark 1992).

### **2.6.3. Conflict of Research & Experience**

Another factor which has been implicated in the lack of research utilisation in nursing practice is the inevitable time-lag between carrying out a study and reporting it. The constraints of the research process means that the time between the origination of a practice related research idea and its subsequent execution and publication in the literature is usually to be measured in years (Barnard 1980, Polit & Hungler 1993).

The difficulty arising from this is that during the time it takes to carry out and report a piece of clinical research it is highly likely that "unscientific" solutions to the problem will have been arrived at independently by practitioners. In this case the apparent solution to a practice related problem becomes grounded in nursing experience rather than research. Once the findings of the research become available it is then considerably more

difficult for nurses to accept the findings, particularly if they challenge established nursing custom and practice (Davies 1981, Hefferin, Horsley & Ventura 1982).

Church and Lyne (1994) suggest that in the situation where a practitioner's clinical judgement or nursing experience may be in conflict with research evidence then the available options are for the nurse to ignore the research findings, to accept them without question, or to subject them to critical appraisal. In order to develop research based practice the latter is obviously the preferable option, however, this would mean that all practitioners would have the skills necessary to do this. proposition.

#### **2.6.4. Interpretation of Research**

The differences in individual nurses' abilities to interpret the findings of research have themselves been suggested as a potential barrier to the utilisation of research in practice (Hunt 1981, LeLean 1982, Kirchhoff 1983).

Some authors suggest that it is often the case that nurses are unable to interpret the meaning research findings may have for their everyday clinical activities (Miller & Messenger 1978, Greenwood 1984, Lacey 1994). LeLean (1982) suggests that the evaluation of research findings is a problem for many nurses because it requires the nurse to have both an understanding of the subject under study and an ability to evaluate research findings in terms



of their scientific merit. Whilst there may be some nurses who have these abilities, it cannot necessarily be true of all, and if nurses do not have a full understanding of research methodology then it is unlikely they will be able to critically appraise the findings of published research studies and evaluate their utility for practice applications (Barnard 1980, Lacey 1994). In addition, if nurses are unable to distinguish between valid research and dubious findings then there is a possibility that all research could become devalued as a source of influence on clinical practice (Rundell 1992).

Brown (1995) suggests that the inherent difficulties in interpreting research findings can be understood through the application of a communications model for research reporting and reading. In Brown's (1995) model the responsibility for encoding and transmitting the research "message" rests with the researcher, whilst the task of decoding the message falls on the practitioner. However, Brown also suggests that whilst nurse researchers and practitioners may be willing to concede these responsibilities, the problems arise in whether or not practitioners accept the research message once it has been received. This model also appears to be based on an assumption that researchers and practitioners share common goals for the development of nursing practice, and yet there is little in the literature to support this notion (Miller 1985, Clark 1986).

#### **2.6.5. Accessing Research Findings**

Alongside the problem of individual nurses' abilities in interpretation and application of research findings there is also the question of them being able to physically access research reports in the first place. It has been suggested that this is another reason why research is not widely utilised in nursing practice (Butts 1982, Mercer 1984, Champion & Leach 1986).

The normal channel for the publication of research findings is in academic journals, which are not often read by practitioners (White 1984, Thomas 1985, Hunt 1987, Bircumshaw 1990). However, citing inaccessibility as an inhibitory factor also implies that if nurses were able to access research findings then they would also be able to interpret and use them, yet Hunt (1981) and LeLean (1982) suggest that this is not the case.

#### **2.6.6. The Authority of Published Research**

A further issue is raised by the "authority" vested in published research. Church and Lyne (1994) suggest that many nurses subscribe to the view that if a piece of research is published, its' findings must therefore be correct. However, this belief does not account for the selective reporting of research findings (Chalmers 1990) or for publication biases (Chalmers, Frank & Reitman 1990, Dickersin 1990).

As part of the National Health Service (NHS) Research and Development strategy (DoH 1991b), the work carried out at the Cochrane Centre

(Chalmers 1992b) has focused on making clinical research findings accessible and directly relevant to health professionals through the processes of meta-analysis and systematic review (Abraham, Shultz, Polis, Vines & Smith 1987, Smith & Stullenbarger 1991). These methods use standardised objective measures for appraising both published and unpublished research findings. In meta-analysis the findings of research studies are also subjected to statistical control. Conclusions about the utility of research findings are only presented when the research material has been collected and analysed in a systematic manner (Light & Pillemer 1984, Mulrow 1987). In this context it would appear that there could be advantages in translating research findings into a form which is both accessible and useful to practitioners.

This suggests that the mechanisms by which clinical practices may be changed, and the effects that individual differences may have on research utilisation, also need to be considered.

## **2.7. Attitudes to Research**

### **2.7.1. Nurses' Attitudes**

Some attempts to understand the process of research utilisation have been focused on identifying attributes of individual nurses which may make them more or less likely to use research findings in their clinical practice (Champion & Leach 1986). However, it should be noted that none have been concerned specifically with district nurses.

Some early research by Clark and Lenburg (1979) took a sample of 31 general nurses in 4 American hospitals. Through completion of a critical incident questionnaire the nurses described occasions when they had and had not been able to use their nursing skills in the process of care delivery. The responses were then classified into a 6 point taxonomy of nursing role orientations. As a result of this study Clark & Lenburg (1979) suggested that a nurse's professional orientation could be a predictor of research utilisation in practice. They proposed that if nurses were "rule oriented" then their clinical activities were governed by procedure, practice policies and medical professionals. Whereas if nurses were "knowledge oriented" then their practice was more autonomous, and as a result they were more likely to use research findings to inform their clinical work.

Although this work was concerned with knowledge utilisation in nursing and not specifically with research utilisation, similar findings have more recently been reported in populations of British nurses. An exploratory study of research utilisation in Scotland by Rodgers (1994) which also used a critical incident technique in discussion with 13 qualified nurses found bureaucracy and a perceived lack of autonomy to be barriers to research utilisation in nursing. Similarly, Lacey's (1994) pilot study of 20 general nurses in 2 British hospitals found the influence of medical staff and a lack of professional autonomy to be the biggest perceived deterrents to nurses using research findings in their clinical practice.

### **2.7.2. Attitude Formation**

Other opinion suggests that nurses' attitudes about the value and relevance of nursing research are also obstacles to its utilisation in practice. McClure (1981) suggested that attitude related obstacles were to be found in both clinical nurses, who had a lack of commitment to nursing research, and in nurse researchers, who had a lack of commitment to studying practice related problems. Egan, McElmurry & Jameson (1981) suggested that the attitudes of clinical nurses were inhibitory as they perceived part of their role to be protecting patients from intrusions into their care by researchers. Hefferin et al (1982) also suggested that clinical nurses had essentially negative attitudes to research which resulted in difficulties in getting research findings implemented into practice.

Nurses' attitudes to research were surveyed by Bostrom et al (1989) in an American hospital where 720 nurses, or 78% of the nursing establishment, participated in the study. The researchers found that these nurses' attitudes towards research were distorted by a belief that a "good" nurse was one who worked at the patient's bedside. They also found that nurses who did not understand the research process, and did not value a systematic approach to problem solving, were suspicious of researchers and research findings. However, the study also found that many nurses responding to the survey held the view that research was necessary for good patient care. These attitudes towards research were found to be associated with the type and level of training a nurse had had, with graduate nurses demonstrating more positive research related attitudes (Bostrom et al 1989).

Findings such as these suggest some ambiguities in nurses' attitudes towards research, in which case they are unlikely to be a reliable predictor of utilisation of research findings in clinical practice. Crane (1985) suggested that nurses' research related attitude formation was a product of their own value system and the values of the society they lived in and the organisation in which they worked. Other authors suggests that it is over simplistic to regard the lack of research utilisation in nursing to be a product of individual nurses' attitudes, as nurses belong to a profession whose history and tradition militates against a positive research culture (McGuire 1990, Closs & Cheater 1994). In addition, in the case of British nurses, Smith (1993) suggests that they are working in a social culture which does not value

science, but which is biased towards knowledge based on experience rather than research.

It would therefore appear that the effects of nurses' research related attitudes cannot be fully understood outside the social and organisational systems in which nurses practice (Rodgers 1994).

## **2.8. Organisations and Research Utilisation**

### **2.8.1. Nurses & Organisations**

The limited amount of nursing literature on the effects the health service system has on research utilisation in clinical practice suggests that barriers to utilisation may be inherent in the culture of the NHS organisation which appears to undervalue research (Closs & Cheater 1994).

Other organisational barriers which have been described include a widespread lack of understanding of the research process, a lack of research funds and practical resources, inflexible working arrangements and a perceived lack of support for research from managers and administrators (Bowie 1981, Copp 1984, Oberst 1985).

Hefferin et al (1982) suggested that the general lack of research utilisation in nursing was an organisational issue. They also suggested that the

responsibility for developing research based nursing practice lay with nursing administrators, and that research utilisation could be encouraged through the provision of interest, support and material resources. Similarly, Padilla (1979) suggested that in order for nurses to incorporate research findings into the practice setting it was necessary for nurse managers to forge links with universities and help develop practice related questions for researchers to address. Whilst Edwards-Beckett (1990) suggests that practice innovations need to be presented as organisational policies in order for nursing practice to be changed.

### **2.8.2. Nurse Managers**

Although no studies investigating organisational systems and clinical research utilisation were found, two American studies which measured the effect that managerial or administrative support had on research utilisation are reported in the literature.

Champion and Leach (1989) surveyed a convenience sample of 59 American nurses working in one hospital. Through the nurses' completion of a 46 item Likert scale the researchers measured the association between nurses' reported use of research in practice and the availability of research findings, nurses' attitudes towards research and perceived support for research utilisation within the organisation. A multiple regression analysis revealed that both availability of findings and individual nurses' attitudes were



significantly associated with reported research use. Whilst overall organisational support was not significantly associated with reported research utilisation, the support of the director of nursing and other nursing administrators was found to be a significant factor.

Although this finding is consistent with the notion that research utilisation is not just the responsibility of individual nurses (Hunt 1987, McGuire 1990), it should be noted that as the study was carried out in one American hospital the findings may only represent the organisational culture and nursing administration arrangements in this particular place. In addition the 59 nurses who completed and returned the questionnaire represented a 39% response rate, and therefore may have been the nurses who were either particularly interested or particularly frustrated in research utilisation activities.

Bostrom et al's (1989) survey also found that the nurses' perceptions of a lack of support from nurse administrators would inhibit the utilisation of research in practice.

Some other authors also suggest that the support of the managers of nursing services is an important determinant of the use of research findings in clinical practice (Dunham & Fisher 1990, Yuen 1993, Cameron-Buccheri & Ogier 1994). This proposition is consistent with the findings of Rodgers' (1994) exploratory study in a British hospital which suggested that nurses

perceived a manager's support to be 'crucial' to the utilisation of research in practice.

Nurses' perceptions of the influence of the nurse manager in research utilisation can perhaps be appreciated in terms of nursing's historical hierarchical structure (Strong & Robinson 1990, Fatchett 1994, Hart 1994). It could be the case that practitioners are looking to the nurse manager to take the lead in research utilisation activities, by drawing on their clinical backgrounds and their formal power and authority associated with their position within the organisation.

However, Rodgers (1994) also found that the management of nursing services by non-nurses was perceived to be particularly restrictive to research utilisation, as general managers' understanding of nursing concerns was thought to be very poor. Nurses in Rodgers' (1994) study expected managers to be instrumental in developing research based practice, while the managers considered it to be a nursing responsibility.

### **2.8.3. Responsibility for Research Utilisation**

With the growing trend in the National Health Service for nurses to be managed by non-nurses (Strong & Robinson 1990, Jacoby 1990, Dean 1990) it is possible that management arrangements within the organisational

system may have an effect on the development of research based' nursing practice.

In the context of research based practice being part of both the professionalisation of nursing (Schrock 1987) and an organisational policy initiative (DoH 1991b), the perception of where the responsibility for research utilisation lies is an important consideration.

The notions of autonomous practice and ownership of a specialised body of knowledge are part of a trait theory of professions (Barber 1963, Johnson 1972), and the development of research based knowledge and autonomous practice have been important issues as nursing has sought to develop a full professional identity (Wilson-Barnett 1984, Cox 1984, Ohlen & Segesten 1993).

The two traits are inextricably bound as the notion of professional autonomy implies being accountable for professional decisions and actions (Bergman 1981). Therefore, in order for nurses to be truly accountable it is necessary for them to operate from a tested knowledge base (Blane 1986, DoH 1989b).

In this case, if the managers of nursing services are not themselves members of the profession then there is no obvious reason why they should have any interest or responsibility for nurses' professional development

through facilitating research or research utilisation, particularly if they are able to deliver satisfactory services without a fully professional nursing workforce. As Clifford (1981) suggests, encouraging autonomous nursing practice may actually be in direct conflict to a service manager's own professional goals. Porter (1992) goes so far as to suggest that the rise of managerialism in the NHS may be seen as being "anti-professional", because in operational terms it restricts the autonomy of individual practitioners in order that corporate goals may be achieved.

Conflicting perspectives of where the responsibility for research utilisation lies could be very damaging, particularly if service managers and nurses believe each other to be pursuing different objectives (Harrison 1988).

The literature reviewed thus far suggests that the nursing initiatives to facilitate research utilisation through the diffusion of information have met with limited success. The extent of research utilisation in nursing remains largely unknown and it has been suggested that research findings are not widely implemented in clinical practice (McGuire 1991, Rodgers 1994). In this context the utility of the passive diffusion model (Rogers 1983) in health service organisations needs to be questioned.

## **2.9. Models of Research Dissemination**

### **2.9.1. Limitations of a Passive Diffusion Model**

Recent theoretical debate, in the medical literature, suggests that one of the reasons why research utilisation strategies have failed to have an impact on clinical practice behaviours is because the passive diffusion model is largely inappropriate (Lomas 1993).

Stocking (1992) suggests that in the passive diffusion model, in order for practice to be changed, the relative advantages of "new" practices over old traditions have to be clearly demonstrated to the practitioner. In addition it is also desirable that innovations can be observed and tried in the practice environment. The acceptability of innovative information is also conditional on it being compatible with the beliefs and working practices of the clinician. Stocking (1992) also suggests that any decision to adopt new information is influenced by the practitioner's perception of the practical and logistic difficulties associated with introducing a change into the practice setting.

The passive diffusion model has also been criticised for being unable to account for the situational diversity in health care contexts, and the fact that it is highly unlikely that the characteristics of potential adopters and the nature of an innovation will be constants (Luker 1993). If the passive diffusion model were to be an accurate representation of the means by

which research could influence clinical practice then it implies that clinicians need to be receptive to new information and, at the time they receive the information, they also perceive a need for change in practice. However, many authors suggest that this is not in fact the case (Grol 1990, Bauman, Deber & Thompson 1991, Sheldon, Freemantle, Grimshaw & Russell 1994), and that a model of active dissemination of information would be more appropriate for understanding the process by which research findings can influence clinical practice behaviours.

### **2.9.2. Active Dissemination of Information**

The distinguishing feature of an active dissemination model is that research findings are synthesised by a credible group of professionals before being made available and accessible to a target audience (Grol 1992, Lomas 1993). Within an active dissemination model the stages in changing clinical practice in response to research are, firstly raising the clinician's awareness of new ideas and soliciting their interest in the findings, then encouraging them to undertake a cost/benefit analysis of the potential change in practice. The final stage of the process is to get the clinician to make a commitment to a trial of the new practice behaviours (Horder et al 1986, Stocking 1992).

Mugford, Banfield and O'Hanlon (1991) systematically reviewed 36 published studies of interventions designed to influence the clinical practice of doctors which utilised formal feedback mechanisms. As a result of this

systematic review Mugford et al suggested that in order for the active dissemination of information to exert a positive influence on practice behaviours it was necessary that clinicians had already demonstrated a commitment to reviewing their practices, and that for maximum effect, the new material should be presented as near to the time of clinical decision making as possible.

When considering what implications these findings may have for devising strategies to facilitate research utilisation in district nursing practice, then the way in which district nurses work and the range of decisions they make would suggest that the active dissemination of clinical research findings may be a very labour intensive task.

### **2.9.3. Active Dissemination Strategies**

Some insights into the question of how to effectively disseminate research findings to district nurses may be gained from reviewing the strategies which have been deployed in the active dissemination of clinical research findings to medical practitioners and which are reported in the medical literature.

Some authors have suggested that clinical guidelines have the potential to change practice and several sets of clinical guidelines have been developed to improve diverse aspects of medical practice (Lomas et al 1989, Brooke

1989, Woolf 1990, Hayward, Wilson, Tunis, Bass, Rubin & Haynes 1993). For example, guidelines have been prepared for the medical management of chronic asthma in adults (British Thoracic Society 1990a), management of acute asthma in adults (British Thoracic Society (1990b) and for the audit and supervision of patients with rheumatoid arthritis (Royal College of General Practitioners 1992). However, Grimshaw and Russell (1993) reviewed 59 practice guidelines related to different aspects of medical care and found that although the guidelines appeared to increase efficiency and bring about improvements in patient care, it was not clear whether practice had changed.

A study by Lomas, Anderson, Dominik-Pierre, Vayda, Enkin and Hannah (1989) surveyed obstetricians in Ontario to assess whether a national consensus statement on the management of caesarean section had had any influence on obstetric practices. A 40% (N=192) random sample of obstetricians was taken of whom 81% participated in the study. Measures of doctors' attitudes and practices in respect of caesarean section were taken before and after the guidelines were published. The research team also collected hospital statistical data related to obstetric practices. Results found changes in doctors' attitudes and practices. However, reported practice changes were not supported by hospital activity data. This led Lomas et al (1989) to conclude that while clinical guidelines may influence attitudes and predispose clinicians to altering their clinical behaviours, it was probably



necessary to supplement clinical guidelines with local initiatives to encourage and support practice changes.

In addition, audit and peer review have been used in attempts to gain clinicians' commitment to changing their practices (Mugford et al 1991, Grol 1992). Individual person-to-person contacts and recognised clinical opinion leaders have also been used for the active dissemination of research findings to practitioners (Horder et al 1986, Stocking 1992). However, the literature suggests that even when research findings are actively disseminated they do not necessarily result in changes in clinical practice.

Another study into changing obstetric practices in Canada (Lomas, Enkin, Anderson, Hannah, Vayda and Singer 1991) evaluated the influence that clinical audit, feedback and opinion leaders had on the implementation of guidelines related to trial of labour in women with previous caesarean section. Using a randomised controlled trial design, 76 obstetricians in 16 hospitals were assigned to the three conditions and a total of 3552 clinical cases were studied. Outcomes were measured through reduction in the rates of caesarean section which would indicate successful implementation of the guidelines. The study found that rates of caesarean section were only reduced in the clinical 'opinion leader' group. However, even within this group there was still only a 70% uptake of the research based guidelines.

Research concerned with evaluating methods of disseminating clinical research findings suggests that there is no one device which is particularly effective in bringing about practice behaviour change in clinicians (Grol 1992). Goldberg et al (1994) reviewed the research dissemination strategies of continuing medical education, academic detailing, opinion leaders, specialist study groups and practice feedback to evaluate their effectiveness in changing clinical practices. The review found that it was not possible to state with any certainty which were the 'best' strategies for disseminating research information to practitioners. However, Goldberg et al (1994) did suggest that the academic detailing model used by pharmaceutical companies, based on adult learning principles, using intensive person-to-person interventions and positive feedback, represented the most likely strategy to change clinicians practice behaviours.

Similarly, the systematic review and statistical analysis of 102 trials of dissemination interventions by Oxman (1994), was also inconclusive. Oxman (1994) evaluated the effects of educational materials, conferences, outreach visits, opinion leaders, audit, marketing and multifaceted approaches and concluded that all strategies had some effect, some times. However, Oxman (1994) also found that even the most labour intensive interventions for research dissemination, such as outreach visits and opinion leaders, had, at best, a limited influence in changing clinical practice behaviours.

Sheldon et al (1994) also suggest that practice change through research dissemination is conditional on the practitioners' understanding, and believing in, the research findings being disseminated to them. However, it appears that whilst an active dissemination model may be a more effective means of facilitating research utilisation there is no basis for a belief that the provision of relevant research information will ultimately lead to behaviour change in clinical practitioners.

### **2.10. Reform of Health Services in the Community**

An understanding of the way research findings may influence district nursing practice is limited by a lack of empirical studies, however, the findings of several studies reviewed here (Horsley et al 1983, Goode et al 1985, Champion & Leach 1985, Bostrom et al 1985, Hunt 1987) suggest that organisational factors may be influential in facilitating or inhibiting research utilisation.

The organisation of health services in the community has been subjected to fundamental changes, both in the structure of services and the systems of care provision (Stanwick 1994). It is therefore worth considering how these reforms have affected the work of district nurses and what implications they may have had for the need to develop research based practices.

### **2.10.1. Reform of Financial Arrangements**

Since the implementation of the 1990 reforms there has been unprecedented change in community health services in the NHS. The drive towards an efficient and effective "managed" service has made explicit the need for evidence based practice at all levels of the organisation (DoH 1991b, DoH 1993a, Peckham 1993).

The National Health Service reforms (DoH 1990a) were instigated in response to the generally acknowledged "failure" of past management strategies (Strong & Robinson 1990, Harrison, Hunter, Marnoch & Pollitt 1992). The NHS and Community Care Act (DoH 1990a) radically re-organised the health service. Finances were decentralised down to the smallest management unit, and an internal market for care provision was created through the separation of the functions of purchasers and providers of health care.

If they were able to meet a limited set of criteria about practice size and activities, General Practitioners could become 'Fundholders' and assume responsibility for the purchasing of all health services used by their patients. Similarly, providers of community health services, able to submit an acceptable business plan, could opt out of District Health Authority control and become a self governing 'Trust'. Assuming Fundholding or Trust status meant that the individual organisation took full responsibility for the planning and administration of health care delivery, and operated as an independent

management unit, buying and selling services within the NHS internal market (Holliday 1992, Harrison et al 1992).

However, despite deregulation, the central control of funding of community health services remains with the Department of Health and the Treasury. In real terms the amount of control exercised by local units has been determined by their ability to adjust services so that central financial targets can be met (Walby & Greenwell 1994, Brough 1994).

#### **2.10.2. The G.P. Contract & Care in the Community**

Nurses working in the community have also been affected by the G.P. contract (DoH 1989a) and the reorganisation of health and social care in the community (DoH 1990c).

The G.P. contract requires all general practitioners to meet targets for childhood immunisation, health promotion and health surveillance. Although these activities fall well within the expertise of health visitors and district nurses (Ross 1990) the possibility exists that G.P.s in control of their own practice budgets may only want to purchase district nursing services on a sessional basis. Alternatively, fundholding G.P.s may choose to exercise managerial control by employing practice nurses to carry out these tasks, and so perhaps reduce the need for the services of district nurses or health visitors.

In addition more secondary health care is being provided in G.P. surgeries and patients' homes (Audit Commission 1992). Since the implementation of the community care reforms in 1993 district nurses may also find that they have additional responsibilities in the assessment and management of needy individuals previously resident in hospitals or local authority homes (Kenrick & Luker 1995). However, the difficulties in delineating health care needs and social care needs may mean that district nurses are marginalised if decisions about the nursing care needs of individuals are being made by local authority officers or social workers (Sylvester 1989).

It has been suggested that the reform of community health services have affected not only the context of district nursing practice (Black 1991, Stanwick 1994) but also the practice itself (McKenzie 1989, Bergen 1994).

Traditionally, district nursing has been concerned with the management of a caseload, the assessing, monitoring and delivery of care, as well as leading teams of nurses, delegating work and liaison with other agencies (Ross 1987, McKenzie 1989). However, the complex nature of the role and the general lack of understanding about the work of the district nurse (McIntosh 1985) means that it is difficult to predict how the district nursing service will respond to the continuing reform of community health services. It has been suggested that successive health service reforms have diminished the influence that district nurses have in the way community health policies and practices develop (McIntosh 1985, Ross 1987). It is possible that the

district nurse may become more managerially oriented (Ross 1990, Black 1991). Alternatively it may be that the role becomes more practically focused or more closely associated with supporting the work of G.P.s. It may even be that the role of the district nurse is delimited as more nursing work is devolved to unskilled health care workers or social service agencies (Griffiths & Luker 1994).

It would appear that much depends on the way district nurses themselves conceptualise and articulate their role in community health services, and to this end a sound evidential basis for practice would seem to be a necessity.

### **2.10.3. Skill Mix Studies**

Another feature of the reform of community health services which has impacted upon the work of district nurses is the need for service managers to meet efficiency targets (Oakley & Coulstock 1990), and to satisfy the demands of purchasers through the provision of a high quality, cost effective service (Lightfoot 1993).

Staff costs are the biggest single item of expenditure in the NHS and nursing staff account for over half the total workforce (Beardshaw 1992), so in this context nurses are an obvious target for efficiency savings. Since the publication of the review of nursing skill mix (DHSS 1986) there has been growing debate around the issue of whether nursing care needs to be

provided by qualified nurses (Slack 1986, Harper 1986, Oakley & C oulstock 1990).

A survey in all regional health authorities by Lightfoot, Baldwin and Wright (1992) which interviewed both purchasers and providers of district nursing services, found that district nursing establishments were usually set on an historical basis and were adjusted according to financial constraints. In 1992 the NHS value for money unit published the results of a study of district nursing activity (NHSME 1992). The purpose of the study was to identify and measure the management, administrative, nursing and ancillary components of district nursing work and thereby generate a staffing model which would improve caseload management, utilise district nurses' skills most effectively and produce financial economies.

The study was carried out in 3 community health units, taking a stratified sample of the different grades of nurses working on the district. Using an activity sampling technique, observers spent time with individual district nurses for the duration of a working day and recorded all nursing activities at 2 minute intervals. Data was also collected about the principal purpose of each visit.

The study found that in all 3 sites the top 10 principal purposes for visiting patients accounted for 70% of all district nurses' visits. These common activities were attending to hygiene and physical help (20%), attending to



major, intermediate and minor dressings (16%), care of leg ulcers (10%), observation visits (8%), giving insulin injections (8%), assessment visits (4%) and visits to terminally ill patients (4%). The study also found that except for the assessment visits all grades of district nurse, from H grade to D grade, undertook almost identical amounts of the clinical tasks.

This led the researchers to suggest that the higher graded district nurses would be more effectively deployed concentrating on caseload management, assessing and reassessing patients and delegating clinical tasks to other, lower graded, nurses. As over 50% of the district nurses in the study sites were graded at G and H grades the value for money unit concluded that there was scope to reduce the proportion of these grades to around 26% of the total workforce and increase the D, E and care assistant grades to make up the establishment numbers. This they suggested would also more accurately reflect the grade criteria set out in the nurses clinical grading structure (DHSS 1988).

Although it was not an aim of the value for money study, these findings highlight the fact that clinical tasks make up a very large proportion of district nurses work, and it may be that the essentially "hands on" nature of the job is what makes it attractive to practitioners. In addition most of these areas of common practice identified by the value for money team, such as dressings, injection techniques, care of the terminally ill and leg ulcer management, are well researched in medical, pharmacological and nursing

studies. This suggests that it is therefore possible for a large proportion of district nurses' work to be underpinned by clinical research findings.

Apart from the question of whether activity sampling techniques can accurately reflect the complexities of nursing work (Gault 1982, Dylak 1991), in practical terms, the perceived objectivity of the value for money unit's method is likely to make the approach attractive to service managers who are seeking to make efficiency savings. This could result in community units and trusts "downgrading" the posts of existing district nurses or even reducing the number of qualified district nurses and replacing them with health care assistants or other less experienced grades of nurse (Mansfield 1992).

Changes in the ratio of trained district nurses to other grades of staff is not necessarily the way to achieve a cost effective district nursing service. As Gibbs, McCoughan and Griffith (1991) point out, changing nursing grade mix is not the same as changing skill mix. There are no studies which have evaluated the effect on patient outcomes of changes in district nursing grade mixes (Mansfield 1992, Davison & Pearson 1994). However, skill mix changes may mean that the clinical component of the district nurses' role is gradually devolved to lower graded nurses while the trained district nurse takes on more responsibility for caseload and staff management. David (1991) suggests that as more health authorities and trusts seek to review the skill mix of district nursing services all practitioners need to be able to

identify and control what they do, which again points up the need for evidence based practice in district nursing.

#### **2.10.4. Managerialism in the NHS**

Another consequence of the reorganisation of community health care has been a fragmentation of services and the generation of many different organisational and management models (Fatchett 1994).

The Neighbourhood Nursing Report (DoH 1990b) describes community management models in terms of community trusts and directly managed units, neighbourhood management schemes, FHSA agencies , integrated outreach models and G.P. managed primary health care teams. Individual areas are encouraged to develop the model which is most responsive to local needs (DoH 1990b). However, as Dockerell and Wilson (1995) suggest, there is no health service specific model of management and the political ideology underpinning the reform of the NHS assumes that a management model appropriate to the private manufacturing sector is directly transferable to health care organisations.

The new style of management has seen the widespread importation of private sector practices into public sector administration (Hood 1991). Hunter (1993) suggests that the organisational reforms of the NHS emphasise performance and output targets through the use of quasi-

markets, at the expense of a coherent health policy. Health policy is shaped through the dynamic interactions of government departments, professional bodies and interest groups (Harrison, Hunter & Pollitt 1990) and since 1979 the prevailing political ideology has challenged the role of the state in health care provision and championed the role of the market and managerialism (Ham 1992). As far as the nursing profession is concerned the successive reforms of the service have gradually reduced the influence nurses and their representatives have on the policy making process in health care (Hart 1994).

Associated with an industrial model of management is the government's commitment to research and development in the NHS. The establishment of the Central Research and Development Committee (DoH 1991b) and the appointment of Regional Directors of Research and Development (NHSME 1994) have focused research activity within the NHS on the means to develop research based practice within the entire service. However, it has been suggested that despite these initiatives, few decisions, either about or within the service, are made on the basis of research evidence (Smith 1994, Closs & Cheater 1994, Bloor & Maynard 1994).

It has also been suggested that the reorganisation of the health service has been carried out on purely ideological grounds, without regard for the potential impact or costs of marketisation, and with no means of systematically evaluating the changes (Cox 1991, Hunter & Pollitt 1992,

Bloor & Maynard 1994, Le Grand 1994). As Bloor and Maynard (1994) suggest, in order to inform health policy and practice, research and evaluation are essential at all levels of the organisation.

#### **2.10.5. Nurses and General Managers**

Another dimension of the reform of health services which has impacted on community nurses is the nature of the changing relationship between district nurses and their managers. Since the introduction of general management into the health service (DHSS 1983) changes in the overall structure of the organisation have had profound effects on nursing management arrangements (Strong & Robinson 1990, Jacoby 1990). Ham (1995) suggests that the most significant aspect of the reforms has been the shift in the balance of power in the NHS, away from professional groups, and towards general managers.

In order for nurses to maintain positions of authority within the service it has been necessary for them to develop their managerial competencies, often at the expense of the clinical aspects of their role (Dean 1990). In community nursing it has often been the case that district nurses have been managed by health visitors and general nurses who, although they share a common professional background, may lack insight into the nature of district nursing work (McIntosh 1985). However, in the new culture of managerialism the emphasis is on the development of general management skills, which is

likely to lead to the situation where it is deemed acceptable for nurses to be managed by non-nursing staff (Dean 1990, Cox 1991). In addition, where district nurses are managed by non-nursing staff it is highly likely that many of the responsibilities for clinical practice, previously the remit of district nursing officers, become part of the responsibility of general managers. This would mean that decisions about the amount, type and quality of district nursing care delivered to patients will be dependent on the judgements and values of service managers rather than district nurses.

Whilst some managers of community nursing services may have insight into the principles underpinning district nurses clinical work, this can not necessarily be true of all. Yet, in the reorganised health service, the manager of district nursing services has a central role in ensuring the delivery of high quality and low cost health care (Harrison et al 1992). In order to meet this objective and provide research based care, the service manager has to balance the demands of government policy, professional interests and the needs of service users. Ham (1994) suggests that service managers are therefore faced with multiple and conflicting demands and a moral and practical dilemma as to how to maximise resources and at the same time ensure that clinical practices are consistent with research findings and the latest developments in health care.

#### **2.10.6. Organisational Goals**

In the market oriented culture of the reorganised NHS there is no basis for an assumption that nurses and general managers are pursuing the same organisational goals (McGuire 1990).

Research by Traynor (1994) studied district nurses and their managers in three first wave community trusts in order to explore how district nurses were responding to the reform of the service. Data were collected by means of questionnaires completed by 368 district nurses, from tape recorded interviews with 24 community trust managers and through 35 group meetings with district nurses and managers together.

Nurses in Traynor's (1994) study perceived managers to be predominantly concerned with short term financial goals and meeting output targets. They also believed that managers were largely ignorant of the nature and complexity of the district nursing role, and felt that service managers did not share nursing values. District nurses in this study also perceived themselves to be patient focused but believed that the new NHS culture did not prioritise the patient.

In contrast to this the managers who were interviewed felt that through 'stubborn individualism' and adherence to tradition district nurses were

frustrating organisational development and the achievement of corporate goals.

Traynor (1994) concluded that the district nurses and their managers had different sets of priorities and objectives and these findings certainly suggest a degree of tension between the values of district nurses and those of their general managers.

It could be argued that the ethos of general management places a narrow interpretation on the nature of 'service', 'costs' and 'efficiency', which is not the same as the professional understanding of these concepts. In this case, the kind of research needed to develop clinical practice will not necessarily bear any relation to that required by service managers who are more likely to be interested in quick answers to questions of productivity and outcomes (Closs & Cheater 1994, Mulhall 1995).

Although there are no studies as yet which indicate what effect the developing culture of managerialism in the health service has had on the use of research findings in clinical practice, it is possible that the different agendas of district nurses and service managers will militate against research utilisation in practice. If the message nurses are receiving from the reformed health service is to meet organisational goals, then there may not be any place for the testing and evaluation of clinical practice developments (Closs & Cheater 1994, Rodgers 1994).



Gray (1995) suggests that despite the apparent commitment to the development of research based practices in the NHS, conflicts between the imperatives of competition and the ethos of the medical professions are inevitable. If the general managers' objectives are not compatible with professional values and goals then it is likely that the management culture of the NHS will make the utilisation of research findings in clinical practice more difficult to achieve.

In this context it would appear that exploring the influence of the service manager is an important consideration in an investigation of research utilisation in district nursing practice.

### **2.11. Summary of Literature Review**

The review of the literature has identified several issues related to research utilisation in nursing; one being that there is very little known about research use in district nursing practice and another being that there is also very little known about the influence the organisational system of the reformed NHS has in facilitating or inhibiting research utilisation in the community.

Although there is considerable debate about the need for research in clinical practice and about the perceived barriers to implementation of research findings, there is a limited amount of systematic research into the issue. Much of the work has been carried out in north American hospitals which

raises questions as to whether the findings of such studies have cultural transferability to British district nurses. In addition, these American studies have proved difficult to evaluate due to a lack of robust outcome measures. However, they did provide useful insights into some of the issues associated with translating research into practice, principally the notion that research utilisation could be demonstrated through the measurement of nurses' clinical knowledge and their clinical practices.

The literature has also revealed that there is a question about whether the responsibility for research utilisation in nursing practice lies with individual nurses or within the organisational system. This issue is particularly pertinent in view of the stated objective of the CRDC to facilitate a knowledge based health service (DoH 1991b), and the professional goal of developing autonomy in professional practice (DoH 1989b).

The radical changes in community health services (DoH 1989a, DoH 1990a, DoH 1990c) appear to be subjecting the district nursing service to substantial changes which may ultimately have an influence on whether district nurses are able to use research in their practice. Nevertheless, it seems that the practice of district nursing still has a very large clinical component, much of which could be supported by diverse clinical research findings. However, it is possible that at the time of greatest need for research based clinical practice, the culture of managerialism and the

different policy agendas of district nurses and service managers in the new NHS may militate against research utilisation in district nursing practice.

Review of medical publications has also shown that there are doubts about the utility of the passive diffusion model of translating research information into practice innovations. The medical research suggests that active dissemination strategies may be more effective in influencing the behaviour of practitioners, however, no single method of research dissemination has been found to be more successful than another. Nevertheless, this does suggest that in any study attempting to measure research utilisation in district nursing practice an active dissemination model would need to be utilised.

The design and execution of the study reported in this thesis has therefore been informed by the general debate about research utilisation in nursing and by the findings of the studies discussed here. It has also been influenced by the NHS reforms of community health services, the changing role of the district nurse and the policy debate around the need for evidence based practice in a cost effective health service.

### **2.12. Study Aims**

Against this background the study was designed to test whether it was possible for clinical research findings to influence the knowledge and

reported practice of district nurses, and to do so within the organisational context in which district nurses work.

The study therefore had three aims;

- i) To test whether it was possible for research findings to influence district nurses' knowledge and reported practice.
- ii) To gain insights into the management of district nursing services in the reformed NHS.
- iii) To identify organisational factors, in the reformed NHS, which may influence the utilisation of research findings in district nursing practice.

The methods of investigation used to address these study aims are described in the following chapter.

**CHAPTER 3**  
**METHOD OF INVESTIGATION**

## **CHAPTER 3 - METHOD OF INVESTIGATION**

### **3.1 Introduction**

The main purpose of the study was to test whether it was possible for research findings to influence district nurses' knowledge and reported practice. The study was also concerned with identifying organisational factors and management processes in the reformed NHS which may influence research utilisation by district nurses. This chapter describes all the research techniques employed in the study, together with the theoretical justification for their use.

The study used two distinct groups of subjects, the district nurses and the service managers, and the administration and execution of both parts of the study are described in separate sections of the chapter. In each section the procedures used to develop and pilot all study instruments are discussed and then an account is given of the practical management of sampling, recruitment, data collection, reduction and analysis for the two parts of the study.

In order to address the study's first aim and test whether it was possible for research findings to influence district nurses' knowledge and reported practice it was necessary to operationalise the construct 'research

utilisation' and then disseminate specific research information to district nurses and measure the effects of the intervention.

To address the study's second and third aims of gaining insights into the management of district nursing services and identifying organisational factors in the reformed NHS which may influence research utilisation it was necessary to collect information about structures and processes within the organisations.

An exploratory study which had investigated sources of influence on district nurses' clinical decisions carried out prior to this research (Luker & Kenrick 1992) had given useful insights as to how the main study should be designed and managed<sup>2</sup>.

### **3.2. The Clinical Research Findings**

The first stage in carrying out this research was to identify an aspect of clinical practice which was common to district nursing and which also had an associated body of practice related research. Once this had been done it was then possible to design the study and the data collection instruments.

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<sup>2</sup> A report of this exploratory study was published in the Journal of Advanced Nursing (1992), v17, p457 - 466, and is reproduced in full as Appendix I of this thesis.

### 3.2.1. Selection of Clinical Subject Matter

Previous work (Luker & Kenrick 1992) had indicated that a large part of district nurses' work was taken up with the care and management of patients with leg ulcers. This observation was supported by the literature suggesting that leg ulcers occur in approximately 0.15% of the population (Cornwall 1985, Browse, Burnard & Thomas 1988, Cullum 1993). The literature also reported that between 70% and 90% of patients with leg ulcers are treated by district nurses in the community (Callam, Harper, Dale & Ruckley 1985, Cullum 1993, Roe, Griffiths, Kenrick, Cullum, Hutton 1994), and that the care of patients with leg ulcers takes up between 10% and 25% of district nurses time (Moffat, Franks, Oldroyd, Bosanquet, Brown, Greenhalgh, McCollom 1992, NHSME 1992). In addition, the nature and progress of leg ulceration means that they frequently recur and are very costly, both in terms of the district nurses' time, and the products and treatments used on them (DoH 1992b, Moffat et al 1992, Cullum 1993). In this context the management of leg ulcers could be seen as a clinical issue which had relevance to the practice of most district nurses.

The selection of leg ulcers as the subject matter to be disseminated in the study was also influenced by the finding of Callam et al (1987) that there was a wide variation in nursing practices related to care of this patient group. In addition there was a considerable body of published research indicating *appropriate nursing interventions* for patients with leg ulcers



(Cornwall 1986, Dale & Gibson 1986, Morgan 1987, Cornwall 1988, Dale & Gibson 1989, Cameron 1990, Thomas 1990, Cherry, Cameron & Ryan 1991). This suggested that some guidance for research based practice could be compiled from this published research literature and disseminated to the district nurse participants in the study.

As far as the managers of district nursing services were concerned, although they were unlikely to have any direct responsibility for the care of patients with leg ulcers, it was assumed that the financial implications of leg ulcer care would be a matter of some interest to them. The cost of treating a patient with leg ulcers has been estimated at between £1000 and £5200 per patient per year (DoH 1992b). In which case, several patients with leg ulcers on a district nurse's caseload, would inevitably have an effect on the service manager's budget and overall expenditure.

In this context the clinical subject matter of leg ulcer management could be seen to have relevance to both the district nurses and the service managers in the study population.

### **3.2.2. Presenting the Clinical Research Findings**

The research findings were presented to the district nurses in the form of a Clinical Information Pack which was titled 'The Management of Leg Ulcers

in the Community' (Kenrick, Luker, Cullum & Roe 1991 - see Appendix II).

Earlier work had found that information supplied by drug company representatives was seen by most district nurses as a high quality and attractive source of clinical information (Luker and Kenrick 1992). With this in mind, an educational grant was secured from a commercial company which allowed the clinical information pack to be printed to a similar high standard<sup>3</sup>.

The Clinical Information Pack (Kenrick et al 1991) was developed through a critical review of published literature relating to the care and management of leg ulcers. Another researcher, who had been engaged for three years on a systematic review of leg ulcer research (Cullum 1993) supplied a list of selected references to enable the researcher to access relevant and appropriate research material. These included the published findings of medical, pharmacological and nursing research. This material was then appraised and evaluated in terms of its scientific merit, and then the clinically useful information was extracted and collated into a form which would be accessible to district nurses.

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<sup>3</sup> It should be noted that the association with the commercial company did not compromise the study in any way. The award of the grant was unconditional and did not require the promotion of any of the company's products. The only acknowledgement of their underwriting the production of the Clinical Information Pack was a reference to the company name on the outside back cover. See Appendix II for Clinical Information Pack.

The technique of critical review adopted here falls short of the methodological rigour demanded of systematic review of research findings (Abraham et al 1987, Smith & Stullenbarger 1991, Chalmers & Altman 1995). Systematic review uses standardised objective measures for appraising both published and unpublished research. Conclusions are drawn only when the collection, analysis and synthesis of all information has been conducted in a systematic manner (Light & Pillemer 1984, Mulrow 1987).

However, the disadvantages of systematic review are that it is very labour intensive and can be extremely difficult and time consuming attempting to access all published and unpublished research material related to a particular subject area. Although non-systematic reviews are inherently subject to selectivity and publication biases (Chalmers et al 1990, Dickersin 1990), for many individuals, published research material is the only source of research information accessible to them.

Whilst acknowledging the limitations of a non-systematic review of research material, a pragmatic approach to the preparation of clinical research findings for dissemination in this study was taken. In the context of the study aims and the amount of time available to one researcher, a critical review of the leg ulcer research was deemed an adequate and appropriate technique for the collation of clinical research information.

### **3.2.3. Preparation of the Clinical Information Pack**

The clinical research material was read several times by the researcher and aspects of practice which recurred in the literature and had an evidential basis were extracted, logically ordered and rewritten in draft form. The drafts of the pack material were written on a word processor and printed on plain white paper. They had no covers and no illustrations.

Draft material was piloted with 12 district nurses from two health authorities outside the study region. The district nurses in the pilot sites were asked to read the draft contents of the clinical information pack and comment on the content, the layout and how comprehensible they found the material. They were also asked to make suggestions as to how they felt the material could be best presented. The initial draft of the clinical information pack was found to be turgid and inaccessible and the second draft which presented the material in an oversimplified manner was found to be patronising. The clinical research material was rewritten four times, until this group of district nurses deemed it relevant and acceptable.

An important feature of the development of the clinical information pack was that the language and syntax used was both credible and comprehensible to practitioners. In addition the district nurses involved in the pilot work stated that they preferred the material to be concise and arranged in clearly defined subsections. They also suggested that illustrations would be useful. When the pack contents were found to be acceptable to the nurses in the pilot group it was then scrutinised by the

researcher with expertise in systematic review of leg ulcer research. Once the accuracy of the contents had been confirmed and the illustrations of leg ulcers had been selected the material was sent to a professional publisher for typesetting and printing.

The finished pack comprised only eight pages of text, with four colour photographs illustrating different stages of leg ulceration and healing. A deep blue colour with white print was selected for the cover of the pack on the basis of its similarity to the colour of district nurses' uniforms.

Within the pack the material was arranged in sections. These gave background information, guidelines for nursing assessment, principles of nursing treatment and principles of health education and long term care of this patient group. The last section of the pack was a summary of recommended practice. Each section was summarised using bullet points.

The background information section identified prevalence rates, patterns and common causes of leg ulceration. For example, under the subheading "Patterns of Chronic Leg Ulceration" the text states;

Studies have shown that between 50%-80% of treated leg ulcers may heal within a year and yet about 75% of patients will have one or more recurrence of ulceration (Callam et al 1985, Cornwall et al 1986, Browse et al 1988).

Although a degree of circulatory disease is present in all sufferers, no single factor has been identified which will indicate how an ulcer will respond to treatment, or the likelihood of it recurring (Browse et al 1988). (p2)

In addition to the background information the pack also contained a total of 62 discrete items of clinical information, all of which were achievable by district nurses without the input of extra resources. Twenty four of these points were related to the assessment of patients with leg ulcers. These included assessment of the patient's general condition, taking a general and ulcer related history and clinical examination of the patient and the ulcer. So for example under the heading "Examination of the Ulcer" the pack suggested that a detailed examination of the ulcer's characteristics was essential for the effective evaluation of progress. Then under 9 separate subheadings the pack gave information about the site of the ulcer, the onset and duration of ulceration, the size, appearance and depth of the ulcer, the presence of oedema, the pattern of any pain and the state of the ulcer base. These represented 9 points of clinical information which could inform a district nurse's assessment of a patient with a leg ulcer.

In the subsection concerned with the district nursing treatment of leg ulcers a further 24 items of clinical information were identified. These included research based information on cleansing and dressing leg ulcers, the advice a district nurse may give to patients with different types of leg ulcers, such as when and how to exercise the calf muscles, and the need for systematic treatment of any underlying disease processes.

Another section of the pack contained a further 14 items of clinical information designated as "general knowledge" in the study. These points

related to causes of allergic reactions, delayed healing in patients with leg ulcers and when it was appropriate to refer a patient for another opinion. The information detailed means of monitoring the progress of nursing treatments and how to prevent ulcer recurrence.

The final section of the pack was a summary of recommended practice which detailed in note form the principles of nursing assessment of patients with leg ulcers, the principles of nursing treatment and strategies which district nurses could adopt to prevent ulcer recurrence. A review of clinical research was not included in the text, but references and sources of further information were listed at the back of the pack.

Other work with district nurses had suggested that much information exchange on the community was made verbally. This, together with the estimate that district nurses spend up to 25% of their working day in their cars (NHSME 1992), prompted the inclusion of an audio cassette tape in the information pack. The text of the completed information pack was written into a script by the researcher and then read onto tape by a B.B.C. presenter, who's voice is commonly associated with radio and T.V. programmes with a medical orientation. The tape was included in a pocket at the back of each clinical information pack.

Development, preparation, piloting and printing of the information pack took approximately 10 months. (See Appendix II - Clinical Information Pack).

### **3.3. The Study Design**

#### **3.3.1. Operationalising 'Research Utilisation'**

In this study an assumption was made that research findings can influence district nurses' understanding of a clinical issue as well as the way they carry out their clinical practices (Brett 1987, Stetler & DiMaggio 1991). In this context the construct 'research utilisation' could be demonstrated through district nurses knowledge about leg ulcer management and also through the way they used research findings to inform their clinical practice in the care of this patient group.

This would make it possible to use the available research evidence about leg ulcer management which had been collated into the clinical information pack as the index against which district nurses' knowledge and reports of their practice behaviours could be scored.

As the clinical information pack had identified 62 items of clinical information related to the district nursing management of leg ulcers, the study instruments had to be constructed to elicit this amount of information. The information supplied by the district nurse could then be reduced to a score which reflected the number of points of clinical research information that the district nurse had identified. This score could then be taken to



represent the extent of the research utilisation in this area of clinical practice.

In this way differences in district nurse's scores between measures would be indicative of changes in the utilisation of research findings in the study population.

### **3.3.2. Constraints on Study Design**

In respect of the need to collect data on district nurses' knowledge and practice the literature suggests that there is a discrepancy between what nurses know and what they do (LeLean 1982, Hockey 1987, Luker & Kenrick 1992). This suggested that the study instruments would need to be capable of measuring both knowledge and practice and would also allow these two elements to be included in the score.

The means of observing and recording clinical practice also had to account for the fact that district nurses work mainly in isolation. In addition, sensitivity was required to ensure that district nurses did not feel that their clinical competence was being "tested" in some way by taking part in the study.

These considerations initially suggested that an ethnographic approach to the study would be appropriate. However, the limitations of this approach

would have meant that only a small number of nurses could have been sampled (Gilbert 1993, Marshall & Rossman 1995), and because of the nature of the research problem it was desirable to sample relatively large numbers of nurses and their managers. However, the need to sample large numbers of district nurses meant that the study would have to rely on self report methods of data collection. It was therefore acknowledged that it would only be possible to gather information about district nurses' knowledge and reported practice as opposed to their actual practice.

### **3.3.3. Feasibility of Data Collection**

The structure of the district nurses' working day made it feasible to gather large groups of nurses together for data collection. Despite the fact that they spend much of their time working alone, most district nurses meet each other at clinics or health centres at least once a day, usually around lunchtime. Although collecting data from groups can expose samples to contamination biases (Judd, Smith & Kidder 1991), these can be reduced, to an extent, by the presence of the researcher throughout the data collection sessions.

An insight from previous work (Luker & Kenrick 1992) which had practical implications for the study was that district nurses would sometimes meet at lunchtimes for a product demonstration from drug company representatives. In these situations the "drug rep" often provided a lunch for

the district nurses and many saw this as an incentive to attend the demonstration. On the basis of this information the provision of a lunch for participants was a technique adopted in the main study. The lunch could have been seen as introducing coercion biases (Gilbert 1993), although it was in fact an exchange for the district nurses' time. By completing questionnaires in their lunch-breaks the district nurses were giving their own time to the study, so the provision of a sandwich lunch was a means of restoring equity to the relationship between researcher and subjects.

#### **3.3.4. Accessing Organisational Data**

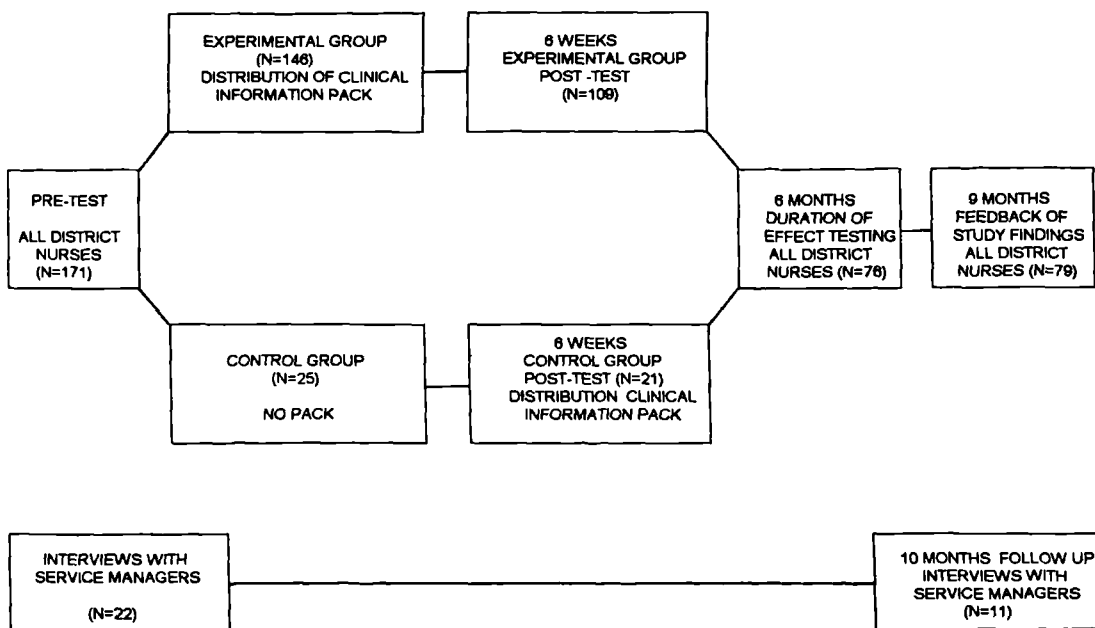
In order to access the district nurses for inclusion in the study the researcher had to first approach service managers for permission. The contact with these managers suggested that they themselves would be a valuable source of information about the organisation. The interviewing of "elite" individuals is a strategy particularly appropriate for the study of organisations because of the insights and information available to them by virtue of their position (Bryman 1989, Marshall & Rossman 1995). In the case of the service managers, their contact with both the executive and the district nursing workforce, would enable them to offer unique insights into the structures and functions of primary health care organisations.

### 3.3.5. Elements of the Study

With all these factors taken into account the decision was taken to conduct the study in two distinct parts and to relate each set of findings to the other.

In order to address the study's first aim a pre-test / post-test non equivalent control group study was designed, with the control group being employed to estimate the interactive effects of pre-testing. In order to add depth to the findings a duration of effect test was also included as part of the study design. The second and third aims of the study were addressed through interviews with service managers. The overall study design is illustrated in Figure 3.1.

Figure 3.1. Diagram of Study Design



The purpose of the pre-test was to establish a baseline score of all district nurses' knowledge and reported practice related to the clinical management of leg ulcers, which would then be taken as the measure of underlying research use. District nurses in the experimental group were then issued with a copy of the Clinical Information Pack (Kenrick et al 1991) containing the distilled clinical research findings, and district nurses in the control group were given the pack after completion of the post-test. Both groups of district nurses were retested six weeks after the pre-test in order to assess changes in individual and group scores. Duration of effect testing was attempted 6 months after completion of the post tests. Results were returned to the study participants approximately 9 - 12 months after data collection was completed.

Service managers were interviewed around the same time as pre-tests were being carried out, and again at follow up interviews after descriptive results had been returned to the study authorities.

### **3.4. Theoretical Basis of Methods of Investigation**

#### **3.4.1. Quantitative & Qualitative Approaches**

Although a variety of approaches can be taken in addressing research questions in nursing, there is considerable debate about whether quantitative or qualitative approaches are more appropriate for studying nursing

phenomena (Melia 1982, Leininger 1985, Duffy 1985, Corner 1991, Rolfe 1994, Greenwood 1984, Carr 1994). The essence of the debate is that the inherent reductionism in quantitative approaches diminishes nursing phenomena by studying them out of context, whilst the subjectiveness of qualitative approaches sacrifices some research control and replicability of findings.

The philosophical basis of quantitative research methods is the logical deductive approach associated with positivism (Harre 1985). Quantitative research techniques in nursing derive from the physical and natural sciences and employ a systematic and objective approach to data collection and analysis (Melia 1982, Cormack 1991). They are inherently reductionist and methods are concerned with the definition and control of variables under investigation. Observations and measurements are quantified and subjected to statistical testing. The type of theories generated by quantitative research approaches are normative, suggesting propositions to explain the nature of the relationships between variables. Theory testing is through empirical support or refutation of deduced hypotheses (Polgar & Thomas 1991).

In contrast to this, qualitative research approaches are seen to be more appropriate for the study of phenomena in their social contexts (Bryman 1984, Silverman 1985). In qualitative research approaches the researcher's position is one of a participant in the research, and the nature of the relationships established with subjects becomes part of the data (Strauss &

Corbin 1990). The qualitative researcher does not seek to impose control on the research situation but rather to explore and understand attitudes and behaviours from the subject's perspective (Silverman 1985, Gilbert 1993). Procedures for analysing qualitative data do not rely on numerical reductionism, but seek to interpret the meanings of observed behaviours and the data contained in texts, field notes and transcripts (Strauss & Corbin 1990, Silverman 1993). Theories derived from qualitative research are inductively built, giving insights into social contexts and personal meanings (Polgar & Thomas 1991). In this respect it has been suggested that the inherent holism of qualitative research methods makes them a more appropriate strategy for nursing research (Melia 1982, Koch 1994).

Quantitative and qualitative approaches are not mutually exclusive, and both have their utility in nursing investigations. The use of multi-method approaches can be complementary, and the findings together can offer a greater understanding of the research issue being studied (Polit & Hungler 1992, Carr 1994). However, the utility of any research approach can only be assessed in relation to the stated purpose of a study, and the nature of the research question the study is trying to address.

#### **3.4.2. Methods for Studying District Nurses**

The first aim of the study, to test whether it was possible for disseminated research findings to influence district nurses' knowledge and reported

practice, suggested that a predominantly quantitative approach, supplemented by qualitative data, would be appropriate.

Within quantitative research approaches, randomised experiments offer the most robust study design for investigating causal relationships between variables (Judd et al 1991). In experimental designs the researcher plays an active part by manipulating variables and introducing controls into the research situation. The researcher also exercises control through the random assignment of subjects to experimental and control conditions.

The methodological strengths of this approach are that data are robust and easy to handle and are also amenable to statistical analysis. Through the control of threats to internal validity, causality can be inferred from experimental findings (Campbell & Stanley 1966). In addition, it is possible to directly compare the findings of experimental studies to other research results.

However, experimental research designs also have their methodological weaknesses. The cost of high internal validity is that the ability to generalise from findings to a wider population is often reduced. Also, particularly in experimental research with human subjects, there are many variables which are not amenable to manipulation in the research situation (Polit & Hungler 1993).



A useful compromise position can be found in the non-randomised experimental design (Judd et al 1991, Polgar & Thomas 1991). These study designs make use of pre-existing groups of people and in nursing research studies they offer a feasible and practical alternative to the randomised experiment. The advantages of non-randomised experiments are that the methodological problems associated with taking phenomena out of context are reduced as the research is usually conducted in the field (Judd et al 1991). As a result the findings of the study are more likely to have relevance to a wider population. However, by using naturally occurring groups of subjects the researcher inevitably sacrifices some experimental control. As a consequence the inference of causality in variable relationships is more difficult because of competing explanations for observed or measured effects on the dependant variable (Campbell & Stanley 1966).

A review of research methods texts suggested that in order to address the study's first aim a non-randomised experimental design would be an appropriate approach. In such studies data can be collected and recorded using a range of techniques. These include the self report methods of questionnaires and interviews, as well as structured observation and scaling techniques. Data collection methods vary in terms of their structure, quantifiability, objectivity and obtrusiveness (Polit & Hungler 1993), and appropriate data collection methods will be determined by the design and purpose of the study. In this study, the aim of testing whether research findings could influence district nurses' knowledge and reported practice,

demanded a fairly structured approach to data collection with a high degree of quantifiability, the consequence being that the methods would be necessarily obtrusive. This suggested that a self administered questionnaire would be an appropriate means of collecting data from the district nurses.

### **3.4.3. Methods for Studying Service Managers**

With regard to the study's second and third aims of gaining insights into the management of district nursing services in the reformed NHS and identifying organisational factors which may influence research utilisation, data about the organisations also had to be collected. In order to facilitate understanding of an organisation its goals and purposes, structures and process and the functions of its managers need to be explored (Dawson 1986, Huczynski & Buchanan 1991, Kolb, Rubin & Osland 1991, Mullins 1993). The review of the research methods literature suggested that in order to address these aims a more qualitative interview approach would be appropriate.

The research interview is described as a purposeful exchange of information between researcher and interviewee (Gilbert 1993). However, the nature of the interview will be influenced by both the study's aims and the theoretical orientation of the research (Silverman 1993). Interview techniques range from formalised, highly structured procedures through to an unstructured conversational approach. As one of the self report methods of data

collection, interviews have several advantages. The researcher has some control over the way questions are answered and it is easier to avoid misunderstandings. The researcher's presence also means that additional data can be collected through probes and observations (Polit & Hungler 1993). The major weakness of the interview approach is that the researcher can introduce interviewer effects, such as social desirability response biases, and so reduce the quality and accuracy of the data collected (Judd et al 1991).

Consistent with the positivistic approach taken in this study the purpose of the interviews with service managers was to uncover "facts" about the organisation rather than 'construct meanings' between the interviewer and respondent (Miles and Huberman 1984, Silverman 1993). As it was also necessary to make comparisons between different study localities the interview was required to have a degree of structure.

The advantages of semi-structured interviews are that a set of topic areas are covered in the interview, but the researcher is not limited by a rigid schedule. In the semi-structured interview it is possible to alter the sequence of questioning and to probe for more information, and therefore the researcher is able to adapt the instrument to the individual respondent (Judd et al 1991, Gilbert 1993). In the semi-structured interview the relationship between the researcher and interviewee is more natural, in that whilst the discourse is focused on particular areas of enquiry it is not inhibited by the

strictures of a structured interview schedule. In this way the semi-structured interview allows a degree of rapport to be built between the researcher and interviewee which is not as demanding as the relationship necessary for in depth interviewing (Marshall & Rossman 1995). The technique of the semi-structured interview is particularly useful when interviewing "elite" informants in organisations who are more likely to want to exercise some control over the interview situation (Bryman 1989, Marshall & Rossman 1995).

The methodological weaknesses of semi-structured interviews within a positivist framework are to be found in relation to the reliability and validity of the data collected. The positivist approach is underpinned by the belief that "facts" exist independent of the research setting, and that the researcher can uncover them through the research process. In this context the semi-structured interview may not necessarily be the most appropriate tool for accessing factual data. Whilst the semi-structured interview creates flexibility in the research situation, it also reduces the direct comparability of data. In addition, positivist assumptions do not account for differences in meanings in the words and language used by the interviewee and subsequently interpreted by the researcher (Maseide 1990). The problem of interpretation can be overcome to an extent by having transcripts or field notes checked for accuracy by the interviewee, or by having interview data independently coded by other researchers.

#### **3.4.4. Documentary Sources**

In studying the structures and processes of organisations useful contextual data can also be found in documentary sources. As Bryman (1989) suggests, an organisation's documents can provide material not usually accessible to conventional research techniques.

In this case it was decided to ask all service managers to furnish the researcher with any corporate information leaflets or business plans which may be available. These could then be subjected to a content analysis in order to gain further insights into the organisations in which the district nurses were working.

#### **3.4.5. Content Analysis**

To be useful in furnishing insights into the organisations, interview data had to be analysed in such a way as to facilitate their interpretation in relation to the quantitative findings from the questionnaire data.

Content analysis is an analytical procedure which imposes a structure on textual material, and so makes it possible to deal with qualitative elements in an essentially quantitative study (Gilbert 1993). The process involves the researcher counting and classifying words and phrases in data into content categories which are exclusive, exhaustive and consistently applied (Weber

1990, Marshall & Rossman 1995). The findings from a systematic content analysis can be used to generate propositions about variable relationships and also to illustrate and enhance findings from quantitative data.

Content analysis is susceptible to problems of reliability and validity. In order for a coding system to be reliable it is necessary that the same results are obtained each time the data is classified, and also that consistent results are obtained when data are categorised by different coders (Krippendorf 1980, Weber 1990).

To ensure validity in content analysis there needs to be some correspondence between the category and the concept which it represents. As an analytical procedure content analysis has been criticised for over reliance on face validity in category definitions (Weber 1990). However, reliability and validity of categories can be enhanced by the use of more than one 'coder' and by the use of appropriate content analysis dictionaries in computer software (Dey 1993).

In this study the technique of content analysis was used for interpreting both the interview data and the responses to open ended questions in the district nurses' questionnaires.

### **3.4.6. Ethical Considerations**

The ethical considerations raised by the study related to the principle of respect for human dignity of the nurses and managers participating in the research (Polit & Hungler 1993).

In order to address these ethical concerns all district nurses were advised, before data collection commenced, that participation was entirely voluntary and that they were free to withdraw from the study at any time.

Confidentiality was assured in that all nurses would be identifiable by personal code numbers known only to themselves. An undertaking was given that findings would be written up so that no individual could be identified by any other person. The purpose of the study was explained to all potential participants, and the need to complete two very similar questionnaires was outlined by the researcher. The underlying principle of this was to give potential respondents sufficient information to enable them to make an informed choice before committing themselves to involvement in the study. The independent nature of the research was also pointed out to all district nurses. Consent forms were not issued as a district nurses' agreement to participate in the study, through completion of the questionnaires, was taken as tacit consent.

Service managers were also advised of the purpose and nature of the research and again the voluntary nature of participation was stressed. Although the interview technique adopted meant that the service managers were known to the researcher as individuals, for the purpose of the study they were identified by randomly assigned codes, known only to the researcher. The manager's agreement to be interviewed was taken as their consent to participation in the study.

All completed questionnaires and interview data were kept securely in two filing cabinets, away from the research sites, to which only the researcher had access. Data entered onto disc for analysis did not permit the identification of any individual district nurse or manager.

By way of upholding the principles of full disclosure and freedom from exploitation the researcher also made a commitment to return the study findings to the participants. This was carried out after data had been collected and analysed descriptively, and reports were written such that no individual district nurse or manager could be identified. Detailed reports of study findings were presented to all participating authorities with permission to photocopy as required.



## **PART ONE - THE DISTRICT NURSES**

### **3.5. Instrument Development & Pilot Studies**

#### **3.5.1. Constructing the Questionnaires**

It was apparent from the planning phase of the study that an appropriate data collection instrument for use with the district nurses would be a questionnaire. The main advantages of questionnaires are their administrative simplicity, the reduction in reactivity biases, the ability to gather retrospective data and the opportunity for immediate responses. They are also useful for maintaining anonymity of respondents (Oppenheim 1966, Judd et al 1991, de Vaus 1993). However, as with other self report methods of data collection, the accuracy and completeness of responses cannot be guaranteed (Polit & Hungler 1993).

However, a well designed questionnaire is capable of eliciting accurate data (Polgar & Thomas 1991). Attention must be paid to the content, order and wording of the questions to ensure that prestige and ordinal biases are not introduced (Foddy 1994). Biases can also be introduced through the inclusion of "leading" questions (Oppenheim 1966).

The format of questions can invite either open ended or fixed alternative responses and both formats have their methodological strengths and

weaknesses. Open ended questions are simple to construct and allow for more detail and richness in data. However, open ended questions can also inhibit respondents, and the analysis of the data is a more complex process (Polit & Hungler 1993). In contrast to this, fixed alternative questions are most useful for collecting factual data, and whilst they may be more difficult to construct they are considerably easier to analyse. However, there is a danger that the fixed alternatives presented on a questionnaire do not accurately represent the respondents views or behaviours (Oppenheim 1966, Foddy 1994).

In this context, there was an advantage in having a questionnaire which comprised both fixed and open ended questions. Fixed alternatives were appropriate for collecting biographical data about the district nurses. However, in relation to the questions about the district nurses' knowledge and reported practice the researcher did not want to ask leading questions or bias the data by offering a selection of alternative practices. Therefore, in this instance, open ended questions seemed more appropriate.

Pre and post test questionnaires and duration of effect schedules were all related to the contents of the Information Pack and were designed to facilitate the computation of a "score". The measurement of differences in scores is appropriate for estimating individual differences and inferring treatment effects from group differences (Burkhardt, Goodwin & Prescott 1982). In this context the design of the practice related questions was such

that if the clinical information pack, as a source of research information, was capable of influencing district nurses' knowledge and reported practice, then their overall "scores" on this instrument would increase. Changes across this variable formed the basis of the test of the ability of disseminated research information to influence district nurses' knowledge and reported practice.

### **3.5.2. Piloting the Questionnaires**

The pre and post-test questionnaires and duration of effect schedules were developed in conjunction with the Clinical Information Pack, and were piloted and refined by the 12 district nurses in the 2 Health Authorities outside the region where the main study was conducted.

In the initial stage of the pilot work the 12 district nurses were each given a blank sheet of paper and asked to write about their practice in relation to leg ulcer management, while the researcher was present. Discussion with the researcher was encouraged so that ideas could be gained about how district nurses felt about being asked to describe an aspect of their everyday work. This strategy revealed that while district nurses were usually quite comfortable talking about their work they found it difficult to conceptualise and write about the management of leg ulcers except in relation to particular patients.

Therefore in the second stage of the pilot work a rudimentary instrument was devised which used 'prompts' relating to different aspects of practice. The researcher again asked the district nurses to write about the management of patients with leg ulcers but this time gave the district nurses a sheet of paper with prompt words such as 'assessment' 'dressings' 'bandaging'. It was found that by having a degree of structure the district nurses were able to deal more efficiently with the task of writing about the management of leg ulcers. It was also possible to collect more useful and relevant data.

However, even this device failed to elicit information about all aspects of district nursing practice in leg ulcer care, so the third draft of the instrument used the information collected from the district nurses, and the material contained in the clinical information pack to frame 22 specific questions about various stages in the assessment, treatment and long term management of patients with leg ulcers. This approach was very successful in eliciting appropriate practice related data, without appearing to lead the district nurses into making 'expected' answers. In the final refinement of the instrument some ambiguous wording was corrected and three irrelevant questions were removed. The final draft of the instrument contained 19 practice related questions and was piloted with 4 district nurses known to the researcher. This allowed the researcher to estimate the time it took to complete the questionnaire, so that appropriate arrangements for data collection in the main study could be made.

### **3.5.3. The Practice Related Questions**

Within the operational definitions of the study the concept of research utilisation is comprised of both knowledge about leg ulcers and district nurses reported practice, and this is represented by the nurses' scores.

These instruments were designed to facilitate the district nurse respondents obtaining the maximum possible score, and at the same time ensure that they did not feel that any judgements were being made about their clinical competence. The district nurses' score in both the pre and post-test instruments was derived from the 62 of items of research information contained and presented in the clinical information pack. The nineteen scoring questions each had two sections and were designed to elicit information both about how district nurses usually cared for their patients with leg ulcers and also what they knew about the management of this patient group. To this end the first part of all the practice related questions asked the nurses to describe their actual practice, and the second part asked if she would do anything differently in an "ideal" situation. For example, Question 4 of Section 2 was looking for the district nurse to reveal that she would measure the patient's blood pressure, perform a routine urinalysis and take a blood sample for routine screening and it asked;

- a) When making your assessment of patients with leg ulcers which clinical investigations do you routinely carry out?

- b) If you had unlimited time and resources would you do anything differently? If yes please state.....

This strategy was used to facilitate "maximum scoring" and was intended to induce district nurses to record everything they knew about leg ulcer management. At the same time the questions also aimed to identify factors which the district nurses perceived to be constraining their practice. So for example, in response to the above question, it was assumed that if a district nurse knew she should routinely measure her patient's blood pressure but did not have access to a sphygmomanometer then she would be expected to write this in Section b) of the question, and would therefore still accrue the "score" for this item of information.

The 19 open ended practice related questions from which the scores were computed were identical in the pre and post-test instruments and the duration of effect schedule. Five questions were concerned with the assessment of patients with leg ulcers, which included questions about general assessment, assessment of the patients legs and the ulcer itself, clinical investigations and the stages of breakdown and healing in leg ulceration. A further 9 questions in the treatment section were related to the cleansing, dressing and bandaging of leg ulcers and the general care and advice which would be given to patients by their district nurse. Five questions were related to general knowledge about leg ulcers, including causes of allergic reactions and delayed healing, the monitoring of progress and the prevention of ulcer recurrence.

### 3.5.4. Pre-test Questionnaires

The front of the pre-test document contained a "Personal Number", to facilitate matching the completed pre and post test questionnaires.

Biographical questions were in the first section of the pre-test instrument. There were 11 questions designed to elicit demographic data and that relating to a nurse's caseload. Other questions in this section were concerned with the nurse's usual means of 'keeping up to date', and the perceived constraints on practice, both of which had been previously suggested to influence a nurse's ability to utilise research findings (McClure 1981, Hefferin et al 1982, Brett 1987, Bostrom et al 1989, Champion & Leach 1989). These questions offered respondents a number of fixed alternative responses, and their purpose was to describe the study population and identify contextual factors which could help interpret the results. For example, Question 9 of Section 1 asked;

In the last year have you read anything about leg ulcers? (Tick all which apply)

- No I haven't
- Books
- Journal Articles
- Information from Drug Reps
- Other (Please Specify)

Although experienced researchers often counsel against opening questionnaires with "personal" questions (Oppenheim 1966, Judd et al 1991, de Vaus 1991), in this study the more sensitive and potentially difficult questions were the ones concerning the district nurse's practice. Opening the questionnaire with simple factual questions also had a facilitative function. It enabled district nurses to familiarise themselves with the instrument and gain confidence in completing the questionnaire, before they attempted to complete the practice related questions.

The 19 practice related questions which were used to compute the district nurses scores were in the second section of the pre-test questionnaire (See Appendix III - Pre-test Questionnaire).

### **3.5.5. Post-test Questionnaires**

The main purpose of the post-test was to measure any change in nurses' scores from that recorded at pre-test. The secondary purpose was for respondents to evaluate and critique the Clinical Information Pack in terms of its acceptability and usefulness to them as practitioners.

For the experimental group the instrument was divided into three sections. The first short section comprised 5 fixed alternative questions. Two of these were to help match pre and post-test data. The remaining 3 were designed to identify any factors other than the clinical information pack which may



have raised a district nurses' awareness of leg ulcer management, such as having attended any course related leg ulcer care in the six weeks between tests.

Section two of the post-test contained the 19 practice related questions identical to those in the pre-test instrument. These questions were reproduced exactly, in order to facilitate a direct comparison between individual and group pre and post-test scores.

The third section of the instrument was concerned with the district nurses' evaluation of the Clinical Information Pack, and contained 16 questions. These were fixed alternative questions with additional space for respondents to elaborate their opinions if required. One question related to the district nurses' use of the pack and the remainder were concerned with the pack's content and the way the information had been presented. For example;

Did the information pack contain any information which you had not come across before?

Yes - nearly all the information was new to me.

Yes - some of the information was new to me.

No - I was familiar with a lot of the information.

No - I was familiar with all the information.

Separate questions were asked about the text and tape formats and which medium the district nurses preferred (See Appendix IV - Post-test Questionnaire Experimental Group).

The first and second sections of the control group's post-test questionnaire were identical to the experimental groups post-test instrument. The evaluation questions were omitted as the district nurses in this group were not exposed to the clinical information pack until after the post-test (See Appendix V - Post-test Questionnaire Control Group).

#### **3.5.6. Duration of Effect Schedule**

A duration of effect test, to be carried out six months after completion of post tests was conceptualised as part of the study design. The final page of all pre and post test questionnaires therefore invited district nurses to supply a name and contact number if they were prepared to be interviewed about the study at a later date.

The schedule for the duration of effect testing was designed alongside the other study instruments and, like them, it also sought to elicit the 62 points of clinical information contained in the clinical information pack. However, rather than ask district nurses to complete another lengthy questionnaire it was proposed to interview individual district nurses and for the researcher

to ask the 19 practice related questions as part of a structured interview schedule.

As all study participants would have seen a copy of the clinical information pack at the time the duration of effect testing was carried out, it was possible to make direct reference to the clinical information pack in framing the practice related questions. So for example one of the general knowledge questions about the known causes of allergic reactions in leg ulcer patients stated;

You may recall that the pack had some information about things which have been shown to cause allergic reactions in leg ulcer patients and delay healing .....can you think what these are?

The schedule then listed the three causes, impregnated dressings, topical applications and topical antibiotics, and the researcher could tick each one which the district nurse mentioned, and then a score of one point would be accrued for each correct answer.

The duration of effect interview also sought to ascertain whether the clinical information pack was still in use by the district nurse, and, as it had been suggested that feedback can reinforce practice changes (Mugford 1991, Stocking 1992), to use the interview as an opportunity to give district nurses individual feedback of their scores (See Appendix VI - Duration of Effect Schedule).

### **3.5.7. Scoring Framework**

All the definitions of clinical terms used in the study related to the clinical information pack, and were relevant only to this research. The scoring system was derived from the 62 items of practice related information in the clinical information pack and each point of clinical information accrued a score of one point, giving a maximum possible score of 62 points. The scoring system was applied to both pre and post-test questionnaires and duration of effect schedules. In this way a direct comparison of district nurses' scores at each stage of the study could be made.

Each definition in the scoring framework was constructed through consideration of the many different ways the 12 district nurses participating in the development of the clinical information pack and the piloting of the study instruments had expressed the same clinical concepts. Using the framework of assessment, treatment and general knowledge used in the 19 practice related questions the researcher compiled a list of all the words and phrases which had been used by district nurses in the different stages of the pilot studies to describe their clinical practice in relation to leg ulcer management.

Eight district nurses, who had not been involved in previous stages of the pilot studies and who were working outside the study site, were then given an abbreviated list of the practice related questions and the researcher read

the words and phrases to each nurse. District nurses were then asked to associate each word or phrase with one or more of the points of clinical information in the practice related questions. In this way all the expressions used by practitioners were assigned to either one or more of the practice areas, as deemed appropriate by district nurses.

By using this strategy to generate the "correct" answers in the scoring framework, allowances were made for the fact that some nurses were able to express themselves easily in writing, whilst others found writing accounts of their practice quite difficult. The definitions of "correct" responses also acknowledged the fact that differences in local idiom can make substantial differences in meaning and interpretation. To this end the range of "correct" answers to each of the practice related questions was very broad, and each definition contained a list of words, phrases and expressions which had already been used by district nurses to describe this aspect of their practice.

For example, Question 2.1 (a) of the practice related questions was seeking information about whether the nurse recorded a patient's "personal details" on the assessment visit. Included in the definition of the answer "personal details" were any references to the patient's age, sex, family history, occupational history, personal history or factors which predisposed the patient to leg ulceration.

Within the context of the study, this scoring device allowed the broadest possible interpretation within a definition, and facilitated the highest possible scoring by district nurses in the study. However, the weakness of this approach was its inability to discriminate fine detail in the district nurses answers. There was no facility in the instrument for giving a higher score for greater detail. The scoring framework did not permit differentiation between a respondent who gave an answer which included all the above factors, and one who gave a one word answer.

The 62 points of practice information sought by the instruments were not distributed equally throughout the practice related questions. Some questions were seeking to elicit one or two items of information, and others five or more. The pre and post-test questionnaires were comprehensive in scope, and consistent with the principle of facilitating the maximum possible score, within each subsection of the questionnaire a correct item of information was scored, regardless of where it appeared. It was the marker's responsibility to score the point in the appropriate coding box. This allowed for differences in the way district nurses organised and documented their practice behaviours.

The pre and post test questionnaires were printed with a coding margin to facilitate data reduction. On each of the practice related questions 8 coding boxes were printed, irrespective of the number of items of information being

sought by the question. This was to avoid leading study participants to an 'expected' number of responses to the different questions.

On the duration of effect schedule, which was completed by the researcher, the coded boxes were marked directly according to the district nurses verbal response to the questions asked.

The instructions for coding indicated which of the boxes were to be left blank by the marker (See Appendix VII - Scoring Instructions, Codes and Definitions).

### **3.6. Main Study - District Nurses**

#### **3.6.1. Population and Inclusion Criteria**

The research was carried out in Mersey Regional Health Authority<sup>4</sup>. The study population included all qualified district nurses, employed at grade "G" and above who were working in 27 different localities in 5 health authorities in the region.<sup>5</sup>

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<sup>4</sup> Now part of the North West Regional Health Authority, but a separate health region at the time of the study.

<sup>5</sup> In order to maintain anonymity for study participants the term "Health Authority" is used for all locations where data were collected. These areas in fact included one 1st, one 2nd and one 3rd Wave Community Trust, an unsuccessful Trust application and a Directly Managed Unit.

For the purpose of the research it was necessary that nurses who participated in the study were involved in the assessment, treatment and planning of care for the designated patient group, and as previous work had shown that district nurses employed at grades below "G" did not usually have any responsibility for assessment or clinical treatment decisions, all district nurses below this grade were excluded from the sample.

This gave a total study population of 222 district nurses eligible for inclusion in the study.

### **3.6.2. Calculating the Sample Size**

Calculation of an appropriate sample size is facilitated through power analysis (Lwanga & Lemeshow 1991), which in turn is dependant on the researcher making an estimate of the expected size of the effect of an intervention (Polgar & Thomas 1991). In making the estimate in this study the factors to be considered were that the care of leg ulcers was a common aspect of district nursing practice (NHSME 1992, Cullum 1993), and that the compilation of the clinical information pack had revealed 62 items of practice related information which were accessible to district nurses. The fact that not all district nurses would find it easy to write about their clinical practices also had to be considered.



In this context it was estimated that at pre-test the district nurses would score at least 50% correct, a mean score of 31 points. It was also expected that as the clinical information pack was practice oriented it had the potential to improve the district nurses' scores by at least 15%, raising the mean score to 40 points. In order to detect this a one sided test, with 80% power and significant at the 5% level, would require a sample size of 134 district nurses (Lwanga & Lemeshow 1991).

As the total district nurse population in the 5 participating health authorities was greater than this number all eligible district nurses in one study site, then another one, then a further one, were recruited until a sufficient number of district nurses had been sampled. This procedure gave a sample size of 146 district nurses and meant that 3 health authorities were included in the experimental group.

The district nurses in the remaining 2 health authorities were then recruited to the control group to help determine whether pre-testing had any interactive effects. This yielded a further sample of 25 district nurses, which though considerably smaller than the experimental group was thought to be sufficient to give a reasonably precise estimate. This in fact was demonstrated to be the case with the differences in the control group's pre to post-test mean scores falling within the range of the 95% confidence interval (Difference = 0.43; 95% CI = 0.30, 0.56).

The total sample size was therefore 171 district nurses.

### **3.6.3. Allocation to Treatment and Control Conditions**

Ideally the test of the relationship between the disseminated clinical research findings and district nurses' knowledge and reported practice would have utilised a random sample of district nurses who were subsequently randomly assigned to treatment and control conditions (Campbell & Stanley 1966, Judd et al 1991).

However, the reality of the way district nurses work would have meant that with random sampling and assignment there would have been no way to ensure that district nurses in the control group were not exposed to the clinical research findings. It is feasible that a district nurse in receipt of the clinical information pack would loan it to a friend or colleague who did not have one, thereby contaminating the post-test scores of the district nurse in the control group.

In these circumstances district nurses were allocated to study groups on the basis of geographical convenience and the need for a minimum sample size of 134 district nurses. The allocation technique resulted in 85% of the district nurses in the study being included in the experimental group and 15% in the control group.

#### **3.6.4. Negotiating Access**

Access to the 5 study localities was negotiated with senior health authority managers by the researcher and research supervisor. Once the initial contact had been made and access granted the researcher then contacted individual service managers and visited each one to arrange the logistics of data collection from the district nurses.

Managers were advised that the study wished to sample all 'G' and 'H' grade district nurses, and that if a suitable venue could be found within the locality the researcher would provide a sandwich lunch to any district nurses willing to participate. Suitable dates and locations for both pre and post-test data collection were suggested by each manager and in order to ensure that the maximum numbers of potential respondents were able to participate, the manager also advised how many lunchtime meetings would be necessary in each locality. An information notice about the study was prepared for each locality by the researcher and was then circulated to all eligible district nurses by their manager.

Three days before the arranged pre and post-test data collection meetings the manager was telephoned to estimate how many lunches would need to be prepared, and was also asked to remind district nurses about attendance at the study.

### **3.6.5. Management of Data Collection**

The data collection for the main study coincided with what could only be described as a major upheaval in the organisation of nursing services in the community. Consequently, a great deal of effort was expended on gaining the confidence of all study participants and handling the management of data collection sensitively.

All pre and post-test questionnaire data were collected at health centres or clinics in each of the participating localities. Data collection took place over a total of 37 lunchtime meetings.

### **3.6.6. Recruitment to the Study**

At the start of each lunchtime meeting the purpose of the study was explained to the group by the researcher, and the voluntary nature of participation was stressed. District nurses in the experimental group were advised that they were assisting in the evaluation of the clinical information pack, and that the research was not seeking to make any judgements about their care of patients with leg ulcers. It was also pointed out that participation in the study would require the completion of 2 questionnaires.

District nurses in the control group were similarly advised of the nature of the study and also informed that they were acting as a control. These

district nurses were told that they would be asked to complete both questionnaires before the clinical information packs were distributed to them.

All potential respondents, in both the experimental and control groups, subsequently agreed to participate in the study and the majority of the district nurses also returned to complete the post-test.

All district nurses who participated in the study were asked to make a note of the 'Personal Number' on the front of the pre-test questionnaires, and use it to identify themselves throughout the study. This device assured the district nurses anonymity, but at the same time made it possible for the researcher to match pre and post-test data. It also enabled the researcher to record which questionnaires had been distributed in each locality, so that any district nurses who 'forgot' their number only needed to be matched within a limited range.

### **3.6.7. Questionnaire Distribution**

On the basis of previous work with district nurses and the experience gained in the pilot studies, it was assumed that by adopting the strategies deployed by "Drug Reps", the district nurses' interest and participation in the study would be maximised. In addition, as the return rates for postal and individual questionnaires are notoriously poor (Oppenheim 1966), the strategy of group

questionnaire distribution was adopted in order to ensure a high response and completion rate.

The pre and post-test questionnaires were distributed to groups of district nurses, the smallest group being 2 and the largest 16 nurses. Group questionnaire distribution could have allowed the district nurses to collude in completing the questionnaire (Judd et al 1991). However, through close observation of the groups while they were completing the questionnaires it was possible for the researcher to interrupt any apparent collaboration by asking the district nurses if they were having any difficulties with the questions, or alternatively by offering them more sandwiches or tea. In this way it was possible for the researcher to exercise some control over the data collection meetings.

Post test data were collected six weeks after the pre-test. This period was long enough for the district nurses to have used the information pack and to have had the opportunity to implement some of the practice recommendations. It was also a sufficiently short time for maintaining the district nurses' interest in the study, and encouraging them to return for the post test.

All pre and post-test questionnaires were distributed, completed and collected over the course of the lunchtime meetings, with the researcher present throughout.

### **3.6.8. Duration of Effect Testing**

A total of 76 district nurses offered to participate in further interviews by providing their name and a contact number on the pre and post-test questionnaires.

Unfortunately it was not possible to conduct the duration of effect testing as planned. When volunteers were approached by the researcher 6 months after the post-tests had been completed, numerous practical difficulties became apparent.

In the first instance several appointments were made with individual district nurses, which many of them subsequently failed to keep. Other district nurses kept their appointments with the researcher but then said they were too busy to be interviewed, and others made the decision not to participate in the study any further when the nature of the duration of effect interview was explained to them.

Some of the remaining volunteers were then approached by telephone, and this proved to be a very unsatisfactory strategy. It was found that if district nurses were contacted first thing in the morning they were, naturally enough, preoccupied with the day's work. If contacted in the middle of the day they were most often having their lunch or catching up with

administrative duties, and at the end of the day they were anxious to go off duty.

After contacting a total of 29 of the 76 district nurse volunteers and failing to collect any duration of effect data at all, it was deemed impractical to continue with this element of the study. It was acknowledged that dispensing with the duration of effect testing could limit the interpretation of study findings.

#### **3.6.9. Data Reduction and Analysis**

All questionnaire data collected at pre and post-test were coded, and the practice related questions scored, according to the criteria in the 'Scoring Instructions Codes and Definitions' (see Appendix VII). All reduced questionnaire data were then loaded into SPSSX-PC data files (Hedderson 1991). 171 pre-test questionnaires and 130 post-test questionnaires were entered into the analysis.

Frequency analysis of demographic variables was made to facilitate description of the sample and their clinical practices.

To test the effect of the clinical information pack on the experimental group, changes in district nurses' scores were examined for differences in means,



significant at the 0.05 level, using paired 'T' tests. Analysis of variance and independent 'T' tests were also used to calculate the effects of personal characteristics and intervening variables on district nurses' scores (Hicks 1990, Campbell & Machin 1990). Differences in mean scores between and within the groups were estimated using independent 'T' tests. Where significant differences in mean scores were found confidence intervals at the 95% level were also calculated (Gardner & Altman 1989). Details of statistical tests used in the analysis can be found in Appendix VIII (Statistical Appendix). The acceptability of the pack to practitioners was assessed through frequency analysis of coded responses, and content analysis of open ended question responses.

#### **3.6.10. Reliability of Scoring Framework**

Although the definitions of the scores had been generated and tested by district nurses, a sub-sample of completed pre and post-test questionnaires were also coded by three independent markers using the scoring framework devised for the study<sup>6</sup>.

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<sup>6</sup> These individuals all worked outside the study location and included a nurse manager of a hospital, a community nurse manager and a nurse tutor. All were known to the researcher, and were approached initially because of their stated interest in furthering research in nursing. All willingly agreed to second mark the completed data sets, and were given copies of randomly selected unmarked questionnaires and the coding instructions. No discussion about the study was entered into until the marked questionnaires were collected by the researcher.

Each individual marker coded all the practice related questions in a randomly selected 10% (N = 17) sample of the completed pretest questionnaires, and a 10.8% (N = 14) sample of post-tests. 30.8% (N = 93) of the questionnaires were therefore scored by the researcher and one other person.

The total number of items to be scored on these 93 questionnaires was 5766, and the scores of all 4 markers showed 94.4% agreement. In addition, as the mean pre-test score only represented a 41% correct response then this high level of agreement suggested that the scoring framework was both comprehensive and reliable.

#### **3.6.11. Feedback of Study Findings**

Feedback meetings were held approximately 9 months after post-tests, and one was organised for each of the 5 participating authorities. Meetings were publicised by service managers, and held in accommodation provided by the health authority, although on these occasions no lunches were provided by the researcher.

An individualised set of results was prepared for each of the five authorities and was presented in such a way that the authority could identify itself and compare their results to all the other participating authorities, who remained anonymous. Feedback reports were prepared as a series of overhead projector slides and as a booklet which was distributed to the locality. Each

set of results contained information relating to the district nurses' clinical caseloads and practices, the context in which care was delivered, the effect of the Clinical Information Pack and the acceptability of the pack to practitioners. Results were presented by the research supervisor with the researcher present. A total of 79 nurses and 8 managers in the five study authorities attended the feedback meetings.

## **PART TWO - THE SERVICE MANAGERS**

### **3.7. Development of Interview Schedules & Pilot Studies**

The main purpose of the second part of the study was an exploratory one, and the development of the instruments was informed by the literature which suggested that organisational systems can be understood through analysis of their structures and processes (Dawson 1986, Handy 1988).

#### **3.7.1. Semi-Structured Interview Schedules**

The semi-structured interview schedule was developed and piloted with 3 nurse managers outside the region where the main study was conducted.

In the first instance the managers participating in the pilot work were asked to describe their jobs and the organisation they worked in. Notes were taken by the researcher and then used in conjunction with the literature (Dawson 1986, Bryman 1989, Huczynski & Buchanan 1991) to derive questions related to organisational structures and processes.

The structural questions related to 'facts' about a manager's personal and professional background and factual information about the organisation. For example managers were asked about their budgets, the size of the population served by the district nursing service, the number of clinics or

health centres which the manager was responsible for and the number of district nurses who were accountable to the manager.

The questions concerned with the processes operating within the organisation were framed with a particular emphasis on the manager's actual and perceived responsibilities for district nursing. These questions were expressed in terms of how the manager communicated with district nurses and how they monitored the performance of the district nursing staff.

Another question solicited the manager's opinion about any extrinsic or political factors which they believed were having an effect on the dynamics of the organisation, such as skill mix studies, or implementation of the NHS reforms.

Once the questions had been ordered, and appropriate prompts for the researchers use had been devised, the schedule was arranged into four sections.

Each of the 4 sections of the schedule was subdivided. The 'professional' questions were in 5 subsections; the manager's career history, their responsibilities, their own description of their role, the nature of any training they had had and the way in which they kept themselves up to date. The 'organisational structure' question had 2 subsections; facts and figures about the community health locality and the lines of authority and reporting

within the organisation. The 'organisational processes' had 3 subsections; communication networks between district nurses and managers, the monitoring of district nursing work and training and development for district nurses. The 'extrinsic factors' subsection was only relevant if the manager themselves identified a particular factor which they believed was affecting the organisation. Prompts were constructed for each subsection to ensure appropriate and comparable information was collected. So for example in the question about organisational structure the researcher asked;

What about the organisational structure and lines of reporting.....can you tell me about those?

Prompts;

- Diagram of Structure
- Who do you report to?
- Who do the district nurses report to?

The semi-structured interview schedule was then tested and refined on two more occasions with 2 of the 3 managers. The final draft of the interview schedule was piloted on the other nurse manager and allowed the researcher to become familiar with the questions and refine the interview technique.

The pilot studies showed that as the researcher had had past experience as a nurse manager it was useful to draw on this in establishing a rapport with the interviewees. Pilot work with the interview schedule also indicated that

although all areas of the schedule had to be covered, the order in which it was done was not particularly important. The areas of enquiry covered in the schedule were inter-related, which facilitated easy alteration in the ordering of questions in response to the needs of each interview situation. (See Appendix IX - Semi-structured Interview Schedule).

### **3.7.2. Recording the Interview Data**

During piloting of the final drafts of the semi-structured interview schedule, it was also found that discussion of issues relating to the organisation's structures and processes were seen by managerial informants to be quite sensitive, which had consequences for data collection in the main study.

At the time the pilot work and the main study were being carried out, the NHS was in the throes of implementation of the 1990 reforms. Consequently the whole ambience of the community health service was one of change and uncertainty, and it was perhaps not surprising that managers felt uncomfortable when asked to discuss the organisations in which they worked. None of the managers involved in the pilot studies were willing to express opinions which could be interpreted as being critical of the NHS reforms.

Several attempts were made to tape record the pilot interviews, but this consistently failed to yield good quality data. However, as soon as the tape

recorder was switched off, the nature and content of the interviews changed quite markedly and it was apparent that in order to collect useful organisational data from service managers it would not be possible to tape record the interviews.

Although interview data can be legitimately recorded through completion of a schedule, note taking or audio and video taping, it is methodologically more difficult to make concurrent and retrospective interview notes (Gilbert 1993). As with all data collection methods the recording technique used will have an influence on the quality of the data collected (Polit & Hungler 1993). Whereas audio and video tapes provide the most literal recording of an interview, the presence of recording devices can have an inhibitory effect on interviewees. Note taking can also be intrusive in the interview situation, and in addition much of the richness of the data can be lost in the process (Silverman 1993). However, data recording procedures have to be sensitive to both the context and the content of the interview, and in this study it was necessary to compile interview notes.

It was originally proposed that transcripts of interviews would be checked for accuracy by the managers themselves. However, piloting of this technique uncovered the same problems which had been associated with the attempts to tape record interviews, in terms of the perceived sensitivity of the information. Therefore, in order to ensure that the researchers



definitions of categories had construct validity, some of the main study data was also coded by another researcher.

### **3.7.3 Follow up Interview Schedules**

The follow up interviews with service managers were to return the findings from the survey of district nurses and to collect any additional data about the links between service managers, district nurses and research utilisation in clinical practice.

A very simple schedule was developed, which contained only three questions. These related to the what the manager had thought about their locality's participation in the study. Whether they were aware of any changes in practice in the management of patients with leg ulcers and what their opinion was of the district nurses' overall scores. As in the main interviews, notes were taken, but these were recorded directly onto the interview schedule. The follow up interview schedule was not piloted as it was designed to collect straightforward factual data, specific to the managers who had participated in the study (See Appendix X - Follow up Interview Schedules).

### **3.8. Main Study - Service Managers**

#### **3.8.1. Population & Inclusion Criteria**

The managerial population size was related to the numbers of localities in the five study sites and the way the different localities organised their management arrangements.

Inclusion criteria for managerial informants were that they had to have some direct contact with the district nursing workforce and also had to have operational responsibilities for care delivery in the locality. The population therefore included 32 service managers in post at the time of the study.

#### **3.8.2. Sample and Assignment**

As the study design required the organisational data to be related to the appropriate district nurses' scores the sampling and assignment of service managers was directly related to that of the district nurses. A sample of convenience of 22 eligible managers was taken, on the basis of potential respondents agreement to being interviewed and their ability to set aside sufficient time for the interview to be conducted.

The proportions of managers in the experimental and control groups were almost identical to the corresponding proportions of district nurses. The 19

managers associated with the experimental group constituted 86% of the sample, while the 3 in the control group made up the remaining 14%.

The important feature of the manager sample was that each of the study sites was represented by at least one of their managers which meant that insights could be gained into all the participating community health organisations.

### **3.8.3. Recruitment to the Study**

Managers were recruited to the study when arrangements were being made to collect data from district nurses. At the same time appointments for individual interviews with the managers were arranged. All managers were telephoned prior to the interview appointment to ensure that it was still convenient, and if not a new appointment was made. All managers who agreed to participate in the study were subsequently interviewed.

### **3.8.4. Management of Data Collection**

Interviews with managers were all conducted in offices at their places of work. The researcher commenced the interview by outlining the purpose of the study and asking the manager's permission to make notes, and in all cases this was given unconditionally.

All interviews opened with a general request for the manager to give some background to their own career, and how they had come to be in their present position. Once a discourse had been established between researcher and interviewee the 3 other subject areas on the semi-structured schedule were addressed in the order relevant to the direction of the discourse in each particular interview situation.

Abbreviated notes were taken during the interview and were written up in longhand, immediately after completion of the interview, in the researchers car. All interview notes were identified by an individual code number.

#### **3.8.5. Follow up Interviews**

Follow up interviews were conducted approximately 10 months after the start of data collection with 11 managerial informants. To complete the follow up interviews managers were telephoned to thank them for their part in facilitating the study, and if opportune, the researcher then asked the three questions on the follow up interview schedule. Notes were made on the schedule document.

Four of the managers were not available by telephone, so the researcher made a casual visit to their office taking a copy of the authority's summary of results. As the researcher had had an intermittent association with these people for over a year by this time, this technique was appropriate in the

circumstances. Data collected on these 4 casual visits was recorded retrospectively on the interview schedule.

### **3.8.6. Documentary Sources**

All managers who were interviewed were also asked to provide the researcher with any documents which might give further insights in their organisations. These were collected from all 5 of the participating authorities. Four of the documents were copies of applications for community trust status which had been submitted to the Minister of State for Health and the other was an annual business plan for the district nursing service.

However, attempts to gain organisational insights through these documents raised a methodological problem. An organisation's documents are rarely found to be neutral sources of information (Silverman 1993), and in the case of the trust applications it was immediately apparent that the documents all followed a formula strictly determined by the Department of Health. In this respect there was little to be gained from subjecting them to content analysis, as the frequency of occurrence of material in these texts would not be indicative of its' salience (Weber 1990, Silverman 1993). In view of this the health authorities' documentary sources were dispensed with as a source of additional organisational information.

### **3.8.7. Data Reduction and Analysis**

In the first phase of the content analysis the interview notes were read and re-read several times so the researcher could become familiar with the data. The notes were then cut and labelled and sorted into the 11 sub-categories of the semi-structured interview schedule which had been derived from the literature and pilot work. These covered the manager's employment history, role responsibilities, role perceptions, training, keeping up to date, facts and figures about the locality, organisational structures and reporting arrangements, communication networks, monitoring district nurses' work, training and development of district nurses and extrinsic factors.

The data in each sub-category was then scrutinised separately, and recurrent words and phrases were highlighted to identify themes within the data. So for example, in the sub-category relating to managers role perceptions, key words and phrases included "resource person" "helping" "looking after" "facilitator" "making things happen" "deputising" "administration" "making sure they're alright" "organising". All the words and phrases used by the various managers were then grouped within the 'manager's role perception' category and generated the descriptors 'manager as facilitator' and 'manager as supporter'.

The labelled texts were then sorted again so that it was possible to determine how the managers in the 5 different authorities perceived their

roles. The managers role perceptions, in each health authority, were then related to the district nurses' scores in that authority. This procedure was repeated, manually, for all the 11 sub-sections of the interview schedule, and for all the data collected at follow up interviews.

### **3.9. Summary of Method of Investigation**

This chapter has described the two part study designed to investigate whether it was possible for research findings to influence district nurses' knowledge and reported practice, and to explore the management of district nursing services and the effect the reformed NHS had on research utilisation by district nurses. A range of research techniques were employed in the study.

The study was carried out in 5 health authorities in one regional health authority, and out of a population of 222 eligible district nurses 171 participated in the research. A non randomised pre-test/post-test experimental design was adopted, which utilised a control group to assess the interactive effects of pre-testing.

Research information related to the care of patients with leg ulcers, which had been derived from a critical review of relevant research literature, was disseminated to district nurses by means of a Clinical Information Pack.

Data about district nurses' knowledge and reported practice in relation to leg ulcer management were collected on the study instruments and subsequently reduced to a score which was taken to represent the extent of research utilisation. The instruments and the scoring framework designed for use in the study facilitated the measurement of any changes in district nurses' scores, so allowing the effect of the disseminated research information to be estimated.

Changes in the nurses' scores within and between the study groups were examined for differences in means, using parametric statistical tests. The effects of individual variables on district nurses' scores were also estimated, as was the acceptability of the pack to practitioners. Findings from the descriptive analysis of questionnaire data were presented to participating health authorities approximately 9 months after data collection was completed.

In order to explore the organisational structures and management processes in the health authorities where the district nurses worked the second part of the study collected organisational data from service managers. Out of a population of 32 eligible managers 22 were interviewed.

The semi-structured interview schedule developed for the study facilitated the investigation of managers' career backgrounds, organisational structures and processes, and extrinsic factors influencing the dynamics of the



organisation. Eleven of the service managers were also re-interviewed approximately 10 months after data collection was complete, in order to see whether the study had had any long term effects on district nurses' clinical practices.

Interview data were subjected to content analysis, and the coded interview data were then related to the district nurses' scores in each participating authority.

The findings of both parts of the study are presented in the following chapter of this thesis.

**CHAPTER 4**  
**STUDY FINDINGS**

## **CHAPTER 4 - STUDY FINDINGS**

### **PART ONE - RESEARCH UTILISATION EXPERIMENT**

#### **4.1. Introduction**

The first part of this chapter presents the findings from analysis of the experimental data collected from district nurses. The purpose of the experiment was to test whether it was possible for research findings to influence district nurses' knowledge and reported practice.

The study design allowed for a measure of differences in individual district nurses' pre and post-test mean scores. In addition, measured differences between and within the experimental and control groups' mean scores could be compared.

All district nurses who attended data collection meetings subsequently participated in the study and after the pre test 171 completed questionnaires were entered into the data analysis, 146 of these from nurses in the experimental health authorities and 25 from nurses in the control authorities. At post test 130 completed questionnaires were analysed, 109 from the experimental group and 21 from the control group.

The findings presented in the first part of this chapter provide a profile of the district nurses themselves and of their clinical work in relation to patients with leg ulcers. They also show district nurses' mean scores, before the introduction of the experimental variable, and their scores after the intervention. The district nurses' evaluation of the method of disseminating research information are also presented.

#### **4.2. Response Rates and Missing Cases**

171 (77%) of the population of 222 eligible district nurses were sampled. 12 nurses sent apologies via their managers for not being able to attend the meetings and a further 6 took their questionnaires away with them and later returned them to the researcher by post. These 6 questionnaires were not included in the analysis. This meant that only 33 (15%) of the district nurse population could not be accounted for by the researcher. However, as nurse manpower planning models normally have a built in margin of 20% for days off, sickness, holidays and other leave (DHSS 1983b, Bagust, Prescott & Smith 1988), then a 15% level of non participation was perhaps to be expected. On this basis the sample of district nurses could be taken as representative.

The experimental group comprised 3 health authorities from which 146 district nurses participated in the pre-test and 130 in the post-test. The

control group included 2 health authorities, which supplied 25 district nurses to the pre-test and 21 to the post-test.

A total of 41 district nurses did not return for the post-test. Twenty six of these sent apologies directly to the researcher or furnished reasons for their non attendance, whilst only 15 nurses failed to return to the post-test with no reasons given.

Proportional attrition was similar for the two groups. The experimental group authorities supplied 85% of the pre-test sample and 84% of the post test. Whilst the control group authorities supplied 15% of the pre-test and 16% of the post-test sample (see Table 4.1).

**Table 4.1. District Nurse Sample Response Rates and Missing Cases**

	<b>Number in Experimental Group</b>	<b>Number in Control Group</b>	<b>Totals</b>
<b>Pre-test</b>	146	25	171
<b>Post-test</b>	109	21	130

### **4.3. Sample Characteristics**

#### **4.3.1. Personal & Professional Characteristics**

The sample characteristics described a population of experienced district nurses who were predominantly female, aged over 30 years old and working in full time posts. Women made up 97% (N = 166) of the sample and the remaining 3% (N = 5) were men. The great majority of the sample, 92% (N = 157), were employed in full time posts and 8% (N = 14) worked part time.

The majority of district nurses in the sample were over 30 years old, with the largest single group, (36%, N = 62) being in the 40 - 49 age range. 29% (N = 50) were aged between 30 - 39, 23% (N = 39) between 50 - 59 and 10% (N = 17) were aged under 30 years. 1 (0.7%) respondent was over 60 years old and 2 (1.3%) declined to state their age group.

All nurses participating in the study had a Registered General Nurse (RGN) and District Nurse (DN) certificate, and some also had other professional qualifications. 17% (N = 29) of the sample were Practical Work Teachers (PWT)<sup>7</sup>, and 29% (N = 49) had a post registration English National Board

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<sup>7</sup> The designation "Practical Work Teacher" was changed in 1991 to "Community Practice Teacher". However, as data collection was carried out in late 1991 to mid 1992, the new title was not in common use amongst district nurses involved in this study. Therefore, where it is necessary to refer to the designation in this thesis, the term Practical Work Teacher is used.

(ENB) qualification. Of the district nurses in this sample 2% (N=4) had a university degree. A total of 18% (N=31) of nurses also recorded "other" qualifications, and these included Registered Sick Children's Nurses (RSCN) and State Certified Midwives (SCM), a Diploma in Nursing and one Registered Health Visitor (RHV) certificate.

Slightly less than half the sample (42%, N=72) had trained under the 'old' district nursing curriculum, and the remainder (58%, N=99) had qualified as district nurses after the introduction of the new syllabus in 1982<sup>8</sup>.

The largest single proportion of the sample, 41% (N=69), had worked as district nurses for between 11 and 20 years. 32% (N=55) had worked between 1 and 5 years and 21% (N=36) had practised as district nurses for between 6 and 10 years. 5% (N=9) of nurses had been working on the district for more than 20 years and just 1% (N=2) had less than 1 years experience.

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<sup>8</sup> In 1976 the Panel of Assessors for District Nurse Training reported on the need for a new curriculum, which was subsequently designed and then implemented in 1981. The new training course had a larger theoretical component and was longer than the previous course. The new curriculum aimed to develop the high level knowledge and skill which district nurses need in order to make an expert contribution to the primary health care team (Mackenzie 1989). In the same year, 1981, a district nurse qualification became mandatory for practice.

### 4.3.2. Caseload Characteristics

The number of patients the district nurses reported treating for leg ulcers at the time of the study ranged from 0 - 25, with an average of 7 patients per nurse. At the two extremes of this range 3% (N = 5) of district nurses did not have any patients with leg ulcers and 8% (N = 14) reported having more than 20 in this patient group. The whole sample of 171 district nurses gave an estimated total of 1115 patients being treated for leg ulcers at the time of the study. The aetiology of these patients' ulcers is illustrated in Table 4.2. alongside the national prevalence figures.

Table 4.2. Aetiology and Prevalence of Leg Ulcers Relative to National Prevalence Rates

Type of Ulcer	No. of Ulcers	% of Total	National Prevalence *
Venous	655	59%	70%
Arterial	138	12%	8-10%
Mixed	111	10%	10%
Diabetic	78	7%	5%
Rheumatoid	56	5%	5%
Unknown Origin	77	7%	1%
Totals	1115	100%	100%

\* [Callum et al 1987; Cherry et al 1991]



### 4.3.3. Clinical Information & Expertise

The availability of clinical expertise, in relation to leg ulcer management, was variable. Frequency analysis showed over half the sample, 57% (N=97), reporting having no "expert" in their health authority, whilst other district nurses had access to more than one source of expertise. The sources of clinical expertise available to district nurses are illustrated in Table 4.3.

Table 4.3. Available Sources of Expertise (Multiple Response Question)

Source of Expertise	Whole Sample (N = 171)
No Expert Available	97 (57%)
Company Rep	46 (27%)
Hospital Consultant	41 (24%)
Own 'Special' Interest	39 (23%)
Leg Ulcer Clinic	38 (22%)
Nurse Colleague	25 (15%)
GP with Special Interest	5 (3%)
Specialist Ulcer Nurse	1 (0.6%)

The pattern of clinical updating over the 12 months prior to the study was similar in all 5 study locations. All respondents reported having read some information about leg ulcers in the past year. Analysis of the multiple response question showed 92% (N=158) of district nurses sampled had read articles in journals and 90% (N=154) had read material supplied by drug company representatives. A relatively small proportion, 18% (N=31),

reported having read books, and 12% (N = 21) had read other material, the nature of which was not specified.

In so far as attending courses or study days, some nurses had been able to take advantage of more than one study opportunity, but 35% of the sample (N = 60) had not attended any courses or study days related to leg ulcer management in the 12 months prior to the study. The largest single proportion of the sample, 53% (N = 90), had attended demonstrations organised by drug companies. 16% (N = 28) of respondents had visited specialist leg ulcer clinics and 12% (N = 21) had attended study days organised within their employing authority. Only a small proportion of these district nurses, 6% (N = 11), had been on study days or courses at recognised educational institutions.

#### **4.3.4. Constraints on Clinical Practice**

All except one of the district nurses identified at least one factor which they felt constrained their clinical practice in relation to the care of patients with leg ulcers. A very large proportion, 82% (N = 141), of district nurses found a lack of patient compliance to be a major constraint in the care of this patient group. This and all other factors identified as constraining nurses' practice are illustrated in Table 4.4.

**Table 4.4. Constraints on District Nurses' Practice (Multiple Response Question)**

<b>Constraint</b>	<b>No. of Respondents</b>	<b>%</b>
<b>Patient Non-compliance</b>	<b>N = 141</b>	<b>82</b>
<b>Patients' Lifestyle</b>	<b>N = 127</b>	<b>74</b>
<b>Understaffing</b>	<b>N = 75</b>	<b>44</b>
<b>Consultant's Instructions</b>	<b>N = 70</b>	<b>41</b>
<b>Unable to Get Preferred Products</b>	<b>N = 59</b>	<b>35</b>
<b>Caseload too Big</b>	<b>N = 35</b>	<b>20</b>
<b>Too Few Resources</b>	<b>N = 35</b>	<b>20</b>
<b>Unable to Get Supplies</b>	<b>N = 35</b>	<b>20</b>
<b>Lack of Available Information</b>	<b>N = 28</b>	<b>16</b>
<b>Lack of Experience in Leg Ulcer Care</b>	<b>N = 26</b>	<b>15</b>
<b>Pressures From GPs</b>	<b>N = 12</b>	<b>7</b>
<b>Pressures From Nurse Managers</b>	<b>N = 12</b>	<b>7</b>
<b>None of These</b>	<b>N = 1</b>	<b>0.6</b>

#### **4.4. Pre-test Scores**

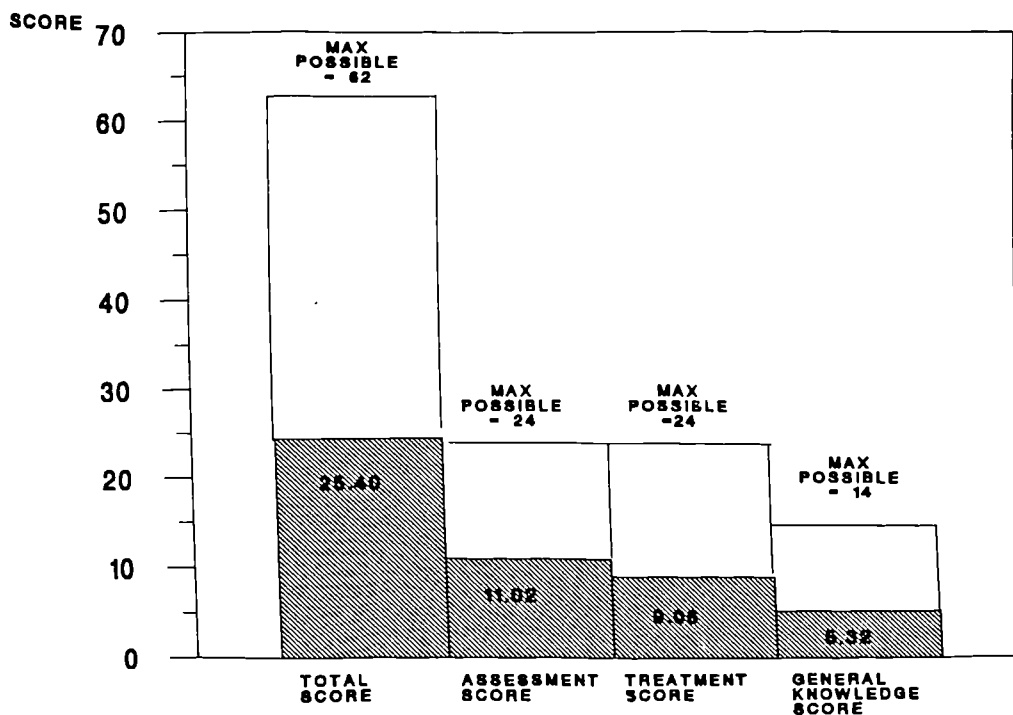
##### **4.4.1. Sample Mean Scores**

On the instrument used at pre-test the maximum possible score a nurse could achieve was a summary total of 62 points and each point was related to one item of clinical information in the pack. This total was made up of a potential maximum score for the "Assessment" section of 24 points, a

potential score for the "Treatment" section of 24 points and a potential maximum for "General Knowledge" of 14 points.

Of this possible score of 62 points the mean pre-test score for all subjects was 25.40 (SD = 5.34, Range 13-39). Broken down to reflect the different dimensions of the instrument the mean 'Assessment' score was 11.02 (SD = 2.99, Range = 3-19). The mean 'Treatment' score was 9.06 (SD = 2.50, Range = 3-16) and mean 'General Knowledge' score was 5.32 (SD = 1.67, Range = 1-9).

Figure 4.1. Whole Sample Mean Pre-test Scores by Section of Questionnaire



#### 4.4.2. Between Group Differences in Mean Pre-test Scores

The mean pre-test score for respondents in the experimental group was 25.64 (SD = 5.44), and the control group mean score was 24.04 (SD = 4.53). Using the independent T-test the difference between the 2 groups mean pre-test scores was not found to be significant ('T' value = 1.39, Df = 169,  $p = 0.167$ ).

#### 4.4.3. Within Group Differences in Mean Pre-test Scores

A comparison of mean pre-test scores, standard deviation and range for all 5 study authorities, is presented in Table 4.5.

Table 4.5. District Nurses' Mean Pre-test Scores by Health Authority

Health Authority	No. of DNs	Mean Score	Standard Deviation	Minimum Score	Maximum Score
HA1	35	23.54	4.57	15	31
HA2	40	28.23	5.36	20	39
HA3	71	25.21	5.38	13	38
HA4	12	23.17	5.64	15	34
HA5	13	24.85	3.24	20	30

Although no significant differences were found between pre-test scores of the experimental and control groups, one individual authority's score (HA2)

was found to be significantly different from the other authorities making up the experimental group.

The difference in mean scores between HA1 and HA2 of 4.68 was found to be significant ( $T' = -4.04$ ,  $Df = 73$ ,  $p = 0.000$ , 95% CI = 4.52, 4.84).

So too was the difference in mean scores between HA2 and HA3 ( $d = 3.01$ ,  $T' = 2.84$ ,  $Df = 109$ ,  $p = 0.005$ , 95% CI = 2.59, 3.43).

However, no significant differences were found between the mean scores of HA1 (23.54) and HA3 (25.21) ( $T' = -1.57$ ,  $Df = 104$ ,  $p = 0.119$ ).

In the control group, no significant differences between the scores of HA4 (23.17) and HA5 (24.85) were found ( $T' = -0.92$ ,  $Df = 23$ ,  $p = 0.366$ ).

However, despite there being no significant differences between the experimental and control group, the mean pre-test score of the experimental group's 'different' authority (HA2) was also found to be significantly different from the scores of both authorities in the control group. The difference of 5.05 points in the mean scores of HA2 and HA4, computes  $T' = 2.84$ ,  $Df = 50$ ,  $p = 0.007$ , 95% CI = 4.27, 5.83. Similarly, the difference in means of 3.37 between HA2 and HA5 computes  $T' = 2.14$ ,  $Df = 51$ ,  $p = 0.037$ , 95% CI = 3.27, 3.45.

#### **4.5. Effects of Sample Characteristics on Pre-test Scores**

Although no significant differences were found between the pre-test scores of the experimental and control groups the finding that HA2 had a significantly higher score than all the other authorities may have been indicative of factors which could influence research utilisation. Therefore, the effects of all individual and caseload variables on district nurses' pre-test scores were also tested.

##### **4.5.1. Personal & Professional Characteristics**

Although data on the district nurses' actual age was not collected, analysis of the effect of age group on pre-test score showed significant differences in means for district nurses aged between 20 - 29 and all other district nurses (see Table 4.6).

**Table 4.6. Effect of District Nurses' Age Group on Mean Pre-test Score (20-29 years)**

<b>Mean Score 20-29 Yrs</b>	<b>Mean Score All others</b>	<b>Difference in Means</b>	<b>'T' Value</b>	<b>Degrees of Freedom</b>	<b>'P' Value</b>	<b>95% Confidence Interval</b>
28.65	25.08	3.57	2.68	169	0.008	2.47, 4.67

In the experimental group district nurses in this age range were distributed throughout HA2 and HA3, but analysis of variance showed no significant differences attributable to this factor ( $F = 2.24$ ,  $Df = 1$ ,  $p = 0.148$ ).

District nurses in the age group 30 -39 were also found to have a significantly higher mean score than others (see Table 4.7).

**Table 4.7. Effect of District Nurses' Age Group on Mean Pre-test Score (30 - 39 years)**

Mean Score 30-39 Yrs	Mean Score All others	Difference in Means	'T' Value	Degrees of Freedom	'P' Value	95% Confidence Interval
26.73	24.91	1.82	2.05	169	0.042	1.56, 2.08

District nurses in this age group were distributed throughout the experimental health authorities and analysis of variance showed no significant differences associated with this factor ( $F = 0.64$ ,  $Df = 2$ ,  $p = 0.551$ ). Therefore, in terms of accounting for the significant difference of HA2's mean pre-test score the proportion of district nurses in the health authority within these age groups is unlikely to offer an explanation.

If a district nurse was a practical work teacher (PWT) she was likely to have a significantly lower pre-test score than nurses who were not. The difference in mean scores between practical work teachers and other district nurses was 2.69, which gave a 'T' value = -2.551  $Df = 169$ ,  $p = 0.013$ ,



95% CI = 2.14, 3.24. Within the experimental group the significantly different authority (HA2) had proportionally less PWT's (HA1 = 6, 17.1% PWT's; HA2 = 4, 10% PWT's; HA3 = 15, 21.1% PWT's), however, analysis of variance showed that this did not account for the difference in HA2's mean score ( $F = 1.34, Df = 2, p = 0.281$ ).

The effect of a district nurse holding an ENB certificate was not found to be related to mean scores (see Table 4.8).

**Table 4.8. Effect of ENB Certificate on District Nurses' Mean Pre-test Score**

Mean Score with ENB Cert.	Mean Score All others	Difference in Means	'T' Value	Degrees of Freedom	'P' Value
26.22	25.07	1.15	1.28	169	0.203

Whether or not a district nurse was a graduate was found to have an effect on mean pre-test scores. (see Table 4.9).

**Table 4.9. Effect of University Degrees on District Nurses' Mean Pre-test Score**

Mean Score with Degree	Mean Score All others	Difference in Means	'T' Value	Degrees of Freedom	'P' Value	95% Confidence Interval
35.25	25.17	10.08	3.89	169	0.000	8.99, 11.17

It should be noted that in the whole sample the total number of district nurses with university degrees was only 4, and 3 of these were found in HA2. However analysis of variance showed that this factor did not account for the difference in HA2's overall mean score ( $F = 0.169$ ,  $Df = 1$ ,  $p = 0.720$ ).

Significant differences in mean pre-test scores were also found in relation to date of qualification as a district nurse. The mean score for those qualifying up to and including 1981 was 23.38, and for those qualifying since 1982 was 26.87. ( $d = 3.49$ ,  $'T' = -4.47$ ,  $Df = 169$ ,  $p = 0.000$ ,  $95\% \text{ CI} = 3.35, 3.63$ ). HA2 had a higher proportion of more recently qualified district nurses than the other 2 authorities (HA1 = 11.4%; HA2 = 65.0%; HA3 = 59.2%), and analysis of variance showed this proportional difference to be significant ( $F = 5.604$ ,  $Df = 2$ ,  $p = 0.005$ ).

The length of time a nurse had worked on the district also appeared to be related to pre-test scores, with those having had 1 - 5 years experience having a higher mean score than nurses who had spent longer as a district nurse (see Table 4.10).

**Table 4.10. Effect of Time Spent as a District Nurse on Mean Pre-test Score**

<b>Mean Score 1-5 Yrs on District</b>	<b>Mean Score All Others</b>	<b>Difference in Means</b>	<b>'T' Value</b>	<b>Degrees of Freedom</b>	<b>'P' Value</b>	<b>95% Confidence Interval</b>
27.76	24.36	3.40	4.07	169	0.000	3.13, 3.67

As far as accounting for the difference in HA2's mean score was concerned, this factor was not found to be significant ( $F = 0.236$ ,  $Df = 2$ ,  $p = 0.790$ ).

These findings suggest that in terms of the significant differences found within the experimental group, HA2's significantly higher mean pre-test score may be due to the authority having a younger and more recently qualified workforce, who have therefore spent less time working as district nurses. Logic would imply that these three variables are, in normal circumstances, related to each other. However, when these findings are considered in relation to the context of the organisations in which nurses work, then they raise the question as to why there should be proportionally more of the district nurses with these characteristics in the significantly higher scoring authority.

#### **4.5.2. Caseload Characteristics**

The number of patients with leg ulcers that a district nurse was caring for was not found to be related to pre-test scores. The mean pre-test scores for

groups of district nurses with different numbers of patients were compared with each other, and none were found to be significant. These findings are summarised in Table 4.11.

**Table 4.11. Summary Table of Effect of Number of Patients with Leg Ulcers on District Nurse's Mean Pre-test Score**

No. of Patients with Leg Ulcers	Mean Score DNs with	Mean Score All Others	Difference in Means	'T' Value	Degrees of Freedom	'P' Value
None	26.83	25.38	1.45	0.66	169	0.512
1-5	25.88	25.00	0.88	1.09	169	0.279
6-10	25.10	25.60	0.50	-0.58	169	0.562
11-15	26.80	25.39	1.41	0.58	169	0.560
16-20	23.07	25.66	2.59	-1.82	169	0.070
20+	26.00	25.42	0.58	0.19	169	0.852

#### 4.5.3. Clinical Information & Expertise

District nurses who expressed a "special" interest in the management of leg ulcers had a mean pre-test score of 27.07, and those who did not have a special interest had a mean score of 24.90. This difference in means of 2.17 was found to be significant ('T' = 2.26, Df = 169, p = 0.025, 95% CI = 1.55, 2.79). Although the proportions of district nurses expressing a "special" interest were similar in the experimental authorities (HA1 = 7, 20%; HA2 = 8, 20%; HA3 = 19, 26.8%), analysis of variance showed

these differences to be significant ( $F = 6.788$ ,  $Df = 2$ ,  $p = 0.003$ ). As HA3 had the highest proportion of district nurses reporting a special interest in leg ulcer care this finding is not likely to account for the difference found between HA2 and the other experimental authorities. However, as HA3 had the lowest mean score within the experimental group, it does suggest that had the authority had a smaller proportion of these nurses then the mean pre-test score in HA3 may have been even lower than the one recorded. None of the other identified sources of clinical expertise were found to have an effect on district nurses' mean scores. A summary of the 'T' statistic for these factors are presented in Table 4.12.

**Table 4.12. Summary of Effect of Sources of Expertise on District Nurses'**

**Mean Pre-test Score**

Source of Expertise	Mean Score with Access to Expertise	Mean Score All Others	Difference in Means	'T' Value	Degrees of Freedom	'P' Value
Company Rep	24.33	25.80	1.47	-1.61	169	0.109
Hospital Consultant	25.61	25.34	0.27	0.28	169	0.777
Leg Ulcer Clinic	26.03	25.23	0.80	0.81	169	0.416
Nurse Colleague	25.64	25.36	0.28	0.24	169	0.811
GP with Special Interest	27.60	25.34	2.26	0.93	169	0.532
Specialist Ulcer Nurse	26.00	25.40	0.60	No Variance	-	-

As all district nurses in the sample reported having read material about leg ulcers in the 12 months prior to the study there could be no variance in scores due to this factor alone. Neither were any differences found which were attributable to the type of material a district nurse had read. The mean scores and 'T' statistics for different types of reading material are illustrated in Table 4.13.

Table 4.13. Summary of Effect of Reading Materials on District Nurses' Mean Pre-test Score

Type of Reading Material	Mean Score Nurses Reading This Material	Mean Score All Others	Difference in Means	'T' Value	Degrees of Freedom	'P' Value
Books	26.74	25.11	1.63	1.55	169	0.123
Journal Articles	25.49	24.38	1.11	0.72	169	0.476
Material From Drug Reps	25.49	24.59	0.90	0.66	169	0.508

Visiting specialist leg ulcer clinics was found to have an association with district nurses' pre-test scores. The mean score for nurses who had visited clinics was 28.46, and for those who had not was 24.80. The difference in means of 3.66 computes a 'T' value of 3.42, which with Df = 169, has  $p = 0.001$  and 95% CI = 3.00, 4.32. However, analysis of variance indicates that visiting specialist clinics was unlikely to account for the

differences found within the experimental group ( $F = 3.100$ ,  $Df = 2$ ,  $p = 0.090$ ).

A district nurse's attendance at study days or drug company product demonstrations were not found to influence their pre-test score. These scores and the associated 'T' statistics are presented in Table 4.14.

**Table 4.14. Summary of Effect of Study Days on District Nurses' Mean Pre-test Score**

Type of Study Day	Mean Score of Nurses Attending	Mean Score All Others	Difference in Means	'T' Value	Degrees of Freedom	'P' Value
None	24.67	25.80	1.13	-1.33	169	0.185
H.A. Study Day	25.76	25.35	0.41	0.33	169	0.744
Drug Company Demonstrations	25.60	25.18	0.42	0.51	169	0.613
College/ University Study Days	27.36	25.27	2.09	1.26	169	0.209

#### 4.5.4. Constraints on Practice

District nurses who felt constrained in their practice by a lack of resources were found to have a significantly higher score than other nurses in the sample. The group constrained by lack of resources had a mean score of 27.08, and the group of all other district nurses had a mean score of 24.97.

The difference of 2.11 in means computes a 'T' value of 2.11, with Df = 169,  $p = 0.036$ , 95% CI = 1.47, 2.75. Analysis of variance showed that within the experimental group this factor accounted for some of the difference between the authorities ( $F = 6.923$ , Df = 2,  $p = 0.003$ ).

Similarly, district nurses who reported feeling constrained by being unable to use their preferred products had a significantly higher score than other district nurses ( $d = 1.87$ ; 'T' = 2.20, Df = 169,  $p = 0.029$ , 95% CI = 1.53, 2.21). Analysis of variance also showed this difference to be significant within the experimental group ( $F = 8.428$ , Df = 2,  $p = 0.0007$ ).

These findings were perhaps to be expected as a district nurse who reported feeling constrained by lack of resources or preferred products would mean that they therefore had a knowledge of other things which could be used in the care of patients with leg ulcers.

None of the other constraints on clinical practice were found to have an effect on district nurses' pre-test scores and these mean scores and associated 'T' statistics are presented in Table 4.15.



Table 4.15. Summary of Effects of Constraints on Practice on District Nurses' Mean Pre-test Score

<b>Constraint on Practice</b>	<b>Mean Score With Constraint</b>	<b>Mean Score All Others</b>	<b>Difference in Means</b>	<b>'T' Value</b>	<b>Degrees of Freedom</b>	<b>'P' Value</b>
<b>Patient Non-compliance</b>	25.73	23.87	1.86	1.75	169	0.082
<b>Patient's Lifestyle</b>	25.14	26.16	1.02	-1.09	169	0.277
<b>Under Staffing</b>	25.07	25.67	0.60	-0.73	169	0.467
<b>Consultants Instructions</b>	26.03	24.97	1.06	1.28	169	0.203
<b>Caseload Size</b>	24.79	25.55	0.76	-0.74	169	0.459
<b>Lack of Supplies</b>	26.68	25.07	1.61	1.60	169	0.111
<b>Lack of Information</b>	25.61	25.36	0.25	0.22	169	0.826
<b>Lack of Experience</b>	25.77	25.34	0.43	0.38	169	0.706
<b>Manager Pressures</b>	24.50	25.47	0.97	-0.61	169	0.545

#### 4.6. Post-Test Scores

The effect of the experimental variable, the clinical information pack, was measured through changes in intra-subject and inter-group mean scores. Differences in individual district nurses' scores, from pre to post-test measures, were tested using the paired 'T' test. Differences in mean post test scores between the experimental and control groups were tested using

the 'T' test for independent samples (See Appendix VIII). 130 completed post-test questionnaires were entered into the analysis.

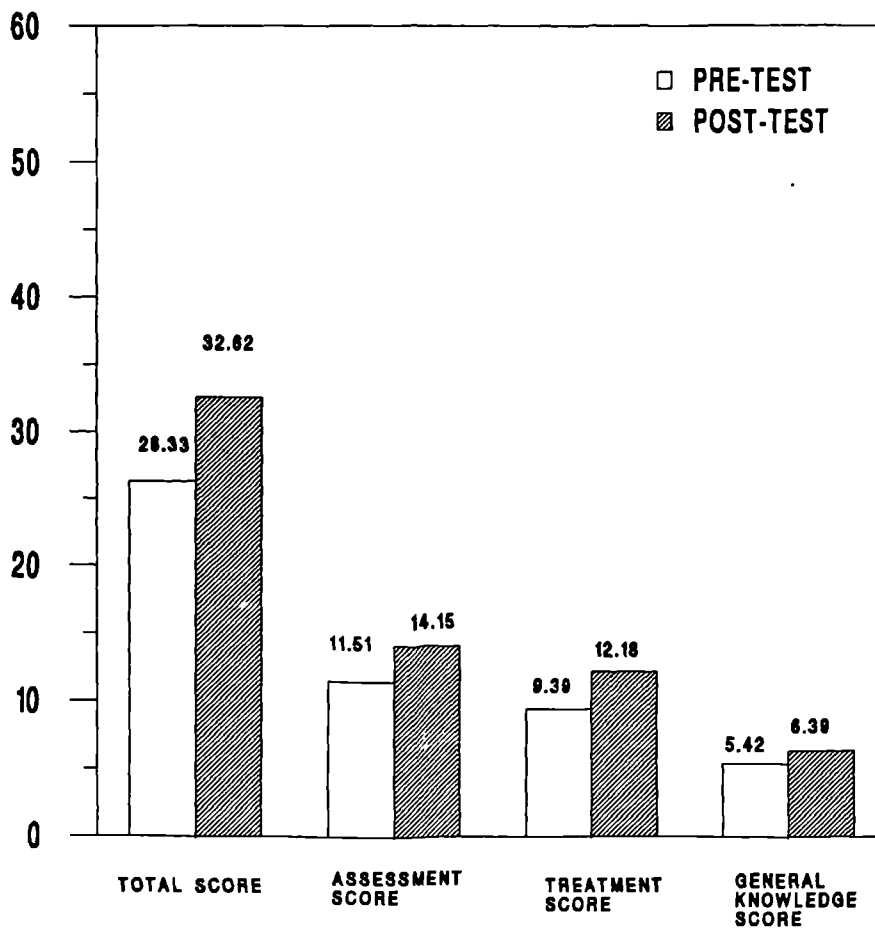
The pre-test scores of 41 district nurses who did not return to complete the post test had to be excluded from the comparative analysis. This meant that the group mean pre-test scores changed slightly. In this section of the chapter all pre-test figures presented are the corrected scores which account for non returners.

As in the pre-test, the maximum achievable score at post-test was 62. This also comprised an "Assessment" total of 24, a "Treatment" total of 24 and a "General Knowledge" total of 14 points.

#### **4.6.1. Post-Test Scores - Experimental Group**

In the post-test measure the mean score for district nurses in the experimental group had increased from 26.33 to 32.62 (SD = 6.23, Range = 16-53). The scores had increased in all 3 dimensions of the instrument. The mean 'Assessment' score rose from 11.51 to 14.15 (SD = 3.06, Range = 5-22), the mean 'Treatment' score increased from 9.39 to 12.18 (SD = 3.41, Range = 4-22) and the mean 'General Knowledge' score rose from 5.42 to 6.50 (SD = 2.42, Range 0-12). These changes in the experimental group's pre to post-test mean scores are illustrated in Figure 4.2.

**Figure 4.2. Mean Pre and Post-test Scores (Experimental Group)**



Using the paired 'T' test the difference in the experimental group's pre and post-test mean scores of 6.29 was found to be significant ('T' = 10.54, Df = 108, p = 0.000, 95% CI = 6.03, 6.55).

The pre to post-test changes in scores in the experimental group were analysed for each of the three sections of the instrument and each one showed significant changes. These changes are summarised in Table 4.16.

**Table 4.16. Pre to Post-test Changes in District Nurses' Mean Scores  
(Experimental Group)**

Section of Instrument	Mean Pre-Test Score	Mean Post-Test Score	Difference in Means	'T' Value	Degrees of Freedom	'P' Value	95% Confidence Interval
Assessment	11.51	14.15	2.64	-8.97	169	0.082	2.12, 3.16
Treatment	9.39	12.18	2.79	-8.52	169	0.277	2.66, 2.92
General Knowledge	5.42	6.50	1.08	-4.66	169	0.467	0.38, 1.78
Total	26.33	32.62	6.29	-10.54	169	0.203	6.03, 6.55

#### 4.6.2. Within Group Differences - Experimental Group

The mean scores, across all dimensions of the pre and post-test instruments, were analysed for the individual authorities making up the experimental group. This analysis revealed significant differences in pre and post-test scores for all of the three authorities (HA1, HA2 and HA3).

In HA1 the corrected total score at pre-test was 24.10 and at post-test this had increased to 32.80. Using a paired 'T' test the difference of 8.70 points was demonstrated to be significant ('T' = -5.39, Df = 18, p = 0.000, 95% CI = 7.89, 9.51). In this authority significant differences were consistent across all dimensions of the instrument (see Table 4.17).

**Table 4.17. Pre to Post-test Changes in District Nurses' Mean Scores - HA1**

Section of Instrument	Mean Pre-Test Score	Mean Post-Test Score	Difference in Means	'T' Value	Degrees of Freedom	'P' Value	95% Confidence Interval
Assessment	10.47	14.74	4.27	-7.82	18	0.000	4.12, 4.42
Treatment	8.84	11.58	2.74	-3.41	18	0.003	2.52, 2.96
General Knowledge	4.79	7.00	2.21	-3.35	18	0.004	1.96, 2.46
Total	24.10	32.80	8.70	-5.39	18	0.000	7.89, 9.51

The difference in HA1 represented a 36.1% increase in score, which was the largest proportional increase of all three authorities in the experimental group. However, at post test this authority's score was not significantly different from the other 2 authorities in the group. (HA1 mean score = 32.80 and HA2 = 35.59; 'T' = -1.36, Df = 51, p = 0.180. HA1 mean score = 32.80 and HA3 = 30.77; 'T' = 0.92, Df = 73, p = 0.361).

The corrected pre-test mean score in HA2 was 28.26 and this rose to 35.59 at post-test. This difference of 7.33 is significant with 'T' = -8.05, and Df = 33, p = 0.000, 95% CI = 7.13, 7.59. The changes in scores in this health authority were also significant across all sections of the instrument (see Table 4.18).

**Table 4.18. Pre to Post-test Changes in District Nurses' Mean Scores - HA2**

<b>Section of Instrument</b>	<b>Mean Pre-Test Score</b>	<b>Mean Post-Test Score</b>	<b>Difference in Means</b>	<b>'T' Value</b>	<b>Degrees of Freedom</b>	<b>'P' Value</b>	<b>95% Confidence Interval</b>
<b>Assessment</b>	12.88	15.24	2.36	-4.70	33	0.000	1.86, 2.86
<b>Treatment</b>	9.79	13.62	3.83	-7.46	33	0.000	3.63, 4.03
<b>General Knowledge</b>	5.59	6.74	1.16	-3.42	33	0.002	1.04, 1.28
<b>Total</b>	28.26	35.59	7.33	-8.05	33	0.000	7.10, 7.56

In HA2 the mean scores at both pre and post-test were higher than those in the other two experimental health authorities, but the increase in score was proportionally less than that of HA1 with a gain of 25.94%.

HA3 had a mean pre-test score of 25.91 which increased to 30.77 at post-test. This change of 4.86 was also significant ('T' = -5.86, Df = 55, p = 0.000, 95% CI = 4.86, 5.28). In this authority the changes across all dimensions of the instrument were significant, but the change in mean 'General Knowledge' score was the least impressive with a probability estimate of p = 0.047 (see Table 4.19).

**Table 4.19. Pre to Post-test Changes in District Nurses' Mean Scores - HA3**

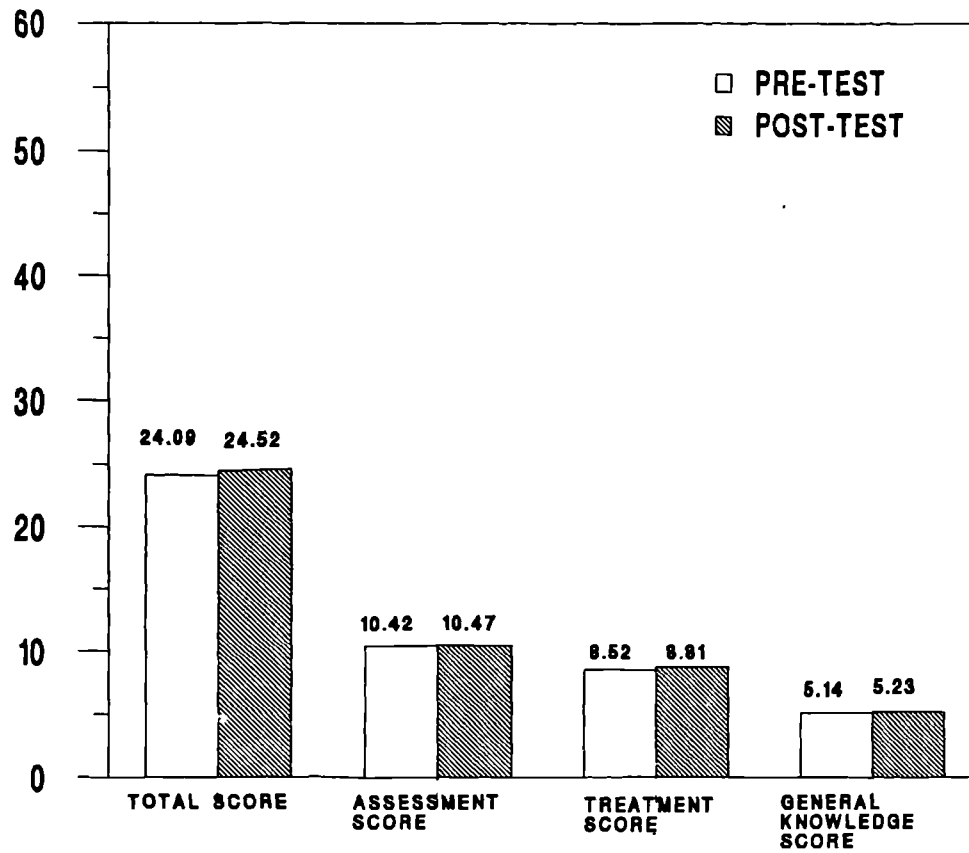
Section of Instrument	Mean Pre-Test Score	Mean Post-Test Score	Difference in Means	'T' Value	Degrees of Freedom	'p' Value	95% Confidence Interval
Assessment	11.04	13.29	2.25	-5.23	55	0.000	2.11, 2.39
Treatment	9.34	11.56	2.22	-4.60	55	0.000	2.03, 2.41
General Knowledge	5.54	6.20	0.66	-2.04	55	0.047	0.57, 0.75
Total	25.91	30.77	4.86	-5.86	55	0.000	4.44, 5.28

Of the 3 authorities in the experimental group HA3 showed the smallest proportional increase of 18.76%.

#### 4.6.3. Post Test Scores - Control Group

The corrected mean score for the control group changed from 24.09 to 24.52 (SD = 4.86, Range 12-32). There was very little evidence of change in any section of the instrument. The mean 'Assessment' score changed from 10.42 to 10.47 (SD = 2.39, Range = 6-15). The mean 'Treatment' score from 8.52 to 8.81 (SD = 2.43, Range = 3-13) and the mean 'General Knowledge' score from 5.14 to 5.23 (SD = 1.70, Range 3-9). A comparison of the control group's mean pre and post-test scores are illustrated in Figure 4.3.

**Figure 4.3. Mean Pre and Post-test Scores (Control Group)**



The differences in the control group's pre and post-test mean scores were not found to be significant ( $d = 0.43$ ,  $T' = -0.40$ ,  $Df = 20$ ,  $p = 0.691$ ).

The pre to post-test differences in scores for the control group were also examined across each dimension of the instrument and none of the analyses showed any significant differences. These pre to post-test score changes are summarised in Table 4.20.



**Table 4.20. Pre to Post-test Changes in District Nurses' Mean Scores  
(Control Group)**

<b>Section of Instrument</b>	<b>Mean Pre-Test Score</b>	<b>Mean Post-Test Score</b>	<b>Difference in Means</b>	<b>'T' Value</b>	<b>Degrees of Freedom</b>	<b>'P' Value</b>
<b>Assessment</b>	10.42	10.47	0.05	-0.09	20	0.928
<b>Treatment</b>	8.52	8.81	0.29	-0.54	20	0.596
<b>General Knowledge</b>	5.14	5.23	0.09	-0.26	20	0.800
<b>Total</b>	24.09	24.52	0.43	-0.40	20	0.691

The difference in mean scores in the control group of 0.43 fell within the 95% Confidence Interval of 0.30, 0.56 which demonstrates that the number of district nurses in the control group were sufficient to measure any differences. In this case the non significant change indicates that there were no interactive effects of pre-testing. Therefore interactive effects can be discounted as an explanation of changes in the experimental group's pre to post-test mean scores.

#### **4.6.4. Within Group Differences - Control Group**

No significant differences in pre and post-test scores were found in either of the two control authorities, or on any section of the instrument. These are illustrated in Tables 4.21 and 4.22.

**Table 4.21. Pre to Post-test Changes in District Nurses' Mean Scores - HA4**

Section of Instrument	Mean Pre-Test Score	Mean Post-Test Score	Difference in Means	'T' Value	Degrees of Freedom	'P' Value
Assessment	11.00	10.44	0.56	0.69	8	0.508
Treatment	7.33	8.77	1.44	-1.98	8	0.083
General Knowledge	4.88	5.88	1.00	-1.55	8	0.160
Total	23.22	25.11	1.89	-1.11	8	0.300

**Table 4.22. Pre to Post-test Changes in District Nurses' Mean Scores - HA5**

Section of Instrument	Mean Pre-Test Score	Mean Post-Test Score	Difference in Means	'T' Value	Degrees of Freedom	'P' Value
Assessment	10.00	10.50	0.50	-0.72	11	0.484
Treatment	9.42	8.83	0.59	0.87	11	0.401
General Knowledge	5.33	4.75	0.58	1.74	11	0.111
Total	24.75	24.08	0.67	0.50	11	0.624

The difference of 1.03 in the mean post-test scores of HA4 and HA5 was not significant. (Means = 25.11 & 24.08; 'T' = 0.45, Df = 19, p = 0.650).

#### **4.6.5. Between Group Differences at Post-Test**

At pre-test there had been no significant differences in mean scores between the 2 groups, (experimental group mean = 25.64, control group mean = 24.04, 'T' = 1.39, Df = 169, p = 0.167). However when the experimental group mean post-test score of 32.62 was tested against the

control group mean of 24.52 the difference of 8.10 was found to be significant ('T' = 4.46, Df = 128, p = 0.000, 95% CI = 7.75, 8.45).

#### **4.7. Effect of Intervening Variables on Post-test Scores**

As the change in the experimental group's score was so marked it was necessary to account for the effect that intervening variables, which may have raised district nurses' awareness of leg ulcer management, had had on the experimental group's post-test scores. None of these were found to have a significant relationship with district nurses' scores, and these are summarised in Table 4.23.

**Table 4.23. Effect of Intervening Variables on District Nurses' Mean Post-Test Scores (Experimental Group)**

<b>Intervening Variable</b>	<b>Mean Post-Test Score If Present</b>	<b>Mean Post-Test Score All Others</b>	<b>Difference in Means</b>	<b>'T' Value</b>	<b>Degrees of Freedom</b>	<b>'P' Value</b>
<b>New Ulcer Patients</b>	32.72	32.62	0.1	0.06	107	0.948
<b>Attendance Study Days</b>	32.80	31.56	1.24	0.57	107	0.568
<b>Attendance Drug Company Demonstrations</b>	31.56	32.80	1.24	-0.57	107	0.568

#### **4.8. Perceived Effect of Experimental Variable on Reported Practice**

The significant change in the experimental group's pre and post-test scores is consistent with the findings from the district nurses' evaluations of the clinical information pack, which suggested that the pack had been useful, relevant and well received.

All district nurses in the experimental group had used the Information Pack, 79 (72%) having used both the text and the tape, 16 (15%) using the text only and 12 (11%) using the tape only. 2 nurses (2%) who completed the post-test questionnaire did not wish to participate in evaluation of the pack. Therefore the number of evaluation surveys entered into the analysis was 107.

##### **4.8.1. Perceived Utility of the Pack to Practitioners**

Analysis of fixed alternative responses showed that in terms of disseminating research information, 56 (52%) district nurses had found the clinical information pack "very helpful" and 49 (46%) "quite helpful". Only 2 nurses (2%) reported the Pack as "not really helpful". In addition to completing the scaled responses, 40 (37%) district nurses also commented on how the Clinical Information Pack had helped their understanding of leg ulcer management.

For example;

**"By presenting the facts in a logical way it gave the basis for assessing leg ulcers in practice"**

**(CR101)**

**"(It) helped me be more careful when assessing ulcers and the importance of differences in types of ulcer"**

**(CR049)**

With regard to how the information pack had helped the nurse in her clinical practice 40 (37%) of these district nurses had found the Pack "very helpful" and 58 (53%) "quite helpful". Eight (7%) district nurses reported it as "not really helpful" and 1 (1%) said the pack was not at all helpful to clinical practice. In addition, 24 district nurses elaborated on the fixed responses in the open ended section of the question. Classification of these 24 open ended responses suggested that where the Pack had helped a district nurse in her practice it was in pointing up omissions, which she had subsequently included in her clinical work. For example;

**"(It) made me use a Doppler and realise I didn't find it as clear cut as I expected it to be. Made me measure ulcers more. Made me stop cleaning every ulcer on sight!"**

**(CR027)**

**"I now do T.P.R. and routine urinalysis on all my new (leg ulcer) patients"**

**(CR129)**

The district nurses itemised a total of 44 changes in practice related to the care of patient's with leg ulcers. These included aspects of assessment, treatment, referral patterns, documentation and the teaching of students. These reported changes are summarised in Table 4.24.

Table 4.24. Summary of Changes in District Nurses' Reported Practice

<b>Aspects of Practice Changed</b>	<b>Reported By Number of Nurses (% of sample)</b>
<b>Assessment Practices</b>	18 (17%)
<b>Treatment Practices</b>	10 (9%)
<b>General Practices and Referral Pattern</b>	6 (5%)
<b>Others - eg, Documentation practices, teaching students</b>	10 (9%)
<b>Missing/No response</b>	65 (60%)

Sixty seven (63%) district nurses in the experimental group found the information pack's guidance for practice "very useful", while the remaining 40 (37%) found them "quite useful". There were no respondents in the group who held the opinion that this guidance for practice had no utility in their clinical work.

#### **4.8.2. Packaging and Presentation of Material**

The packaging of the clinical information was very well received by the 107 district nurses in the experimental group who evaluated it through

completion of the post-test questionnaire. Scaled responses from evaluation questions show a positive appraisal of the packaging, which is supported by data from the open ended questions.

Packaging and presentation of the clinical information was rated by 82 (77%) district nurses as "very good" and by 25 (23%) as "quite good". None of the study participants considered the packaging and presentation to be poor or very poor. Fairly typical comments from district nurses included;

"(The) packaging is very good and attractive, also the presentation is good"

(CR125)

"Well presented and easy to understand, formulated in a logical order"

(CR058)

"Presented well, easy to read, concise"

(CR143)

Of the two media used for presentation of the clinical research information 31 (28%) preferred the text, 36 (33%) preferred the tape and 37 (34%) liked both equally. None of the respondents reported not liking either format and 5 (5%) did not answer the question.

#### **4.8.3. Contents of Information Pack**

Regarding the material content of the clinical information pack 60 (56%) district nurses reported that "most" of the information was familiar to them. Forty one (38%) reported that the pack contained "some" new information and 1 district nurse (1%) said that all the information was new to her. The remaining 5 (5%) nurses reported being familiar with all the material presented in the Clinical Information Pack, although this particular finding is not supported by either pre or post-test scores.

A hundred and one (93%) district nurses also made further comment about what they particularly liked in the Pack and two main themes emerged from analysis of this data. One related to the clarity of the information presented and the other to the perceived relevance of the information to district nurses. The notions of clarity and relevance can be illustrated by examples from the district nurses;

"I liked the clear and concise way in which the information was presented"

(CR083)

"...the relevant information given would be very useful to new D.N.'s with little experience of leg ulcers"

(CR008)

"It was nurse based and didn't suppose we live in utopia"

(CR148)



Far fewer nurses, 39 (36%), made comments on aspects of the pack which they disliked. Again there were 2 principal categories. These related to the physical aspects of the pack and the deliberate repetition of the information in the summaries;

"It repeated a lot of the information in the summaries"  
(CR072)

"I would prefer the blue folder to be smaller"  
(CR105)

"Something else to clutter up the car - far too big!"  
(CR038)

None of the comments on aspects of the pack which nurses disliked made any reference to either the substance or the concept of the Clinical Information Pack.

Forty one (38%) district nurses expressed opinions as to how the pack could be improved and these comments all came into the category of being concerned with "expanding" the information. To illustrate this concept;

"Skin sensitivity was too brief"  
(CR032)

"More detail on types of dressing products available, how they work and how long to use them before trying another"  
(CR092)

"How progress can be monitored, more specific details on dressings"

(CR010)

"More about skin changes and medical conditions which predispose to ulcers"

(CR047)

"More examples, photographs, advice on specific treatments"

(CR139)

#### **4.9. District Nurses' Opinions of the Study**

Of the 31 (29%) district nurses who expressed a view, the opinion was that participation in the study had been beneficial to them. For example;

"I enjoyed the whole exercise and wish we had this sort of thing more frequently on different subjects"

(CR051)

"Excellent as DN's do not have enough in-service training which stimulates them to further their knowledge. The information pack causes you to stop and think and re-evaluate practices"

(CR140)

"I enjoyed taking part and found the pack useful both for myself and for teaching students"

(CR118)

However, it should be noted that the proportion of district nurses who expressed a view on participation in the study is small, and as such their

views are not necessarily representative of all the district nurses who participated in the research.

## **PART TWO - INTERVIEWS WITH MANAGERS**

### **4.10. Introduction to Part Two**

The purpose of interviewing service managers was to address the second and third study aims. These were to gain insights into the management of district nursing services and identify organisational factors in the reformed NHS which may influence research utilisation in district nursing practice.

Each of the 5 study authorities was represented by at least one service manager, and a total of 22 managers participated in the interviews. The data collected included factual information about the structures of the organisations, and managers' opinions and perceptions about organisational processes (see Appendix IX). These data were subject to content analysis in order to give a picture of the organisations in which the district nurses worked, and an insight into the managers perceptions of their responsibilities for the district nursing service.

The findings from analysis of the interview data include profiles of the five study organisations. They also furnish a description of the managers

themselves and management structures and processes in the reformed NHS. The managers evaluations of the utility of this study are also presented.

In order to identify organisational factors which may have influenced the utilisation of research findings in district nursing practice, and to add contextual depth to the experimental findings, the findings from analysis of interview data were related to the district nurses' scores. In this way some possible explanations for the measured differences in scores have been uncovered and are discussed here.

#### **4.11. Organisational Profiles**

The 5 participating health authorities profiles were described in terms of the whole organisation. It should be noted however that within the study sites there were some reported differences in the managed localities in terms of the type and size of population, the socio-economic profiles and the health needs of the community being served.

##### **4.11.1. Socio-economic Profiles**

All participating organisations had mixed socio-economic profiles. HA3 serviced a predominantly inner city population, with some suburban areas. HA5 comprised some inner city with rural areas and an affluent coastal district. HA1 and HA2 were described as urban/suburban with rural villages

and small industrial areas. The other authority, HA4, was a predominantly coastal area, which served as a dormitory for several larger industrial and commercial centres.

#### **4.11.2. Population Size and Localities**

The size of population in the 5 study authorities ranged from 120,000 to 665,000 residents, and all organisations delivered their services through a number of managed localities.

HA1 served a stable population of 300,000. The organisation was divided into 5 localities, within which were 17 centres where district nurses were based.

The stable population served by HA2 comprised approximately 170,000 people. The authority was divided into 5 areas and had 14 centres which district nurses worked from.

HA3 covered 665,000 residents, who were a mobile and decreasing population. HA3 consisted of 9 localities and 32 different district nurse bases.

HA4 served a stable population of 120,000 people and was divided into 2 localities with 9 district nurse centres.

The population in HA5 was 360,000 and increasing. HA5 had 7 localities and 27 centres from which district nurses worked. At the time of the study only 4 of these localities had a manager in post due to internal reorganisations.

#### **4.11.3. Stage of Organisational Development**

Relative to the NHS reforms of community health services the 5 authorities were at different stages of organisational development. HA1 was a "First Wave" NHS Trust, and at the time of data collection was coming to the end of its first year of Trust status. HA3 was a "Second Wave" Trust and assumed Trust status during the period of the study and HA4 was a successful applicant for "Third Wave" Trust status and was in preparation for the organisational change. HA2 was a Directly Managed Unit and at the time of the study had no plans to submit an application for Trust status, and HA5 had submitted an application for "Fourth Wave" Trust status which had been unsuccessful. The consequence of this was that the authority was undergoing radical internal reorganisation at the time of the study, in order to ensure that the resubmitted Trust application would be successful.

The profiles of the 5 study authorities, in relation to each other, are illustrated in Table 4.25.

**Table 4.25. Comparison of Organisational Profiles**

<b>Code</b>	<b>HA1</b>	<b>HA2</b>	<b>HA3</b>	<b>HA4</b>	<b>HA5</b>
<b>Stage of Development</b>	1st Wave Community Trust	Directly Managed Unit	2nd Wave Community Trust (In Transition)	3rd Wave Community Trust (In Preparation)	Unsuccessful 4th Wave Trust Application
<b>Estimated Population</b>	300,000	170,000	665,000	120,000	360,000
<b>Socio-Economic Profile</b>	Urban Suburban and Rural	Urban Suburban and Rural	Inner City and Outer City	Costal Dormitory	Inner City, Rural and Costal
<b>Number of Localities</b>	5	5	9	2	7
<b>Number of Managers</b>	5	5	16	2	4
<b>Number of District Nurse Bases</b>	17	14	32	9	27

In terms of accounting for differences in district nurses' scores the degree of organisational stability may have been an influential factor. The two most "unstable" authorities were HA3 and HA5, in that both were in the middle of organisational changes at the time of the study. This could account for the finding that HA3 was significantly different from HA2 at pre-test, and showed the smallest proportional improvement in scores within the experimental group. However, as an explanation, it is undermined by the finding that there were no differences between the control group authorities (HA4 and HA5), either at pre or post-test, and the finding that HA5 was also in an unstable organisational state.

## **4.12. Managers' Profiles**

### **4.12.1. Career Histories**

The majority of the service managers (20) all had a professional nursing background. 18 of these had progressed through a traditional career pattern (Salvage 1985, Hardy 1986), of a general nurse training and a more specialised professional qualification. Followed by experience as a sister, progressing to nursing officer or senior nurse, before making the transition to general management.

Of the managers with nursing backgrounds 2 had followed atypical career paths. One had been selected by her employing authority for a period of intensive management training. The other was a graduate nurse who had taken the initiative for her own managerial development, supported by her line manager.

The remaining 2 managers were graduates of the health service's General Management Training Scheme (GMTS), and both were employed by the same authority.

All managers were asked to describe how they had come into their current post and analysis revealed 2 distinct paths into a management career at this



level of the health service. These were classified as "career choice" and "accidental moves". 12 managers had made a career choice. For example;

".... through sheer hard work, I've always been good at it, always wanted to do it "

(M12)

"I saw the advert for the manager of (Locality Name) and decided to apply...."

(M2)

"I applied and got it - the best person for the job"

(M16)

In contrast to the career choice managers, 8 managers had not actively pursued a management career but rather arrived at one through force of circumstance. These circumstances included internal reorganisations where the title and nature of a role had been changed, being in a position of 'seniority' and through a process of 'natural progression'. These were categorised as the "accidental" route to a management career. Comments from some of the managers illustrate this notion of accidental career moves;

".....you know how it is, you just do your job and the next thing - bang - you're running the show...."

(M14)

"I've worked in (Locality Name) donkey's years, I've been reorganised more times than I can remember"

(M20)

"No, I can't say I wanted to be a manager, but the thing is I had some trouble with my feet, I ended up doing things around the office"

(M5)

In terms of accounting for the differences in district nurses' scores the career route taken by the service manager was unlikely to have been an influential factor. All authorities had some career managers and some 'accidental' managers, and there was no discernable pattern of managerial career routes found in the study authorities.

#### **4.12.2. Role Responsibilities**

The managers' role responsibilities were very similar throughout the 5 health authorities. All 22 managers described daily administration or service delivery as part of their remit and 14 also had responsibility for personnel management. Eleven managers described 'communication' as an aspect of their role.

Only 8 managers had any responsibility for delegated budgets and these were all locality general managers. None of the interviewees who were designated 'nurse managers' had any budgetary responsibility.

Planning, in so far as implementing health authority policy, was identified as part of the work of 5 managers, but none of these 5 had any input into strategic planning either at their own or a higher level of the organisation.

Three managers had clinical responsibilities and 2 of these were 'H' grade district nurses who were temporarily filling the nurse manager role because

of sickness of their line managers. In these cases their management responsibility was considered secondary to their clinical work. The other manager with clinical responsibility had a predominantly administrative post but also had a small clinical caseload of her own.

One of the interviewees described teaching and supervision as a managerial responsibility, and 1 was required to deputise for the locality general manager when necessary.

Although only 1 of the 2 service managers interviewed in HA2 had a clinical dimension to her role, this was in fact a policy of the Director of Community Services in the health authority. The other 3 managers of district nursing services in HA2, who were not interviewed, also carried a small clinical caseload. None of the other 21 managers in the other 4 authorities had any clinical dimension to their role. In terms of accounting for the higher scores in HA2 this difference in role responsibilities may have been an influential factor. By carrying a clinical caseload the managers in this authority maintained direct contact with the clinical work, which would have enabled them to keep a focus on the issues which were important to district nurses. It may also have suggested to the district nurses that clinical work was important and was something valued by the managers in this authority.

### 4.12.3. Role Perceptions

Although the execution of the role of 'manager' is both situation dependant and a matter of individual interpretation (Mintzberg 1975, Drucker 1988, Huczynski & Buchanan 1991), there were many similarities in the way the managers in these 5 different health authorities conceptualised their role. Two strong themes emerged from the data, those of the service manager as "facilitator" and the service manager as "supporter".

The facilitator role was where the manager conceptualised their job as being concerned with meeting objectives and "making things happen". Their primary focus was the organisation. Facilitator managers saw the direction of their responsibility as being directed toward the people above themselves in the organisation. Ten of the managers' role perceptions were classified in the facilitator category. However, it was interesting to find that 8 of these managers (who all had a nursing background) also qualified their role perceptions in terms of their previous nursing experience. To illustrate;

"I'm a manager through and through, mind you, I trained as a nurse and came up through the ranks, so I understand. The girls (DN's) respect me for that"

(M16)

"Although I'm the manager I have a good understanding of the things that concern them (DN's), I've been a nurse myself of course"

(M4)

"Well I'm called a manager, and I manage things but it's not that different from a nursing officer, anyhow, I don't mind clinical work, I'll always help if they're stuck"

(M13)

The supporter role was where the manager conceptualised their job as being concerned with individual personnel and "helping things happen". Their primary focus was on the individual within the organisation. Supporter managers saw the direction of their responsibility as being directed toward the people below themselves in the organisation. Ten of the managers role perceptions were classified in the supporter category;

".....mainly support for (Locality Manager), going to meetings, a bit of a resource person really"

(M8)

"..... supervising, looking after things, making sure they're (DN's) all alright"

(M22)

"Well, I look after them (DN's) and that's a full time job"

(M20)

"At the end of the day I'm here to look after the nurses and make sure they do their work"

(M5)

The two managers whose role perceptions did not fit into either of these categories were the 'H' grade district nurses who were temporarily acting

as managers. They conceptualised their roles as clinical practitioners, with the management responsibility a complication of their real work.

"Piggy in the middle that's me, that lot (a group of DNs) have never liked me anyway and the suits (general managers) don't take any notice 'cos I'm only wearing one of these (pointing at her sister's uniform)"

(M18)

The managers' role perceptions may offer some insight as to why the district nurses in HA2 had higher scores. Both the managers in this authority conceptualised their role as "supporters". This finding, together with the finding that managers in this authority also carried a small clinical caseload, is suggestive of an organisational ethos which is oriented towards the support of district nurses' clinical work.

#### **4.12.4. Management Training**

The amount and type of management training varied considerably both between individuals and between health authorities. Some managers cited more than one type of training for their role while others had had no formal training at all.

A total of 8 managers had attended locally organised management development courses while 7 had a nationally recognised management qualification gained outside the organisation. Four of the interviewees had

had both local and external management training. Two managers who had attended management courses also cited their experience as a manager as part of their 'training' for the role.

A further 6 managers reported experience as the only basis of their management skills and 3 of these managers also believed that they did not need any training.

"Training? - there's no time for that, you have to get on with it and do the best you can"

(M20)

"You learn an awful lot through trial and error, if you're big enough to take the knocks"

(M12)

"I'm very experienced - been doing the job for years. I don't need it"

(M2)

"No special training just experience and enthusiasm!"

(M13)

Nine of the interviewees had not had any formal training at any time in their management careers.

In HA1 all 4 managers had attended a structured management programme as part of the organisational development. Three of them also had an external management qualification.

One of the managers in HA2 had had no formal training at all, and her management practice was entirely based on experience. The other manager was pursuing management development courses within the organisation.

In HA3 the majority of managers, 7, had had no formal management training. Two of these managers also claimed they did not need any, whilst another 3 believed they had gained appropriate experience in the execution of the role. Three managers reported attending locally organised study days. Two managers were graduates of the GMTS, and 1 other also had an external management qualification.

Both managers in HA4 said their management practice was founded on experience. One of these also had an external qualification and the other had no formal management training. In HA5 the manager's practice was all experientially based.

In terms of accounting for the biggest proportional improvements in scores for the district nurses in HA1, this finding may offer some insight. The finding that all the managers in this authority had undertaken structured training programmes may have been indicative of the culture of this



particular organisation. These managers in HA1 suggested that in-service training and development was valued by the organisation. However, for this factor to have been influential on district nurses' scores, would imply that the district nurses shared this organisational value. However, the data collected from district nurses in this study is not appropriate for supporting or refuting this proposition.

#### **4.12.5. Keeping up to Date**

Of the 22 managers interviewed 7 reported that, for a variety of reasons, they did not keep themselves up to date.

"I've a good idea what's what but there's not enough hours in the day to keep up with everything going on"

(M20)

"I don't need to....the only way to keep up-to-date is getting your hands dirty"

(M16)

"I'm too old for that!"

(M21)

Nine of the managers kept themselves up to date through "informal" channels. These included organisational gossip, radio and television programmes and, what was described by some interviewees, as "the grapevine".

"Because I know my staff I always know exactly what's going on"

(M22)

"I haven't got time but if there was something really big I'd hear it on the grapevine"

(M4)

"I find out a lot from colleagues"

(M11)

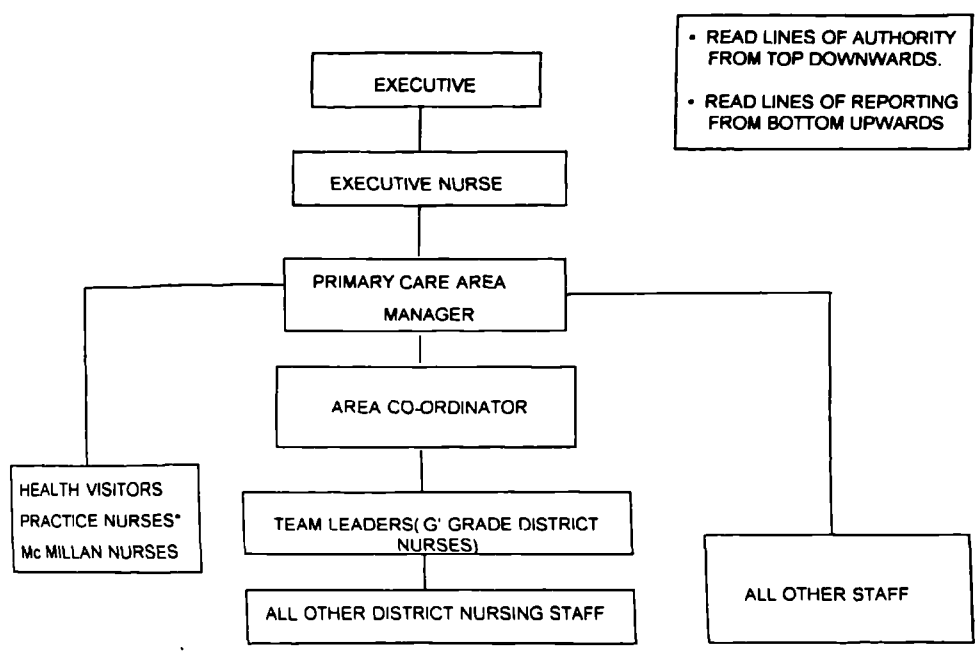
The other 6 managers kept themselves up to date by means of "formal" mechanisms. These included reading journals and attending study days and courses.

If the managers' means of updating themselves were to have influenced district nurses' scores, then it suggests that service managers had to be seen by district nurses as respected opinion leaders. Whilst there is no evidence in this study to support this, the finding nevertheless raises an important issue about research utilisation in district nursing. If evidence based practice is the goal throughout the health service organisation (DoH 1993a), then how would it be reasonable for general managers to expect research based district nursing services, if their own practices were not kept up-to-date.

### 4.13. Management Structures

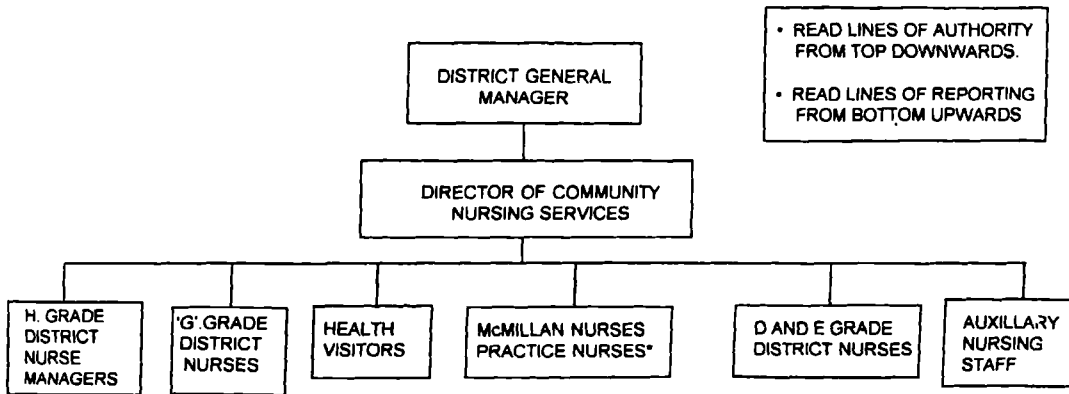
Each of the 5 study authorities had a management structure in which lines of authority and reporting arrangements were clearly identified. In order to illustrate both the managers and district nurses' positions in each of the organisations, the management structures are presented diagrammatically in Figures 4.4 - 4.8.

**Figure 4.4. Management Structure HA1**



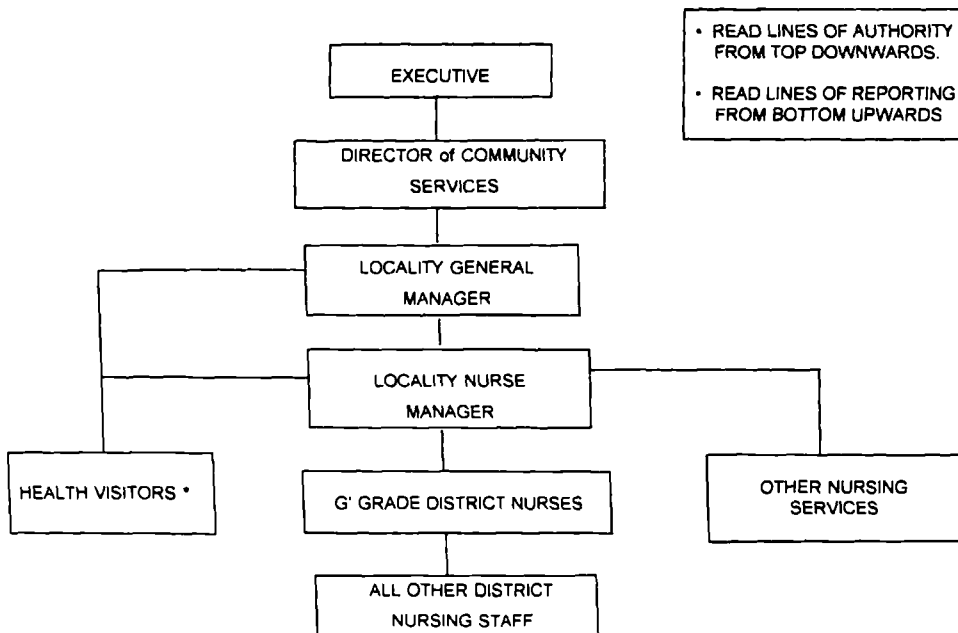
\* PROFESSIONALLY ACCOUNTABLE ONLY

**Figure 4.5. Management Structure HA2**



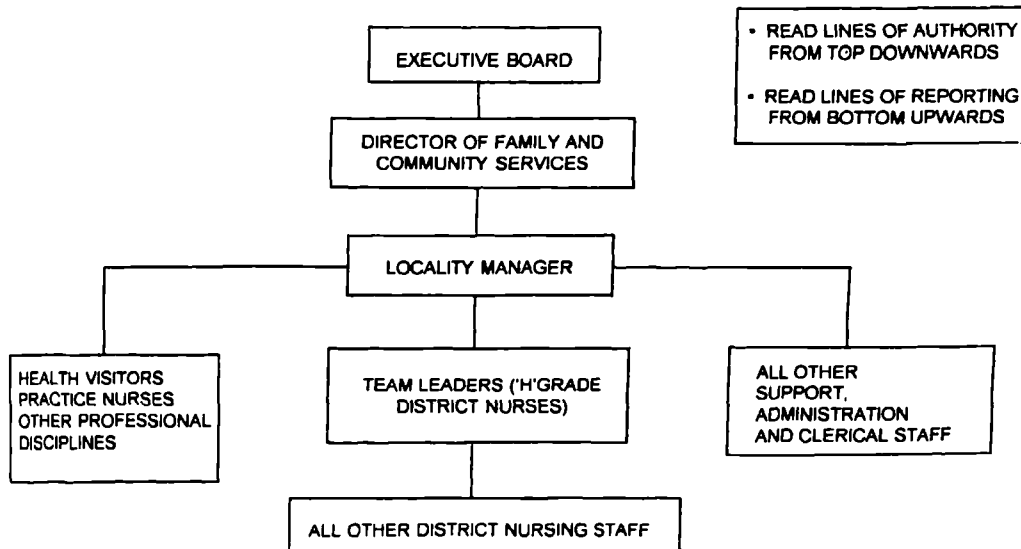
\*PROFESSIONALLY ACCOUNTABLE ONLY

**Figure 4.6. Management Structure HA3**

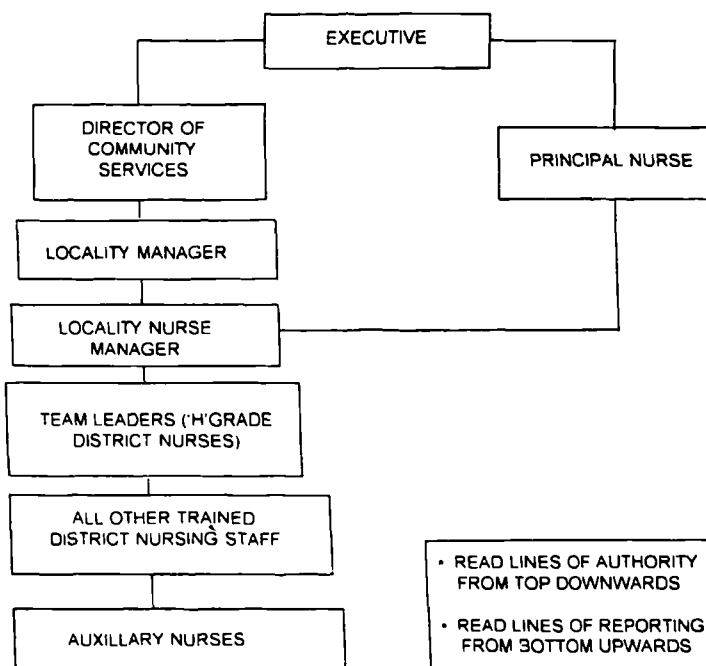


\*WHERE THE LOCALITY GENERAL MANAGER HAD A NURSING QUALIFICATION, HEALTH VISITORS REPORTED DIRECTLY TO THEM

**Figure 4.7. Management Structure HA4**



**Figure 4.8. Management Structure HA5**



The finding that HA2's management structure was completely different to the other 4 hierarchical arrangements could be an important factor in accounting for the differences in HA2's score. In HA2 all district nurses had direct access to the director of community services. If this finding is considered alongside the finding that all service managers in this authority also carried a small clinical caseload, then it suggests that the management arrangements were designed to support clinical work. It is arguable that district nurses who felt their work in the organisation was valued by their managers would be more committed to providing a high quality service, in which case they may have been more aware of research and developments in health care delivery.

#### **4.14. Management Processes**

##### **4.14.1. Organisation of Clinical Work**

Two different methods of organising clinical work were described by the service managers. Twelve managers reported that clinical work was organised by designated "teams" of district nurses.

"That's up to the teams, mind you I like to know what's going on"

(M13)

"...as far as I know the sisters work in teams of 3 and share the others (nurses) between them"

(M14)

"The 'G' grade is the team leader and she delegates work to junior staff"

(M4)

Seven managers suggested that the organisation of clinical work was the responsibility of individual district nurses.

"The nurses themselves do that....."

(M3)

"The sisters all do their own thing, it's up to them"

(M8)

"That's down to individual nurses, I only get involved if there's trouble"

(M11)

The other 3 managers did not know how the clinical work was organised.

Throughout the 5 health authorities different models for the organisation of clinical work were employed. In HA1 and HA3 the different localities used both teams of district nurses or individual discretion to organise the clinical work. In HA2 and HA4 all the clinical work was organised by teams of district nurses, and in HA5 all work was organised by individual practitioners.

This finding does not appear to be particularly important except in support of the notion of a nurse centred organisational culture in HA2. District

nurses who work in teams have legitimate access to their peers, and thereby also have access to professional and personal support from other district nurses, which may be an important factor in making them feel valued and supported by the organisation (Huczynski & Buchanan 1991, Mullins 1993, Yuen 1993).

#### **4.14.2. Monitoring Nursing Staff Performance**

Eight managers reported using formal mechanisms for monitoring nursing staff performance;

"Customer satisfaction surveys are a good way of doing that, we use them sometimes"

(M12)

Three managers suggested that they were able to monitor staff performance through intuition;

"If you're a good manager you know how your staff are doing"

(M14)

And 4 monitored performance through reaction to complaints;

"...it comes to my attention when something goes wrong. You can't monitor good practice unless a patient or their family write a thank you letter"

(M2)



Seven managers reported that they did not use any means, either formal or informal, to monitor the performance of district nursing staff.

"I don't think that's my job, they're all grown women and professional nurses"

(M4)

"...you can't do that, they're professionals and you've got to trust them to do a proper job...."

(M5)

"You have to trust them - I trust them"

(M22)

"I don't care what they do as long as they stay in budget"

(M15)

As organisations, HA3, HA4 and HA5 had no policy on monitoring district nursing staff performance. In these authorities it was at the discretion of individual managers whether or not they monitored the performance of nursing staff. At the time of the study, HA2 had just started to implement Individual Performance Reviews for district nurses. HA1 was the only authority with a policy for monitoring nursing staff performance, and this was through clinical audit. This finding does not add to the understanding of the differences in district nurses' scores between the authorities. However, it does raise the question as to why the district nurses in HA1 did not have the best overall scores, if their practice was already subject to the scrutiny of clinical audit.

#### **4.14.3. Communication of Information**

In the 5 study sites the means of communicating information between managers and district nurses was related to both the organisation's structure and the individual manager's personal style. Data analysis showed there were two types of communication strategies used by these managers. The "formal" strategy included meetings with an agenda, memos and other written communications, and an appointments system for district nurses to access the manager. The "informal" strategy included meetings without an agenda, individual direct contact and an "open door" system for nurses to communicate with their manager.

Managers in HA1, HA3 and HA4 used a mix of formal and informal strategies to communicate with district nursing staff. HA5 used formal channels only and the managers in HA2 used informal channels only.

Sixteen individual managers reported communicating with district nurses by means of both formal and informal channels;

"It's mostly one-to-one open door stuff, the staff know they can approach me anytime about anything. Then there's memos and the communications book at the clinics"

(M2)

"The white board has all the messages on and it's their responsibility to read it. I have my lunch with them most days"

(M7)

**"I have sisters meetings with the 'G' grades and I see them in the clinics - I like to do my rounds and see where they're up to"  
(M13)**

Two managers used formal communication channels only, and 2 reported using only informal communication mechanisms. Two managers reported that communication in their localities had broken down completely, due to organisational instability and staff sickness.

This finding does not suggest that the methods of communication used by managers was a distinguishing feature of the different health authorities. However, the informal nature of communications in HA2, with all district nurses having direct access to the Director of Community Services, does support previous findings about the culture in HA2 being sympathetic to district nurses and their role in the organisation.

#### **4.15. Training & Development of District Nursing Staff**

Findings related to the training and development of district nursing staff are reported in terms of both organisational policies and individual managers attitudes to in service training of district nurses.

#### **4.15.1 Organisational Training Arrangements**

In HA1 a staff training programme had been established for approximately 1 year. This was a "top down" initiative, led by the Training Directorate, and was primarily concerned with helping all staff identify their role and responsibilities in the Trust. Attendance on the development course was obligatory for all district nurses at 'G' grade and above. The budget for staff training and development was held by the training directorate and no portion of it was under the control of individual locality managers.

HA2 and HA5 both had "In Service" training departments, both of which were demand led, and designed courses in response to the identified training needs of different groups of staff. In these 2 authorities staff groups had to "buy in" the services of the training department, but in neither authority was there any designated budget for district nursing staff training and development.

HA3 had no training arrangements for clinical staff. District nursing staff wishing to pursue further training either had to organise study days themselves or attend courses outside the authority. At the time of the study, a training directorate was being set up as part of the new Trust arrangements, but was not operational. The locality managers did not control a budget to support district nursing staff training.

In HA4 a designated training officer had been recently appointed to facilitate training for all grades and types of staff. Although the training service was not operational it was designed as a "top down" initiative, to address organisational and management issues within the reorganised authority. The training budget was not within the control of locality managers.

This finding may offer some account for the largest proportional improvement in nurses' scores found in HA1. If the organisation had a culture which was centred on training and development then the district nurses may have been more responsive to the study if they perceived it as being a training and development initiative.

#### **4.15.2. Managers' Attitudes to Training & Development**

Fourteen of the managers expressed a view that training and development of the district nursing staff was an important consideration, even though they did not perceive it to be their own responsibility. Of these 14 managers, 5 held the opinion that the training required by district nurses was that which was concerned with organisational developments.

"...the Trust is marvellous, nurses have never had such opportunity to develop themselves.....they (the courses) are about the new skills nurses need, budgeting, P.R., things like that"

(M19)

**"Overall I think training is crucial - especially with the Trust - people need to know what their new role in the organisation is"**  
**(M9)**

**"I'm sending three girls on the management course next week they'll all have to go eventually"**  
**(M2)**

**Eleven managers expressed the view that the training and development of district nursing staff was the nurses' own responsibility, and that, in itself, was the principal reason why district nurses did not attend training courses.**

**"I don't think they are training minded, they don't like leaving their real work"**  
**(M12)**

**"I think it's a low priority for most of them, they really need pushing, and when they do go they always complain"**  
**(M9)**

**"That's their responsibility but they always say they haven't got time - that's what I mean by set in their ways - don't want to be bothered with new ideas"**  
**(M2)**

**However, only 1 of the 22 managers considered that training and development of district nursing staff was one of her role responsibilities, and there was a clear reason for that;**

**"I was of course a personnel manager - so I'm very aware of how important training is for staff morale, productivity and job satisfaction"**  
**(M3)**

Individual managers' attitudes towards in-service training for district nurses are unlikely to have exerted an influence on the nurses' scores. It is more likely that the health authority policy on training was an influential factor. It is conceivable that however committed to training a manager was, there would be very little practical encouragement she could give to district nurses, particularly if facilities within the organisation were limited and she did not have control of a budget to support staff training and development.

#### **4.16. Extrinsic Factors**

In the course of the interviews 14 managers identified 2 different extrinsic factors which they believed had affected, or would affect, district nursing services.

##### **4.16.1. Skill Mix Studies**

Three managers described skill mix studies which had been carried out by the NHS Management Executive in their localities. In HA2 the skill mix study was perceived to have had a negligible effect on the district nursing staff because the director of community services had effectively dismissed the findings and recommendations of the study and had no plans to adjust the grade mix of the district nursing service.

"I'm not having any of it - good district nursing needs trained district nurses and to get good nurses you have to give them 'G's"

(M21)

Skill mix studies had also been carried out in one of the large localities in HA3, and the implementation of the recommendations to reduce the number of 'G' grade nurses employed, were perceived by the managers to be having negative effects on the district nursing staff.

"It's a radical shake up of the service. There's going to be competition for posts. It's set one against the other, everybody's suspicious"

(M9)

"It's madness....nobody's doing anything, they're all at each other's throats"

(M1)

This finding of the different organisational responses to the skill mix studies again supports the notion of a clinically oriented culture within HA2, which together with the other management and organisational findings, may account for the district nurses in this authority having the highest overall scores.



#### 4.16.2. NHS Reorganisations

The managers' personal views of the NHS reorganisations were mixed, and appeared to be associated with an organisation's stage of development in relation to the reforms.

In HA1, where the Trust was well established, the managers held the view that changing to Trust status had had very positive effects on the district nursing service;

"The change over has been very well managed, so everybody's happy and settled"

(M4)

"It's fantastic - everything's so much better"

(M19)

In this health authority the managers had all had training, within the Trust, concerned with their new roles and responsibilities. Although these managers all had nursing backgrounds, it is arguable that this training had re-socialised them as managers and caused them to lose sight of the issues which were important to district nurses. In which case their appraisal of the effects of organisational change on district nurses may not have been entirely accurate.

In HA3 the managers' views of the effects of the NHS reforms and the organisation's imminent change to Trust status were mixed. Of the 7 managers who expressed an opinion 2 thought being a trust would have little if any effect on district nursing practice;

"I doubt it, they'll still be doing the same job, looking after the same patients"

(M5)

Two managers thought the Trust would have positive effects for district nurses;

"I think it's wonderful - it will make nurses responsive to the customers needs"

(M3)

And 3 managers expected the Trust arrangements to have negative effects on district nursing practice.

"Nothing's changed yet but I don't trust them, give it a while and it'll be chaos. Lord knows how we'll sort it out, all that goodwill they'll destroy at a stroke. Nobody's job's safe"

(M20)

The managers in HA4 had been involved in preparation of the successful Trust application, but at the time of interview had not had any practical

experience of the reforms. They were of the view that becoming a Trust would be beneficial to the authority and to district nurses;

"I think it will give us (managers) more control, stop a lot of waste, make (nursing) staff more business minded"

(M2)

In HA5 the rejected Trust application had already had negative consequences for the authority. Executives and some managers had been dismissed and at the time of study 3 of the 7 localities did not have a manager in post and further internal reorganisations were underway. The manager interviewed was of the opinion that all staff, including the district nurses, were negatively affected by the organisational instability.

These extrinsic factors may have had an influence on district nurses' scores, particularly if they were concerned for their job security. However, if extrinsic factors were influencing nurses' scores then it would be reasonable to expect the more stable organisations to have the better scores. Although this may offer some explanation for the better scores found in HA2, the other authorities do not conform to any recognisable pattern.

#### **4.17. Follow Up Interviews**

A total of 11 managers participated in follow up interviews, after the experimental results had been returned to the district nurses and the authorities, and gave their views on the study and its results.

Of the 11 managers who were not re-interviewed 9 had left the authorities and 2 did not wish to be interviewed again.

##### **4.17.1. Managers' Opinions of the Study**

Seven managers were of the opinion that participation in the study had been of benefit to the district nurses in their localities.

"A marvellous opportunity, it's good for the girls to see something like this, something practical, coming out of the university"

(M2)

"I welcome studies like this. It's good for the staff to think about their work and get themselves up to date with the latest research"

(M19)

"It's been good for them - it's given them something to think about"

(M20)

Two managers appraised the study in terms of the perceived benefits participation had offered to both themselves and the district nurses;

"It's been really good for the staff and it's useful for me to have all this information"

(M3)

The remaining 2 managers who expressed a view did not think the study had had any benefits.

#### **4.17.2. Changes in Nursing Practice**

In relation to the care of patients with leg ulcers, 5 managers reported changes in district nursing practices since the time of participation in the study.

Doppler ultrasound machines had been purchased in one locality in HA3, and in all localities in HA4. However, the managers from these authorities reported that these initiatives had been their own, and that the purchase of this equipment was not related in any way to participation in the study.

Since the time of participation in the study specialist Leg Ulcer Clinics had been established in HA1, HA2 and HA5, and all were district nurse led initiatives. In all 3 authorities the clinics had some support and input from medical staff and were properly funded out of the authorities budgets.

However, only the manager in HA2 suggested that participation in the research may have been the stimulus for this practice development.

"The study got everybody thinking about leg ulcers and (District Nurse's Name) was really keen so she put some pressure on... as you know (Director of Community Services Name) is very supportive so she got something done.....it's staffed by the district nurses and everybody uses it, it works really well"

(M8)

This finding again serves to support the notion of an organisational culture in HA2 which was supportive of district nurses and their clinical work.

#### **4.17.3. Managers' Opinions of Nurses' Scores**

Three managers did not offer an opinion on the district nurses' scores, and 4 indicated that they thought the scores were satisfactory.

"They're better than I expected, we didn't do badly compared to the others"

(M4)

"I think they're alright..."

(M14)

Four managers thought the district nurses' scores were poor;

"I'm not surprised they're so bad, but when anybody's supposed to sit down and learn anything I don't know"

(M18)

**"I'm not surprised, there's so many things to worry about right now"  
(M20)**

The manager in HA2, where the district nurses' pre-test and post-test scores were higher than those in all other authorities, thought the results were poor but were mitigated by the fact that district nursing practice had been developed with the setting up of the leg ulcer clinic. However, she was unable to offer any explanation or speculation as to why the district nurses in this authority should have had the better scores overall.

#### **4.18. Summary of Findings**

The findings show that the methods of investigation used were appropriate for meeting the study aims. They also furnish some useful insights which could contribute to an understanding of research utilisation in district nursing practice.

In respect of the study's first aim the finding of no difference in mean scores between experimental and control groups at pre-test, which at post test was a significant difference, suggests that the experimental variable had an effect on the district nurses' scores. With all the sample characteristics and intervening variables accounted for, and with the control group demonstrating no interactive effect of pre-testing, then it is highly likely that the measured changes in the experimental group's score were due to the

district nurses' exposure to the research findings disseminated through the clinical information pack.

The findings also suggest that although it is possible for research findings to influence knowledge and reported practice the extent of the influence would seem to be dependant on several conditions, many of them outside the control of individual district nurses.

The findings from the district nurses' evaluation of the clinical information pack suggest that the method of disseminating research findings is also an important consideration. It seems that the presentation of the leg ulcer research findings in a way which was both meaningful to district nurses and relevant to their clinical practice may have been an important factor in bringing about the measured changes in district nurses' knowledge and reported practice scores. These findings can therefore offer some useful insights into how research may be effectively disseminated to nurses working in the community.

The exploratory part of the study with the service managers was also useful in addressing the second and third aims of the research. The interviews with managers furnished useful contextual information about the organisations in which the district nurses were working and gave insights into the management of district nursing services in the reformed NHS.



Despite the reorganisations of health care delivery in the community the picture which emerged from this part of the study suggested many organisational similarities between the study sites. However, some differences in management structures and processes were found in one health authority and these can be interpreted as belonging to an organisation which was "clinically centred". This finding may offer some explanation for the district nurses in this authority having the highest overall scores in the study, and may also give some indication of the organisational arrangements which are most conducive to research utilisation by district nurses.

When the findings from both parts of the study are considered in relation to each other it would appear that the management arrangements in district nursing services are an important factor in research utilisation. The findings also seem to suggest that effective research utilisation in district nursing practice is a collective responsibility. However, the debate about efficient and effective services in a market oriented NHS may itself be creating tensions between the need for research based district nursing practice and the means to achieve it.

The implications of the study findings are discussed in the final chapter of this thesis.

## **CHAPTER 5**

# **DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS**

## **CHAPTER 5 - DISCUSSION, CONCLUSIONS**

### **AND RECOMMENDATIONS**

#### **5.1. Introduction**

In this final chapter the study findings are discussed in relation to the stated aims of the research. Having adopted a general systems framework (Von Bertalanffy 1972, Klir 1972) the approach was found to be useful in interpreting both the district nurse and the service manager data and in relating the study findings to the policy debate around the need for evidence based practice in the NHS. In addition, a systems analysis also facilitated an understanding of the inter-relationships between the district nurses' scores and the management structures and processes in the participating organisations.

Together, the findings from the experimental and exploratory parts of the study offer some insights into factors which may facilitate or inhibit research utilisation in district nursing practice. These findings are considered within the context of the policies and goals of the market oriented NHS and suggest that there may be underlying tensions between the notions of district nurses' professional autonomy and clinical effectiveness in a managed health service.

Within the framework of an active dissemination model the district nurses' scores and their evaluation of the clinical information pack also offer some explanation of the way research findings may influence district nursing practice, and the implications of these findings for the development of research based practices are also discussed.

The methodological limitations and the effect these may have had on study findings are also discussed and recommendations for further research are listed at the end of the chapter.

## **5.2. Limitations of the Study**

The limitations of the study relate to the question of the generalisability of the findings and also to some practical issues specific to the instruments used in the research.

### **5.2.1. General Limitations**

As the study was carried out in one health region the findings may only be representative of the district nurses and the community health organisations in the North West. In the context of the devolution of management control of the service (DoH 1990a) and the requirement that health services be responsive to local needs (DoH 1990b) study findings may not therefore

have relevance to community health organisations outside the North West region.

The study findings may also be limited by the particular point in time when the data were collected. Since the time the study was carried out there has been a general increase in both awareness and activity in the field of research dissemination and utilisation (DoH 1991b, Sheldon et al 1994, Walsh et al 1995). It is likely that since the CRDC set the research agenda for the NHS (DoH 1993a) the response of the health regions (NHSME 1994) has raised the profile of research and research dissemination strategies throughout the health service system. It may therefore be the case that all health professionals, including district nurses, are now more aware of research utilisation issues. In this regard the findings of the study may be more topical today than when the data were collected and analysed.

### **5.2.2. Specific Limitations**

In a more specific context the study findings may be limited by some shortcomings of the study instruments and by the failure to collect duration of effect data.

The questionnaires and scoring framework used to calculate the nurses' scores only allowed a fairly crude measure of research utilisation in district nursing practice. The instruments were not sensitive to subtleties in district

nurses' responses yet it may have enhanced understanding if the study instruments had been more discriminatory. For example, if the scoring framework for the practice related questions had been broken down further so that the answers were weighted, and higher scores could have been accrued for district nurses giving more detailed responses. In addition the use of self report methods of data collection means there is no way to determine whether individual district nurses actual practices had changed as a result of the disseminated research information. However, it should be noted that the estimation of practice change is a widespread problem in studies of research utilisation (Lomas et al 1989, Grimshaw & Russell 1993) and not one specific to this research.

The lack of duration of effect test data may also limit the interpretation of the study findings. This measure was part of the original study design and could have helped determine whether significant changes in the experimental group had been maintained over time and also whether the district nurses in the control group subsequently showed similar effects in response to their exposure to the clinical information pack. The inability to carry out this part of the research means that conclusions cannot be drawn about the longer term efficacy of the method of dissemination used in the study. However, whilst this would have enhanced the study findings, the lack of duration of effect data does not detract from the measured differences in nurses' scores and the contextual data collected from service managers.

### **5.3. Issues Arising from District Nurses' Scores**

#### **5.3.1. Low Scores**

In terms of estimating the extent of research utilisation in district nursing practice it is perhaps a matter of some concern that the overall scores of these district nurses were considerably lower than expected.

As all the research findings presented in the clinical information pack could have been known and practised by district nurses it was expected that the mean pre-test scores would be at least 50% of the total 62 points. However, the pre-test mean score was found to be only 41% of the total, and in the experimental group the post-test mean score only reached 53% of the total. This would suggest that there were deficiencies in the district nurses' understanding and practice in relation to the care of patients with leg ulcers.

Given that barriers to research utilisation have been associated with individual nurses' attitudes (Clark & Lenburg 1979, Bostrom et al 1989, Champion & Leach 1989), the qualities of research and the way in which it is communicated (Hunt 1981, Lelean 1982, Butts 1982, Mercer 1984, Brown 1995) and organisational factors and management support (Hunt 1987, Closs & Cheater 1994, Rodgers 1994, Lacey 1994) then some

explanation for the district nurses' low scores should be sought in relation to these factors.

The individual factors found to be positively associated with the district nurses' scores were their age group, the length of time they had spent working on the district and whether they were a graduate nurse. However, none of these factors accounted for any of the variance within the health authorities which suggests that individual district nurse characteristics are unlikely to be a factor in the overall level of scores.

In relation to individual characteristics it was found that whether or not a nurse had completed the post 1981 district nurse training course (DHSS 1976) had an influence on their score and this was also found to account for some of the variance between the health authorities. However, this raises a question about one particular organisation's recruitment policies rather than individual district nurse characteristics.

### **5.3.2. Availability of Information**

The overall level of district nurses' scores may perhaps be accounted for in terms of the amount of research based information which was available to them in normal circumstances.



Although the availability of information and expertise on leg ulcer care was variable across the 5 study sites, slightly more than half of the nurses in the sample reported having no access to any expertise at all. This finding supports the notion that many district nurses do in fact work in professional isolation, and have limited access to sources of research material (Luker & Kenrick 1995). However, one source of clinical information which was common to all study sites was that supplied by pharmaceutical company representatives.

Slightly more than half of the district nurses (90), had attended leg ulcer specific product demonstrations organised by pharmaceutical companies. In addition a total of 154 district nurses out of the 171 sampled reported having read about leg ulcer care in the previous 12 months from material supplied by company representatives. This would suggest that drug companies and their representatives are a major source of clinical information for district nurses.

In terms of improving research utilisation in district nursing practice, the influence of pharmaceutical companies perhaps needs to be questioned, particularly as the legislation has now been passed which in theory allows district nurses limited prescribing powers (DoH 1992c) and which in practice has involved district nurses in eight demonstration sites in prescribing activities (Morris 1994). No matter how altruistic pharmaceutical companies may appear to be, the objective of all company representatives is to increase

the sale of their products, and in this context there is nothing to suggest that the material they provide to district nurses is impartial or appropriate. In addition, if these district nurses' generally low scores are taken into consideration, then neither is there anything to suggest that the material supplied by drug companies is able to facilitate the development of research based practice.

Although a health service underpinned by a market ideology would welcome an input from the private sector, as being a healthy stimulus to the internal economy, the laws of supply and demand and the ethics of the market place are not necessarily consistent with the goal of a health service in which practice is evidence based.

### **5.3.3. Working Arrangements of District Nurses**

Some explanation for the level of district nurses' scores may be found in their usual working arrangements in which they spend much of their working day in individual patients' homes (Twomey 1983, Mackenzie 1989).

In view of the suggestion that greater autonomy facilitates research utilisation in practice (Rodgers 1994, Lacey 1994), then it would be expected that the working arrangements of district nurses would have facilitated higher than expected scores. However, the low level of scores

may suggest that the notion of professional autonomy does not mean the same to district nurses as it does to their hospital counterparts.

It may be that the cost of working autonomously for district nurses is an increase in professional isolation. It is arguable then that professional isolation will mean district nurses are more likely to develop idiosyncratic practices which then become grounded in their own professional experience. Once these individual practices become established they may subsequently be very difficult to change in response to research findings (Church & Lyne 1994), which would perhaps give some explanation for the district nurses' overall low scores.

However, the significant changes in the experimental group's scores also suggests that this group of district nurses were very responsive to the research information disseminated through the clinical information pack. In this case it would appear that they perceived a need for clinically relevant research findings to inform their practice, which may suggest that in this study barriers to research utilisation were related to factors outside the individual district nurse's control.

In this context explanations for the district nurses' scores must be sought in the organisational arrangements and policies of the changing health service (DoH 1989a, Ross 1990, DoH 1990b, DoH 1990c).

#### **5.4. Research Utilisation and the NHS Reforms**

The interviews with service managers were able to furnish useful contextual information about the culture and processes of the organisations in which the district nurses worked. These insights suggest that the policy debate about efficient and effective health services in the market oriented NHS may itself be creating tensions between the need for research based practices and the means to achieve it.

Many similarities between the five study sites were found, such as them all having mixed socio-economic profiles, and all delivering the district nursing service through a number of managed localities. However, there were also some differences found which facilitated an understanding of the district nurses' scores. These identified differences also gave insight into the effects a community health organisation may have on the way district nurses can use research findings in their practice.

It has been suggested that the culture of the NHS derives from the values and beliefs of the government, health professionals and the managers of the service (Harrison et al 1990, Ham 1992, Liddell 1993) and the debate suggests that there is already some conflict in the reformed NHS between government policy, managerial objectives and professional goals and values (McClure 1990, Cox 1991, Hunter 1993, Traynor 1994). The findings of

this study also suggest that the emerging values of many general managers are perhaps in conflict with district nursing values and goals.

#### **5.4.1. Organisational Change**

Relative to the NHS reforms the five study sites were all in different stages of organisational development. The theory of change in organisations suggests that innovation and uncertainty has a destabilising effect on an organisation and the people in it (Bennis et al 1985, Handy 1988, Kolb et al 1991, Mullins 1993). In this context the degree of organisational instability in the five study sites may account for some of the differences found in district nurses' scores. However, as the NHS reforms were affecting all parts of the health service in one way or another, this in itself is highly unlikely to account for all the variation within and between the groups of district nurses, and it is therefore necessary to consider the underlying purposes of the reform of community health services.

#### **5.4.2. Management Control**

It has been suggested that the reorganisation of health services was necessary because of the 'failure' of past management reforms (Strong & Robinson 1990, Harrison et al 1992). However the 1990 reforms, with their focus on controlling costs and making doctors accountable for the resources they use (DoH 1990a), suggests that the perceived failure of management

strategies has actually been a failure to control the autonomy and clinical practices of the medical profession (Levitt & Wall 1992, Walby & Greenwell 1994).

In this context questions are raised about whether district nurses are also perceived to be outside the organisation on account of their isolated and autonomous working arrangements. In which case it is possible that district nurses are perhaps viewed as being like doctors in being a management 'problem'.

This would suggest that one of the functions of community general managers in the reformed NHS is to make clinical services effective through the control of district nursing practices. This would mean that the explicit goal of evidence based practice (DoH 1991b), may be in direct conflict with the manager's need to develop cost effective services (NHSME 1992, Holliday 1992). This would perhaps lead the service manager to make economies in the district nursing service which would serve to limit the professional autonomy of district nurses and thereby create a further tension within the system which would inhibit the development of research based practice (Clifford 1981, Porter 1992).

It may be the case that whilst professional groups are pursuing research based practice for reasons concerned with developing the service delivered to the patient, general managers of health services want to encourage

evidence based practice in order to develop tangible outcome measures for clinical activities as a means of controlling health professionals.

So for example, in the case of the clinical subject of leg ulcer management used in this study, the research evidence suggests that up to 80% of treated leg ulcers should heal within a year (Callum et al 1985, Cornwall et al 1986, Browse 1988). So it is feasible that a manager of community health services could use this information to set a performance target for district nurses, and thereby *make the responsibility for meeting the target* a district nursing problem, for which they will be held accountable if it is not met.

This raises questions about whether the objective of the NHS reforms is really to contain costs and exercise managerial control through reductions in the autonomous practices of doctors and nurses.

#### **5.4.3. Organisational Training Programmes**

Another feature of the NHS reforms is the explicit focus on training and development within the service (DoH 1990a). Whilst this aspect of the reforms appears to be concerned with the overall development of health care and making the service more responsive to users (DoH 1991a), it seems that training initiatives in the reformed NHS may also be creating tensions

between district nurses and their managers. This can be illustrated by reference to the organisational training arrangements which were found in the study site which was an established first wave community trust.

As part of the Trust arrangements all members of staff in the authority, including the district nurses, were required to participate in the training programme, which suggested that training and development was a part of the organisational ethos. If the district nurses in this authority were also committed to the training initiative this may have caused them to view participation in the leg ulcer study as a developmental exercise, which may have accounted for them having the largest proportional improvement in pre to post-test scores.

However, in terms of facilitating research utilisation in district nursing practice, an organisational commitment to training and development, while useful in organisational terms, may not necessarily be beneficial in a professional nursing context.

All the managers in this authority had been 'trained' by the authority and although all had nursing backgrounds, the language they used to describe their roles and responsibilities was more reminiscent of a manager in industry than a health professional. When discussing the management of the district nursing service all spoke in terms of "performance", "service output" and "maximising resource use". This would indicate that these community



service managers had taken on board the assumption that the private manufacturing sector model of management is applicable to health services. It also suggested that the Trust's training and development programme had socialised these managers into a new managerial role, at the expense of their professional identities, when in fact they could have drawn on their professional nursing backgrounds to help develop a more appropriate and service specific model of management.

This also raises questions about why professional people with nursing backgrounds should want to become general managers and be re-socialised into another more managerial role, particularly if the clinical component of their work is what is important to them (Mackenzie 1989, Ross 1985, NHSME 1992). It may be because the nurses' career structure (DHSS 1988) does not allow for the option of having clinical responsibility and organisational authority together so that district nurses may feel obliged to take the general manager route if they want to advance their career. Alternatively, becoming a general manager may be the only way they are able to exert an influence on health care in the community, particularly if as district nurses they had felt excluded from the development of health policies and clinical practices (McIntosh 1985, Ross 1990). If other community trusts respond to their training and development responsibilities in a similar fashion to this authority then it would suggest that the commitment to 'training' in the new style NHS is in fact a covert mechanism for developing the culture of managerialism in the health service. In this

context an organisational commitment to training and development, which focuses on factors perceived to be important to the functioning of the internal market, may not be in the best interests of developing evidence based practice in district nursing, and may even be in conflict with the goals and values of district nurses (Closs & Cheater 1994, Traynor 1994).

#### **5.4.4. Managerial Support**

The study findings also suggested that the way the service managers perceived their responsibilities toward district nursing and clinical work may be an influential factor in the way these district nurses utilised research in their practice. This notion is consistent with suggestions that a manager's support is perceived to be an important factor in research utilisation (Champion & Leach 1989, Bostrom et al 1990, Rodgers 1994).

As twenty of the twenty two managers interviewed had nursing backgrounds, and many of them also claimed they maintained clinical insights and understanding, it could be argued that having a common professional background to the district nursing staff would make them supportive of clinical practice within their organisation. In which case it would be expected that the district nurses' research utilisation scores would have been higher than those recorded.

In the authority where the managers all carried a small clinical caseload this was demonstrated to be the case, with the district nurses in this organisation having the consistently best scores. However, the overall level of district nurses' scores also suggests that despite the reported clinical insights of the managers in the other authorities, this did not translate into perceived support for the district nurses' clinical work.

This finding may suggest that the more business oriented community health service managers become, then the more they risk becoming alienated from their clinical colleagues (Orchard 1993, Traynor 1994), and the less importance they are likely to attach to district nurses' clinical practice. This would also suggest that in the interests of achieving a knowledge based health service the shift toward a culture of managerialism in the NHS may not be in the best interests of evidence based patient care.

#### **5.4.5. The Basis of Management Practices**

With regard to the health service's commitment to the development of evidence based practice (DoH 1991b, DoH 1993a), the basis of management practices could also be a source of tension in community health services. It was found that many of the managers interviewed believed that experience was an appropriate basis for their own practices, which raises the question as to whether it is reasonable for managers whose own practice is experientially based to expect district nurses to base their

practices on research findings. It also raises questions about whether different organisational rules apply to service managers and whether the policy of research based practice has another agenda which is primarily concerned with financial control through the restriction of professional autonomy.

However, even if management practices were to be research based it may not be sufficient to alleviate tensions between professional and managerial values. It is conceivable that evidence based management practice may be mostly concerned with the principles of the effective management of resources. In which case it could be that research based district nursing practice is viewed as an expensive option, which is in direct conflict with the service manager's financial responsibilities.

Although it could be argued that training in management skills is a more appropriate basis for practice than experience (Haggard 1993), if there is any foundation to the suggestion that health service managers and nurses do in fact have different sets of priorities and goals (Clifford 1981, Traynor 1994, Mulhall 1995) then there would be little advantage to district nurses if health service management practices were also research based.

#### **5.4.6. Management Structures**

Another insight into how the reformed NHS may influence research utilisation in district nursing practice can be gained from consideration of the management structures in the participating health authorities. Four of the community health organisations had hierarchical management structures with several levels of managerial authority between the district nurses and the executive. In contrast to this the significantly different authority, which had the 'best' district nurses' scores, had a flat organisational structure with only one level of authority between the district nurses and the executive. Whilst this factor may have accounted for some of the difference in district nurses' scores between the study authorities, the structures of the hierarchical authorities may also have had an effect on the overall low level of scores in the district nurse sample.

There is some evidence to suggest that bureaucracy is seen as a barrier to the use of research findings in clinical practice (Clark & Lenburg 1979, Lacey 1994, Rodgers 1994). In this context, the finding of the least bureaucratic structure having the highest scoring district nurses could perhaps have been predicted. However, in terms of the development of research based practice in community health services this finding also suggests that an organisational culture, which allows and encourages professional nursing autonomy, is perhaps more conducive to the achievement of this goal.

#### **5.4.7. The Centrality of Clinical Work**

By way of giving insight into the overall relationship between management culture and research utilisation in district nurses' clinical practice, and perhaps offering some explanation as to why one group of district nurses should have significantly better scores, the characteristics of one particular community organisation merit special consideration.

The demographic data showed that one authority had a younger and more recently qualified district nursing workforce, and in addition also employed 3 of the 4 graduate nurses in the sample. Which raised the question as to why this particular authority should attract and employ this type of district nurse. When this question is considered in relation to the organisational differences found in this community health authority some insights can be gained into the conditions which may be necessary for the effective utilisation of research findings in district nursing practice.

In addition to having a management structure which had very few levels of authority, and allowed all district nurses direct access to the director of community services, each of the managed localities also had a management role which was closely identified with district nurses' clinical responsibilities. The service managers in this health authority were all graded as clinical nurses and all wore a nursing uniform. All these locality managers also carried a nominal caseload of their own. It is possible that by giving the

service managers a distinctive clinical identity, the organisation was stressing the central importance of the district nurses' clinical work, and that as a consequence its ethos was more receptive to nursing practice development through the utilisation of research findings.

The authority was also differentiated by its response to 'extrinsic' organisational factors. The NHS reforms and a recently completed skill mix study were perceived by the managers to have had a negligible effect on the district nurses. The authority had no plans to submit an application for Trust status, and the recommendations of the skill mix study to reduce the number of 'G' graded posts had not been acted on by the director of community services. In addition, at follow up interview, the manager in this authority perceived the involvement in the study to have had a stimulating effect on district nurses which had ultimately led to the development of a district nurse led leg ulcer clinic. This finding supports the notion that the managers in this authority valued district nurses' clinical work and were also receptive to and supportive of research based practice developments.

It appeared that regardless of the growth of managerialism in community health services, the management arrangements and the values of the managers in this health authority were sustaining an "old fashioned" organisational culture which was clinically centred rather than business centred. In this case it is unlikely that there would be tensions between the goals being pursued by the managers and those of the district nurses who

were delivering the service. If the organisation was seen to be one which valued clinical work it could perhaps account for why the authority attracted and employed the younger and more recently qualified, and perhaps more idealistic, district nurses which in itself had a continuous facilitative effect on research utilisation in practice.

In the wider context of developing evidence based practice throughout the reformed NHS, the organisational differences found in this authority could be of central importance. Despite the relatively low scores of all district nurses in this study, and the effort which has been invested in creating a more business like health service, these findings suggest that in the best interests of research based patient care, it is perhaps necessary for service managers to have a sense of the centrality of clinical work.

#### **5.5. Issues in Research Dissemination**

The study findings suggest that with regard to the active dissemination of research findings district nurses are perhaps not that different from doctors. In which case nursing may be able to learn something from the approaches developed in medical research and likewise the medical profession may be able to gain something from the findings of nursing research.

Despite the district nurses' overall low scores the significant findings from the research utilisation experiment demonstrated that it was possible for



research findings to directly influence district nursing knowledge and reported practice, in which case the efficacy of the method of dissemination used in this study, and the implications it may have for further research dissemination strategies needs to be considered.

#### **5.5.1. The Acceptability of the Clinical Information Pack**

The clinical information pack, as a mechanism for disseminating research information to district nurses, was very well received by participants in the study. The acceptability of the pack was attributed by the district nurses to the clinical relevance of the material and the clear and concise way in which the information was presented. It also appeared that by focusing on an important aspect of district nursing practice and emphasising the researcher's own clinical experience and understanding, some of the identified problems in communicating research to practitioners (Hunt 1981, LeLean 1982, Closs & Cheater 1994, McIntosh 1995) were effectively overcome.

The success of the research dissemination strategy may have been due to several factors. It may have been the case that the policy emphasis on research based practice (DoH 1989b) or the cumulative effects of organisational reforms in the community (DoH 1990a, DoH 1990c) had increased the district nurses' need for research based clinical information and made them particularly receptive to the intervention.

It could also be argued that the format of the pack, being similar to clinical guidelines (Brooke 1989, Woolf 1990, Grimshaw & Russell 1993, Hayward et al 1993), was an influential factor. Successful outcomes may have been due to the involvement of the service managers in facilitating the study, which could have been perceived as managerial support by the district nurses (Champion & Leach 1989, Dunham & Fisher 1990, Rodgers 1994). Alternatively the small group contact with the researcher may have worked in the same way as the process of academic detailing (Goldberg et al 1994). The study's association with the university may have caused a similar effect to that wrought by opinion leaders (Lomas et al 1991) and may have been responsible for the changes in district nurses' scores.

However, given that all these active dissemination strategies have been found to have some effect, some of the time (Oxman 1994), then it is most likely that the efficacy of the clinical information pack was due to the combination of dissemination techniques.

The acceptability of the information pack to the district nurses may also suggest that as the material was found to be accessible and relevant to their practice, they may not have been aware that it was in fact a distillation of clinical research findings. In this case it could be that where research is being utilised in district nursing practice it is viewed by nurses as "good" practice rather than research based practice (Luker & Kenrick 1992). This would suggest that the nursing profession's concern with developing

research based practice (Fawcett 1980, Miller 1985, English 1994, Mulhall 1995) may in fact be alienating some practising nurses and having an opposite effect to the one intended.

Although none of the data collected in this study could support or refute the notion, it may be the case that district nurses place the emphasis on "doing" rather than thinking about practice. In which case it raises a question about whether district nurses want to develop critical thinking skills and the ability to evaluate research findings or whether in an economic climate which is delimiting their role and constraining their professional practices they would rather simply be informed as to what constitutes "best practice" and apply that knowledge appropriately to the contingencies of different clinical situations.

This would suggest that in pursuit of the goal of research based nursing practice it may be that nursing policy makers and academics need to reconsider the way the whole concept of "research" is presented to practitioners. It would appear that if it is the case that research findings are generally perceived by practitioners to be irrelevant to their clinical work (Hunt 1981, Lelean 1982, Wilson-Barnett et al 1990) then there is a professional responsibility to ensure that nursing research activity is relevant to developing nursing knowledge and practice, and is not perceived as an elitist activity which creates intraprofessional tension by separating the profession into nurses who know about research and those who do not. This

implies a need to clarify the goals of nurse researchers and practitioners (Clark 1986, Closs & Cheater 1994) and maybe develop more collaborative approaches to research in nursing (Rolfe 1994, McIntosh 1995).

### **5.5.2. Alternative Dissemination Strategies**

Another finding of the study which could have wider implications for research dissemination strategies was that of district nurses who had visited specialist leg ulcer clinics having significantly higher scores. In terms of developing effective strategies for disseminating research to practitioners this finding could be an important one.

Of all the research dissemination strategies which have been tested and reported in the medical literature (Lomas et al 1991, Stocking 1992, Lomas 1993, Grimshaw & Russell 1993, Goldberg et al 1994, Oxman 1994), there is nothing to suggest that the development of specialist clinical centres have been seriously considered as a means of actively disseminating research information to practitioners, yet it is arguable that all the principles of effective research dissemination could be met within a specialist centre. Provided that the specialist centre had adopted a systematic method for the review and implementation of clinical research findings it is conceivable that by visiting specialist clinical centres practitioners would more easily be able to understand and believe in the research findings being presented to them (Sheldon et al 1994). In addition the need to evaluate the potential benefits

of a change in practice would also be met (Brett 1987, Stocking 1992). Another apparent advantage of using specialist centres as a means of disseminating clinical research information would be that potential practice developments could be evaluated in an environment which did not disrupt or endanger a district nurses' own practice setting in any way.

If district nurses were willing to attend specialist centres as a means of accessing clinical research information, then it is arguable that Mugford et al's (1991) criterion that the need for practitioners to demonstrate a commitment to reviewing their practice would also be satisfied.

The success of a strategy such as this for disseminating research to district nurses would of course be dependant on an organisational commitment to the provision of adequate resources and support. This would mean that service managers would have to share some of the responsibility for the development of research based district nursing practices.

The inversion of normal dissemination mechanisms, by taking practitioners to the research findings, may be particularly appropriate for research based practice development amongst a disparate workforce such as district nursing. Such initiatives may also be able to make use of the experiences gained by hospital nurses through nursing practice development units (Neal

1994), and may be a feasible proposition in the context of the increasing use of specialist nurses in community health services (Haste & McDonald 1992).

In spite of the need to overcome practical resource problems the potential benefits of this approach in facilitating research utilisation in district nursing may be a worthwhile area for further investigation, particularly if it is able to demonstrate that research based district nursing practices are in the best interests of the patient, the profession and efficiency and effectiveness in clinical services.

## **5.6. Conclusions**

The study findings have suggested that the method of active dissemination developed for this research is both effective and acceptable to district nurses. In terms of the future development of research utilisation in clinical practice it appears that lessons can be learned from the success of this method which uses a combination of active dissemination strategies. It would also appear that if research findings are presented in such a way that they are perceived to have clinical relevance to practitioners, then they are more likely to be accepted by them , and are ultimately more likely to have beneficial effects on practice behaviours.

The study has also raised several questions about how district nurses, service managers and academics can foster a climate within the NHS organisation so that research based clinical practice becomes the most attractive option for both district nurses and their managers.

It appears that the management of district nursing services in the reformed NHS is an important consideration in attempting to understand the ways in which district nurses use research findings to inform their practice. Whilst district nurses, as autonomous professionals, must take some responsibility for using research to inform their own practice, it would also appear that community health organisations, through their management teams, have an equal responsibility to foster a climate where research based practice can easily be carried out. It is arguable that this could be achieved through such measures as managers ensuring that equipment is available to support district nurses in their practices, and also by facilitating clinical audit and peer review. Managers could also take some responsibility for supporting the clinical training and development of nursing staff. However, it seems that in facilitating research utilisation in district nursing practice, the simple measures deployed in one of the health authorities in this study, which demonstrably emphasised the central importance of clinical work, have a lot to recommend them.

The influence of the wider NHS organisation has also been recognised as a factor in research utilisation. As Stocking (1992) suggests, in order to

develop clinical practice through research, the whole climate of opinion within an organisation must be conducive to the proposed practice change. In this context it would appear that in order to facilitate research utilisation in district nursing practice the commitment of all professional groups in the NHS is necessary. In this context it seems that the policies and goals of the market oriented NHS may be influential in determining research utilisation in district nursing practice. This suggests that an explanation for the apparent difficulties in developing a knowledge based health service may be found in the tensions apparent between the different policy agendas of health professionals, service managers and government departments.

At the outset this study sought to investigate whether it was possible for research findings to exert an influence on district nurses' knowledge and reported practice and to explore the effects the reformed NHS may have on research utilisation. At its conclusion the study suggests that whilst research utilisation in district nursing practice is a collective responsibility, the ideology of the market place, where health is a commodity and patients are customers, may not be compatible with the professional goal of a research based district nursing service. It seems that an organisational culture which recognises and values the central importance of district nurses' clinical work is the one most likely to facilitate a knowledge based NHS.



## **5.7. Recommendations for Further Research**

Through addressing the research aims this small study has contributed to the profession's understanding of factors which may facilitate or inhibit research utilisation in clinical practice and which are specific to district nursing in the reformed NHS. In addition a contribution has been made to the growing body of knowledge about the utility of active research dissemination strategies in the development of evidence based clinical practice.

The study has also identified areas in which further research may make a contribution to the overall development of research based practices in district nursing.

### **1. Service Managers**

In the context of the NHS internal market and the evolving culture of managerialism in the health service (Hunter & Pollitt 1992, Ham 1995, Gray 1995), it appears that it would be worthwhile to investigate the specific contribution that service managers are making to the development of a knowledge based health service.

Research in this area would appear to be particularly necessary if there is any foundation to the belief that managers and professionals in the NHS

have conflicting goals and priorities (McGuire 1990, Traynor 1994; Mulhall 1995).

## **2. Research Dissemination Strategies**

The various tested strategies for research dissemination, such as opinion leaders, clinical guidelines, outreach visits, audit and feedback, which are reported in the medical literature have been shown to have variable effects on clinical practice behaviours (Goldberg et al 1994, Oxman 1994). Yet the combination of strategies used in this study suggests that it is possible to devise acceptable and effective strategies for research dissemination to district nurses. In this context it would be useful to replicate the study, or test the efficacy of the clinical information package in another clinical practice area, to see if the same results could be obtained.

## **3. Community Centres for Practice Developments**

It may be useful to investigate the efficacy and economic viability of specialist clinical centres as a means of communicating research findings to district nurses, such as hospital nurses have had in nursing practice development units (Neal 1994). In the context of the growing trend for community health units to employ clinical nurse specialists (Haste & Macdonald 1992) this may be a feasible and practical research proposition.

#### **4. Development of Outcome Measures**

In the context of the need to develop efficient and effective health services it would appear that in order to safeguard professional interests and standards of patient care, research efforts also need to be focused on the development of realistic and professionally centred outcome measures for district nursing practices. If nurses themselves do not attend to this important issue then it is highly likely that district nursing outcomes may be determined by individuals who have little understanding of the complexities of district nursing work.

#### **5. Translation of Research into Practice**

There is still very little understanding of the cognitive process by which research findings are translated in altered practice behaviours. In this context it may be worthwhile attempting to increase understanding of this process so that effective research dissemination strategies can be devised by nurse researchers, academics and policy makers.

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## **APPENDIX I**

**AN EXPLORATORY STUDY OF THE SOURCES  
OF INFLUENCE ON THE CLINICAL DECISIONS  
OF COMMUNITY NURSES.**

**PAPER PUBLISHED IN THE JOURNAL OF  
ADVANCED NURSING**

# An exploratory study of the sources of influence on the clinical decisions of community nurses

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LUKER K.A. & KENRICK M. (1992) *Journal of Advanced Nursing* 17, 457-466  
**An exploratory study of the sources of influence on the clinical decisions of community nurses**

This paper reports a small exploratory study which identifies what community nurses consider to be the scope of their practice and the sources of influence on their clinical decisions. The study was stimulated by the emergence of the nurse prescribing initiative, which is likely to bring clinical decision making to the centre of professional debate. The study was carried out over a 5-month period and data were collected from 47 community nurses in four district health authorities. A qualitative method was employed and field work involved observation of 40 home visits and five nurse-run clinics, individual interviews and group discussions with the nurses, and scrutiny of nursing records. The data were content analysed and classified, and the categories were validated by practitioners. Findings suggest that although community nurses consider that a large proportion of their work requires a scientific basis, their practice is largely founded on experiential knowledge, and on the whole they are not positively disposed to research knowledge. The findings are discussed in the context of nurse prescribing. Questions are raised about the nature of a 'professional' knowledge base and the reclassification of scientific knowledge as nursing or experiential knowledge once it has diffused into practice.

## INTRODUCTION

This paper is concerned with the sources of influence on community nurses' clinical decision making. The issue is newsworthy, owing to various professional developments, not least the Department of Health (DOH) initiative which suggests that qualified health visitors and district nurses may, in the near future, be able to prescribe according to a limited schedule. The advisory group reporting to the Secretary of State (DOH 1989b) envisaged that nurses

with a district nurse or health visitor qualification, who undergo a short training course, should be empowered to prescribe and supply medicines, dressings, appliances and diagnostic agents listed in the nurse's formulary, and also to adjust the timing and dosage of medicines within a patient-specific protocol.

Since the time of the *Brigg's Report of the Committee on Nursing* (DHSS 1972) the proposition that nursing should be a research-based profession has become over familiar. Nevertheless, the need for clinical practice to be informed by a tested knowledge base is an important issue. As Hockey (1987) suggests, developing research-

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based practice is the appropriate response to the widespread social and legislative changes which are affecting nursing.

Within the profession itself, fundamental changes in basic training (UKCC 1986), the proposed post-registration education and practice project (UKCC 1989), together with the objectives identified in the *Strategy for Nursing* (DOH 1989) are directing the profession towards becoming more research based. Although much debate has taken place and there is a general consensus that nursing should be research based, there is little evidence that it actually is.

## BACKGROUND

One of the claims to professional status for aspiring occupations is the ownership of a specific body of knowledge which informs practice (Barber 1963). This is somewhat problematic in nursing where there has been concern over the difficulties associated with the diffusion of research findings into practice (Lelean 1982), and an emphasis on promoting research awareness. While it is not our intention to explore this particular issue we suggest that nursing's preoccupation with research mindedness and the utilization of research has served to create a distinction between research and practice. For the purpose of this exploratory study we have adopted the analytical device of separating experiential or practice-based knowledge from scientific or research-based knowledge.

Although nursing has been engaged in research activity for more than 40 years (Brown *et al.* 1983), the influence of research on nursing practice has never been clarified. It appears that much of practice is still predominantly based on experiential rather than on research-based knowledge, particularly in community nursing. Chalmers & Kristajanson (1989) suggest that, despite extensive descriptions of the nature of the work, the theoretical basis of community nursing practice is poor.

The relationship between research and practice is problematic. The dissemination and use of research findings appears to be a substantial difficulty in general nursing (Lelean 1982, Hockey 1987), and one which is compounded in the community. The community base of district nurses makes them more remote from resource centres and hence they may encounter difficulties in accessing clinical update material. Their practice is largely invisible and they rarely have the opportunity for peer review, especially with regard to clinical procedures. Whilst most community nurses are highly competent practitioners, their relative isolation increases the possibility that they may develop idiosyncratic practices which are not informed by relevant research evidence.

## Under-researched

A further problem for community nursing is that it is under-researched. Most studies, particularly those relating to 'technical' practices, have been conducted in the hospital environment. Whilst these studies may in principle be relevant to district nursing, in research terms there is nothing to indicate that the findings are transferable to community locations. For example, the management of pain at home presents a very different nursing problem than it does in a hospital ward. This problem of transferability may be exacerbated by community nurses themselves, who, in defining their role in terms of their differences from hospital colleagues, may not always be willing to recognize the relevance of research.

As many aspects of community nursing work have not been researched, and may indeed not be researchable, it is likely that many nursing skills are executed by means of practical reasoning and well-tried routines (Carper 1978, Benner 1983, 1984, Brykczynski 1989). However, the fundamental problem of accounting for experience and practice-based knowledge remains.

It is reasonable to suppose that nursing knowledge is operationalized through clinical decisions and studies of decision making illustrate that, although nurses may display a high level of skill, much of their practice is unsupported by an underlying rationale (Baumann & Bourbonnais 1982, Thompson & Sutton 1985, Roe 1989). Nevertheless, if community nursing is to be truly research based it is necessary to identify which elements of practice should be supported by scientific knowledge, and the processes by which research findings may exert an influence.

## EXPLORATORY STUDY

Against this background an exploratory study was designed to identify:

- 1 what community nurses considered to be the scope of their practice,
- 2 the sources of influence which informed their clinical decisions.

The main purpose of this exploratory study was to determine how community nurses describe their work and which factors influence their clinical decision making. It was considered important that all the definitions were generated by the nurses themselves. A range of qualitative techniques was employed, including participant observation, semi-structured interviews, scrutiny of nursing records and group discussions. The study had two parts and was carried out over a total period of 5 months. The field work involved 47 community nurses working in four different

health authorities and included observation of five nurse-run clinics and 40 home visits.

Analysis of data generated theoretical categories of clinical decisions and sources of influence, based on the nurses' descriptions of their practice, and the second part of the study sought validation of these categories and determination of their applicability to community nurses.

### Sample

The sample was one of convenience taken on the basis of access to respondents which could be negotiated with the nurse managers of the four health authorities. Participation was voluntary, and of 48 nurses approached only one declined to participate. The sample included 33 sisters, seven enrolled nurses, three specialist nurses, two practice nurses and two district nurse students.

### Method of investigation

The first part of the study involved 17 nurses from two of the health authorities, and the exploratory strategy had four elements.

In the first instance the researcher accompanied each nurse on one of her shifts and all the interactions between nurses and their patients were observed at the clinics or in the patients' homes. The main purpose of the observation was to generate the focus for the subsequent interviews. Although the researcher restricted conversation with patients to social pleasantries and took no part in the nurse-patient dialogues, she was clearly a participant by way of her presence in the same room, which may have exerted an influence on the interactions both from the nurses' and patients' points of view.

The nursing records for all patients seen were scrutinized by the researcher, and were used to inform the interviews which followed each patient contact.

The third aspect of the exploratory strategy was a semi-structured interview with individual nurses. The schedule had five broad areas for discussion which were;

- 1 elements of practice — types of work undertaken,
- 2 reasons why particular (observed) decisions had been made — identifying the underlying rationale and factors which had influenced the decisions,
- 3 general factors influencing clinical decisions — which were most common and most influential,
- 4 attitudes to research — how the nurse updated herself, her awareness of research and its relevance to her work,
- 5 attitudes to the prescribing initiative — how the nurse felt about this extension of her role.

The interviews began with a general discussion about the scope of an individual nurse's practice and then focused on the specific interactions observed in relation to any treatments the nurse had initiated or changed. The interview was then developed into a more general discussion of factors influencing decisions and research-related attitudes. All took place in the car or the clinic except where the nurse used an interaction with a patient to illustrate or emphasize a point she had made.

The fourth element of the field work was observation and group discussion with several nurses when they were together at their work base. It appeared that these contacts with colleagues were an important aspect of the whole clinical decision-making process as this seemed to be the time when nurses sought peer support for decisions they had made. The researcher participated in these group discussions and encouraged the nurses to identify the various aspects of their work and the factors which influenced their decision making.

All interview and observation data were recorded in a field work notebook between visits to patients and at the end of each shift.

### Analysis of data

Field notes were subjected to content analysis, the main emphasis being to extract and classify information which reflected the nurses' descriptions of their practice and the factors influencing clinical decisions. This analysis uncovered 56 different elements of community nursing practice (see Appendix A) and 35 sources of influence on clinical decision making (see Appendix B).

The categories generated by the sources of influence data seemed to reflect a descriptive framework which suggested that nurses' clinical decisions were informed by:

- 1 knowledge based on research and tested theories,
- 2 knowledge based on practice and arising out of nursing experiences,
- 3 knowledge which is common sense and current in everyday life.

In considering the 56 elements of practice described by the nurses it was apparent that clinical decisions could be assigned to four categories:

- 1 clinical-technical procedures — those aspects of nursing which are or should be supported by research-based or scientific knowledge,
- 2 clinical-support procedures — those aspects of practice which could be described as 'general nursing care' and require a knowledge and experience of nursing.

- 3 social-support procedures — those aspects of community nursing which do not necessarily need nursing expertise, but require common-sense knowledge and practical experience,
- 4 educational procedures — those aspects of practice concerned with teaching a patient or their carers about something or how to do something.

Of the 56 elements of practice none were considered by the nurses to be purely educational and it was acknowledged that most of the educational aspects of their work were associated with other practices. So, for example, teaching a diabetic patient about injection techniques would be described as a clinical procedure with an educational dimension.

### Validation of categories

Although all the elements of practice and sources of influence had been generated by practitioners it was important to determine whether they would have validity to other community nurses. The original 17 respondents, plus a further 30 from two other health authorities, were involved in the validation exercise.

The elements of practice and sources of influence described by the nurses (see Appendices A and B) contain several apparently similar items but, despite our attempts to logically order the indexes and collapse the categories, items were restored by the study participants who clearly saw each one as having a distinct meaning. Although this study did not explore these meanings, the way nurses differentiate between the elements of their practice may be a fruitful area for further investigation.

All 47 subjects were presented with the index of the elements of practice (see Appendix A) and asked to assign each one to a decision category. Respondents were restricted to assigning each element of practice to either the clinical-technical, clinical-support or social-support categories, except where the practice had an educational dimension. So, for example, if a nurse considered the activity of 'blood sugar assessment' to be an aspect of nursing practice which is or should be supported by research-based knowledge then she classified it as clinical-technical. If she further considered it something she taught patients to do then she also placed it in the 'education' category. Where an aspect of practice was not applicable to the nurse's own work she was asked to use her judgement to categorize it.

The same technique applied to the classification of sources of influence (see Appendix B). Respondents were asked to consider each of the items on the list and assign it

to the research-based, practice-based or common sense knowledge categories.

Nurses were invited to add any elements of practice or sources of influence which they felt had been excluded, and only two of the 47 respondents added items, both of which could be accounted for semantically, and were therefore considered to have been already included in the index.

On both these indexes a simple majority criterion was used as the unit of analysis. Any item located in a category by 60% ( $n = 28$ ) or more of the respondents was interpreted as agreement amongst subjects.

### FINDINGS

There are clearly problems with any method which attempts to reduce the dynamic nature of nursing to a series of items on a list, yet, as explained above, all the definitions used in this study were generated and validated by practitioners. The study found great diversity in nurses' descriptions of their practice, and highlighted many factors which influenced clinical decision making.

Despite the extent of the description of practice the validation study showed considerable agreement amongst respondents, and of the 56 elements of practice identified only 5% ( $n = 3$ ) could not be classified. Twenty-eight per cent ( $n = 15$ ) were identified as clinical-technical procedures (Table 1), 32% ( $n = 18$ ) as clinical-support (Table 2) and 10% ( $n = 6$ ) as social-support (Table 3). Of the remaining items, 14% ( $n = 8$ ) were mixed clinical-technical/clinical-support (Table 4) and 10% ( $n = 6$ ) mixed clinical-support/social-support (Table 5).

The analysis of the education category was as expected, the findings suggesting that the educational activities of community nurses were always associated with other practices.

### Sources of influence

The categorization of the 35 sources of influence also showed a high degree of agreement. Using the same simple majority criterion the largest part of the sources of influence, 57.5% ( $n = 20$ ), was identified as practice-based knowledge. Only 8.5% ( $n = 3$ ) of items were unable to be classified and 8.5% ( $n = 3$ ) were considered to be common sense knowledge. Seventeen per cent ( $n = 6$ ) of the sources of influence was deemed to be mixed research-based/practice-based knowledge and only 8.5% ( $n = 3$ ) was considered research-based knowledge. Those described as scientific knowledge were; the results of published nursing research with 85% ( $n = 40$ ) agreement, articles in other journals, for example the *British Medical Journal* with 68%

**Table 1** Elements of community nursing work classified as clinical-technical practices

Element of practice*	Number of respondents	Percentage agreement
Injections	37	78
Nebulizers	35	74
Medications	33	70
Management of syringe drivers	32	68
Pain assessment	28	60
Pain management	28	60
Dressings	33	70
Monitoring wound healing	28	60
Leg ulcer management	34	72
Incontinence care and treatment	33	70
Assessment of disease processes	28	60
Blood sugar assessment	30	64
Venepuncture	34	72
Patient assessment	30	64
Teaching learner nurses	28	60

\*All elements of practice were identified by study participants and, despite the apparent similarity of some items, the authors respect the nurses' descriptions of their practice.

**Table 2** Elements of community nursing work classified as clinical-support practices

Element of practice*	Number of respondents	Percentage agreement
Eye care	29	62
Mouth care	28	60
General hygiene	29	62
Toileting	29	62
Urinalysis	28	60
Temperature, pulse, respiration and blood pressure observations	28	60
Gynaecological observations	30	64
General observation visits	28	60
Counselling patients	28	60
General health education	32	68
Exercise advice and supervision	29	62
Rehabilitation	30	64
Mobilization	32	68
Lifting and positioning	34	72
Arranging equipment loans	30	64
Use of equipment	28	60
Organizing and running clinics	38	80
Specialist nurse liaison	32	68

\*All elements of practice were identified by study participants and, despite the apparent similarity of some items, the authors respect the nurses' descriptions of their practice.

**Table 3** Elements of community nursing work classified as social support practices

Element of practice	Number of respondents	Percentage agreement
Safety in the home	28	60
Advice on benefits and social services	28	60
Shopping	47	100
Collecting prescriptions	39	83
Paying bills	45	96
Preparing or giving meals	38	81

**Table 4** Elements of community nursing work classified as mixed clinical practices

Element of practice	Clinical-technical		Clinical-support	
	<i>n</i>	%	<i>n</i>	%
Record keeping	21	44	24	51
Parenteral nutrition	24	51	23	49
Diet and nutrition information	22	47	20	42
Ear syringing	26	56	21	44
Suture and clip removal	23	49	24	51
Pressure area care	22	47	25	53
Catheter management	22	47	25	53
Bowel care and treatment	22	47	25	53

NB: Where the rows do not total 100% (*n* = 47) the difference is accounted for by respondents allocating the item to the social-support category.

**Table 5** Elements of community nursing work classified as mixed support practices

Element of practice	Clinical-support		Social-support	
	<i>n</i>	%	<i>n</i>	%
Bereavement care	23	49	16	34
Counselling relatives	22	47	19	40
Assisting relatives	21	44	21	44
Advice to family	19	40	23	49
Reordering prescriptions	26	56	21	44
Liaison with other agencies	19	40	23	49

NB: Where the rows do not total 100% (*n* = 47) the difference is accounted for by the respondents allocating the item to the clinical-technical category.

(*n* = 32) agreement, and information from drug or product representatives with 62% (*n* = 29) agreement amongst respondents.

Observation and interview data demonstrated that although the nurses exhibited a high degree of practical

skill only two of them were able to articulate logical reasons for the decisions they had taken. The effects of past experience and situational variables were identified by all the nurses as having an important impact on the decision-making process, and both these influences were deemed to

be practice-based knowledge, with experience having 82% ( $n=39$ ) agreement and the situational context having 76% ( $n=36$ ) agreement. Another factor which all nurses identified as being an important source of influence was discussions with nurse colleagues, described as experiential knowledge by 82% ( $n=39$ ) of respondents.

### Attitudes to research

Attitudes toward research were explored through interviews with the nurses, although the study did not attempt to measure or classify them. The nurses seemed to be aware of research as a concept, but on the whole did not perceive of it informing their practice. Nursing research was categorized by 85% ( $n=40$ ) of the respondents as scientific knowledge, and the interviews showed that these nurses had difficulty accessing and appraising research reports. Respondents also identified pressure of work as a factor which militated against the implementation of research findings. Analysis of the interview data showed all nurses reporting that 'study days' were the usual means of updating their practice and these were classified by 76% ( $n=36$ ) of them as practice-based knowledge.

## DISCUSSION

The findings of this study raise some questions about the relationship between research-based knowledge and clinical practice, and suggest that the distinction between scientific and experiential knowledge is an artificial one and needs to be explored further. The findings also suggest that it is important to determine how nurses use their knowledge in different clinical situations and to uncover the processes by which 'facts' are accorded significance and incorporated into the nursing knowledge base. This is likely to become a central issue when community nurses' work includes making decisions about prescriptions.

These nurses identified 28% of their work as clinical-technical practices and, given this study's definition of 'technical', it would be reasonable to assume that these practices would be underpinned by research-based knowledge. However, the field work suggested that research did not overtly affect nursing practice. The participants identified only three out of 35 influences on the decision-making process as being research based, whilst the majority (20 out of 35) they considered to be practice-based knowledge. The apparent contradiction of this finding may be interpreted as an illustration of the problems associated with a reductionist approach, and may represent nothing more than a semantic difficulty in the instructions given to respondents.

However, the findings may also illustrate the way nursing knowledge is classified. It is conceivable that when science diffuses into nursing it is reclassified and becomes 'owned' by nurses. In this way it could be disseminated and used with no further reference to its primary source. The 20 sources of influence described as practice-based knowledge by the nurses in this study may therefore include some scientific knowledge which has been reclassified. In this case the finding may also suggest that the analytical device of separating research-based and practice-based knowledge creates an artificial distinction which inhibits the development of an integrated nursing knowledge base.

### Experiential and theoretical knowledge

Benner (1984) sought to examine the differences between experiential and theoretical knowledge and suggested that the many nursing skills which have an element of unspecifiable knowledge may be accounted for as 'intuition' or 'expertise'. An alternative view would suggest that 'intuition' is knowledge which has been integrated and embedded in long-term memory (Josefson 1987).

It is little wonder that many community nursing curricula are based on Benner's framework as it seems to account for the experience so valued by practitioners. Whilst we would not devalue clinical experience in any way, we suggest that Benner has popularized the notion of experience at the expense of science. Given nursing's recent history of importing transatlantic concepts, such as the nursing process and primary nursing, which are retrospectively justified as the 'best' approaches, it appears that a tradition is developing where evidence is secondary to fashion, a situation surely incompatible with professional nursing practice. As it is highly likely that by early 1993 qualified nurses will be prescribing, it seems important that the nature of nursing knowledge is investigated further.

The effects of knowledge and experience have been identified as significant factors in clinical decision making (Baumann & Bourbonnais 1982, Jenkins 1985, Pardue *et al.* 1987), and although the literature suggests that decision making can be described as a rational process, this study found there were many occasions when nurses made decisions with little rational deliberation. Although 35 different sources of influence were described, clinical experience and situational variables were important factors in these nurses' decision making. Both were classified as practice-based knowledge, having 82% ( $n=39$ ) and 76% ( $n=36$ ) respectively.

Given the more holistic orientation of community nursing work it was perhaps unsurprising that experiential knowledge and situational factors were frequently offered



as the rationale for 'technical' decisions. This apparent inconsistency could serve to illustrate the emphasis nurses place on clinical experience, and again raises the question about whether scientific knowledge is reclassified as experiential knowledge by practitioners. If this is the case, the finding also questions the wisdom of perpetuating an analytical distinction between research-based and practice-based knowledge.

The finding that information from drug or product representatives was described as a source of scientific knowledge by 62% ( $n = 29$ ) of the respondents could have implications for the prescribing initiative. Both the individual interviews and the group discussions highlighted the fact that drug company salesmen were an important source of influence to these nurses. Although the information imparted by corporate employees may have scientific validity, their underlying objective will inevitably be the sale of their products, and though we would not wish to imply that community nurses are any different from other members of the primary health care team, there is a danger that they could use 'drug reps' as their main source of clinical information.

#### Nursing research

In relation to the question of nursing research as a source of influence in clinical decision making it appeared that the problems encountered by these community nurses were not so different from those of their hospital counterparts. Two major difficulties related to the nurses' ability to access and use research findings, and their general attitudes towards nursing research. These ranged from the opinion that research had no relevance to community nursing work, to the view that theory and practice were related and that research was somehow necessary for 'good' patient care.

The study also found many respondents citing pressure of work and perceived support from nurse managers as important factors in determining their involvement with research. This finding is consistent with other work (Bostrom *et al.* 1989, Champion & Leach 1989) which shows individual nurses' attitudes having a significant effect on research utilization in clinical practice.

The respondents in this study also identified the characteristics of nursing research itself as an obstacle to developing research-based practice. Reasons for this may be related to the way findings are disseminated and a widespread belief that research lacks relevance to clinical practice (Myco 1981, Hunt 1981, Lelean 1982). The finding that study days were described by these nurses as being the usual means of updating their knowledge supports the view that the way research is disseminated is an important

consideration, and also highlights the need to identify the constituents of the nursing knowledge base.

Although in-service training was classified as a source of practice-based knowledge by 74% ( $n = 36$ ) of respondents, it is conceivable that community nurses are being exposed to research findings, which have been reclassified as nursing knowledge, and are therefore not aware of the extent to which research informs their practice.

Despite the problems associated with research diffusion and utilization being well defined, there does not appear to be an obvious solution. Our experience in carrying out this study leads us to suggest that progress could be made in the development of an integrated professional knowledge base if the illusion of a difference between research-based and practice-based knowledge could be dispensed with.

#### CONCLUSION

This small study aimed to explore the scope of community nursing practice and the sources of influence on clinical decisions, and although we would not seek to generalize from the findings we believe that it has raised some important questions concerning the nature of nursing knowledge.

Whilst conducting the study it was apparent that the nurses were highly skilled practitioners, yet in many circumstances they were unable to articulate the source of their knowledge. In terms of patient outcomes this may be unimportant, but if community nurses are to develop as credible practitioners there needs to be a mechanism for transmitting knowledge to new recruits.

We acknowledge the methodological limitations in taking a reductionist approach and adopting the analytical device of trying to isolate research-based and practice-based knowledge in a study of influences on clinical decisions. The apparent contradiction in the findings may have occurred because nursing has moved some way towards an integrated knowledge base which does not differentiate between experience and science. If this is the case then questions should be raised about the perpetuation of the divide between nursing practice and nursing research since, by definition, practice incorporates some research-based knowledge.

The findings suggest that, although clinical work may be underpinned by different types of knowledge, community nurses in this study were mostly influenced by what they defined as practice-based knowledge. However, it appears that there is a need for further exploration of the factors which influence clinical decision making in community nursing, and this may encompass investigation of the way research diffuses into practice. On the basis of the findings

of this exploratory work we propose to explore the mechanisms by which research findings are reclassified and integrated into the nursing knowledge base.

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## APPENDIX A: ELEMENTS OF PRACTICE DESCRIBED AND CATEGORIZED BY COMMUNITY NURSES\*

- |                                  |   |
|----------------------------------|---|
| 1. Pain assessment               | 16. Suture and clip removal   |
| 2. Pain management               | 17. Venepuncture  |
| 3. Injections                    | 18. Toileting   |
| 4. Nebulizers                    | 19. Incontinence care and treatment                                 |
| 5. Medications                   | 20. Catheter management   |
| 6. Management of syringe drivers | 21. Bowel care and treatment  |
| 7. Dressings                     | 22. General observation visits                                      |
| 8. Monitoring wound healing      | 23. Temperature, pulse, respiration and blood pressure observations |
| 9. Leg ulcer management          | 24. Gynaecological observations                                     |
| 10. Mouth care                   | 25. Diet and nutrition information                                  |
| 11. Eye care                     | 26. Dietary monitoring  |
| 12. Pressure area care           | 27. Preparing and giving meals                                      |
| 13. Urinalysis                   | 28. Parenteral nutrition  |
| 14. Blood sugar assessment       |   |
| 15. Ear syringing                |   |

APPENDIX A: *Continued.*

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|--|------------------------------------|
| 29. Rehabilitation                         | 43. Organizing and running clinics |
| 30. Mobilization                           | 44. Liaison with specialist nurses |
| 31. Lifting and positioning                | 45. Liaison with other agencies    |
| 32. Exercise advice and supervision        | 46. Teaching learner nurses        |
| 33. Counselling patients                   | 47. Arranging equipment loans      |
| 34. Counselling relatives                  | 48. Use of equipment               |
| 35. Bereavement care                       | 49. General hygiene                |
| 36. Advice to family                       | 50. Safety in the home             |
| 37. Advice on benefits and social services | 51. Stress management              |
| 38. Giving general information             | 52. Assisting relatives            |
| 39. General health education               | 53. Ordering prescriptions         |
| 40. Patient assessment                     | 54. Collecting prescriptions       |
| 41. Assessment of disease processes        | 55. Shopping                       |
| 42. Record keeping                         | 56. Paying bills                   |
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\*Despite the apparent replication of some elements of practice our attempts to group similar items were resisted by study participants. We acknowledge that each element of practice may have a distinct meaning to nurses, but these meanings were not explored in this study.

APPENDIX B: SOURCES OF INFLUENCE ON CLINICAL DECISION MAKING IDENTIFIED AND CATEGORIZED BY COMMUNITY NURSES

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- |  |  |
|--|--|
| 1. Results of published nursing research                                 | 18. Information from specialist nurses                 |
| 2. Articles in the nursing press, e.g. <i>Nursing Times</i>              | 19. Information from medical staff                     |
| 3. Results of other published research                                   | 20. Information from drug or product representatives   |
| 4. Articles in nursing journals, e.g. <i>Journal of Advanced Nursing</i> | 21. The medical diagnosis                              |
| 5. Articles in other journals, e.g. <i>British Medical Journal</i>       | 22. The plan of medical treatment                      |
| 6. Articles read in newspapers   | 23. The nursing diagnosis                              |
| 7. Items read in magazines   | 24. The plan of nursing treatment                      |
| 8. Information from health education literature                          | 25. Your intuition                                     |
| 9. Drug or product information literature                                | 26. Your 'gut' feeling about a patient or situation    |
| 10. The procedure book   | 27. Experience with similar cases                      |
| 11. Things learnt in nurse training                                      | 28. Things known about a particular patient            |
| 12. Things learnt on post-basic courses                                  | 29. Things known about a particular clinical situation |
| 13. Things learnt at university or college                               | 30. The probability of patient compliance              |
| 14. Things learnt on study days  | 31. The resources available                            |
| 15. Discussions with nurse colleagues                                    | 32. Things seen in television programmes               |
| 16. Discussions with other health professionals                          | 33. Things heard on the radio                          |
| 17. Things learnt from experienced nurses                                | 34. The policies of the employing health authority     |
|  | 35. Your general knowledge                             |
-

## **APPENDIX II**

### **CLINICAL INFORMATION PACK NUMBER ONE THE MANAGEMENT OF LEG ULCERS IN THE COMMUNITY**

# CLINICAL INFORMATION PACK

## NUMBER 1

### **THE MANAGEMENT OF LEG ULCERS IN THE COMMUNITY**

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Brenda Roe

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## BACKGROUND

The care of patients with chronic leg ulceration is a common problem often encountered by community nurses. Studies have shown that between 65% and 85% of all cases are managed exclusively by the Primary Health Care team, and the cost of this care has been estimated at around £1200 per patient per year (Callam et al 1988).

## PREVALENCE IN THE POPULATION

Two major British surveys have indicated that the prevalence of chronic leg ulceration is approximately 1% of the population. This proportion effectively means that there are around 580,000 people in Britain affected by this condition. It is estimated that around 25% of sufferers have active ulceration at any given time.

Leg ulcer patients are more likely to be female. Under the age of 50 it seems that men and women are affected equally, but above this age the preponderance amongst women gradually increases to a ratio of 7 to 1 in the very elderly (Callam et al 1985; Cornwall et al 1986).

## PATTERN OF CHRONIC LEG ULCERATION

Studies have shown that between 50% and 80% of treated ulcers may heal within a year, and yet about 75% of patients will have one or more recurrence of ulceration (Callam et al 1985; Cornwall et al 1986; Browse et al 1988).

Although a degree of circulatory disease is present in all sufferers, no single factor has been identified which will indicate how an ulcer will respond to treatment, or the likelihood of it recurring (Browse et al 1988).

## COMMON CAUSES OF LEG ULCERATION

The most common causes of leg ulceration is venous disease, but a significant proportion of leg ulcers arise from other conditions. The underlying cause has important implications for the way treatment is managed.

It has been estimated that of all leg ulcers seen approximately;

- 70% are Venous
- 8-10% are Arterial
- 10% are Mixed Venous/Arterial
- 5% are Rheumatoid
- 5% are Diabetic

Roughly 1% are attributable to such things as local trauma, infections, burns or neoplasms.

Studies have shown that most ulcers do not have a single cause. In many individuals ulceration arises from several of the above factors (Callam et al 1987b; Cherry et al 1991).

## OTHER FACTORS INFLUENCING ULCERATION

Other factors which may increase a patient's predisposition to ulceration include;

- Underlying systemic diseases
- History of vascular disease
- History of vascular surgery
- D.V.T.
- Oedema
- Prolonged immobility
- Long term steroid use
- General ill health
- Poor social and environmental circumstances
- Poor diet
- Obesity

## ESTABLISHING A DIAGNOSIS

It has been shown that the main determinant of successful leg ulcer management is a thorough assessment and accurate diagnosis of the underlying pathology (Browse et al 1988).

Misdiagnosis of an ulcer is likely to result in inappropriate treatment. This can seriously delay the healing process, but at worst may cause the patient harm.

Although the majority of leg ulcers arise from venous disorders, the presence of any arterial disease should always be excluded. The establishment of a differential diagnosis may involve Doppler assessment of arterial pressures, ultrasound scanning of valve competence or photoplethysmography of the venous circulation. Unfortunately these diagnostic facilities are not universally available and much depends on the medical and nursing examination and assessment (Cornwall 1985b; Dale and Gibson 1986).

## AIMS OF NURSING MANAGEMENT

The objectives of nursing management of leg ulcers are threefold;

- Heal the ulcer
- Treat the underlying condition
- Prevent recurrence

Achievement of these aims will require a detailed assessment of the patient and their ulcer, the selection and application of appropriate treatments and a reliable means of evaluating progress.

Long term care may include referral to medical or other services, general health education or lifestyle changes.

## THE NURSING ASSESSMENT

In the absence of a specialist ulcer service or a G.P. with a particular interest in leg ulcer care, most of the responsibility for treatment will fall on the nurse.

It is important that nurses can identify different types of ulcer and are aware of the factors which

can delay healing or affect treatment outcomes (Cornwall 1985b; Dale and Gibson 1986a).

As with any nursing treatment the assessment is important in establishing the baseline against which progress can be evaluated. Leg ulcers are unusual in that progress and outcomes can be objectively measured.

Evidence from the literature suggests that the nursing assessment should have three elements;

- Assessment of the patient's general condition
- Ulcer related history and clinical investigations
- Examination of the ulcer itself

(Cornwall 1985b; Dale and Gibson 1986a; Callam et al; Cherry et al 1991).

### **ASSESSMENT OF THE PATIENT'S GENERAL CONDITION**

Leg ulcers are more common in the elderly, have a higher incidence amongst women and have been associated with occupations involving prolonged standing. Family history may also be a predisposing factor in ulcer development

Reduced mobility contributes to ulcer development and also impairs healing.

Diet, obesity, smoking and poor general living conditions, particularly in the very old, may also exacerbate ulcers and delay healing.

Psychological status may be important in determining a patient's participation in care and compliance with the treatment regimen.

The general assessment should include a record of;

- Age
- Sex
- Family history
- Occupational history
  
- Mobility
- Diet
- Obesity
- Smoking habits
  
- General living conditions
- Psychological status

### **ULCER RELATED HISTORY AND CLINICAL INVESTIGATIONS**

The ulcer related history is important in determining appropriate treatments. Venous ulcers respond well to compression bandaging, but this treatment is contraindicated in ulcers with substantial arterial involvement.

The nurse should seek to assess the degree of arterial disease. A thorough history and some simple clinical investigations will provide enough information to ensure good practice.

### **MEDICAL AND SURGICAL HISTORY**

Patients with venous ulcers may have a history of varicose veins, phlebitis, vascular surgery or D.V.T.

A history of hypertension, angina, M.I., C.V.A., arterial surgery or intermittent claudication is suggestive of arterial involvement.

Leg ulcers on Rheumatoid or Diabetic patients are likely to be of mixed or arterial aetiology.

### **ULCER HISTORY**

Evidence of any previous ulceration, including details of onset, duration, number of episodes and treatments used will inform the assessment and assist in care planning.

### **CLINICAL INVESTIGATIONS**

Clinical examination should include B/P measurement, routine urinalysis (to exclude undiagnosed or uncontrolled diabetes), and blood screening particularly if rheumatoid disease is suspected.

### **EXAMINATION OF THE LEGS AND SKIN**

The state of the patient's circulation can to some extent be assessed by examination of the colour and warmth of the leg. Thickened and pigmented skin is usually indicative of venous ulceration, whilst cold shiny skin often suggests arterial disease.

### **FOOT PULSES**

If palpation of the dorsalis pedis and posterior tibial arteries reveals weak or absent pulses then arterial ulceration should be suspected and the patient referred for further investigation before treatment commences.

Ideally the ankle pressure index (A.P.I.) should be measured using the Doppler ultra-sound technique. Patients with a reduced A.P.I. should be referred for a further assessment before being treated with compression.

The ulcer related history should include a record of;

- Medical history
- Surgical history
- Ulcer history
  
- B/P
- Urinalysis
- Routine blood screening
  
- Examination of the leg and skin
- Foot pulses
- Doppler measurement

### **EXAMINATION OF THE ULCER**

A detailed record of the ulcer's characteristics is essential for effective evaluation of progress.

## SITE

Together with a patient's history the site of an ulcer may be indicative of the underlying pathology. Most venous ulcers are found on the lateral or medial aspects of the leg in the 'gaiter' area. Arterial ulcers may also occur in this area but are more likely elsewhere on the leg, particularly on the foot (Browse et al 1988).

## ONSET AND DURATION

The nature of onset and duration of the ulcer are important. Venous ulcers tend to progress slowly, whilst arterial involvement is usually indicated by very rapid development.

## SIZE

The size of an ulcer should be recorded either by photography, outline tracing, measurement of length and width or calculation of approximate surface area. It is important that the measuring technique employed at the assessment be used for all subsequent recordings.

## APPEARANCE AND DEPTH

Venous ulcers are often large and shallow with a poorly defined edge. Small, deep and well defined ulcers are more likely to have arterial origins.

## OEDEMA

Oedema may be evident, and with venous ulceration this is often generalised oedema which becomes worse over the course of the day. Oedema associated with arterial ulceration is more likely to be localised.

## PAIN

The pain of venous ulceration is often associated with oedema or arises from local infections or cellulitis. Pain can be relieved by support bandages and leg elevation. Many venous ulcers are not unduly painful.

In contrast, arterial ulcers are invariably painful, the typical pattern being one of pain exacerbated by exercise and leg elevation. Patients may report that pain is relieved by resting the leg and hanging it over the edge of the bed or chair.

## THE ULCER BASE

The appearance of the ulcer base should enable the nurse to determine the stage of ulcer development or healing.

At the onset of ulceration partial skin loss develops into widespread tissue necrosis [See Figure I].

Necrotic tissue and exudate may form a slough on the base of the ulcer [See Figure II].

When the ulcer has stopped enlarging, necrotic tissue separates and healthy granulation tissue begins to form on the ulcer base [See Figure III].

New epithelium grows over the granulation tissue. Re-epithelialization usually starts at the ulcer edge, but occasionally it may develop in patches over the ulcer base [See Figure IV].

Examination of the ulcer should include a record of;

- Site
- Onset
- Duration
  
- Size
- Appearance
- Depth
  
- Oedema
- Pain
- State of Ulcer Base

## NURSING TREATMENT

The aims of nursing treatment are three fold;

- Heal the ulcer
- Treat the underlying condition
- Prevent recurrence

All ulcers require a dressing and the majority can also be treated with graduated compression. For the significant minority of patients whose ulcers have a substantial arterial component compression is contraindicated.

An ulcer which fails to respond to conservative management within 4 to 8 weeks should be reassessed and referred for further investigation or specialist treatment (Dale and Gibson 1986b; Callam et al 1987).

## HEAL THE ULCER

Many preparations used for dressing leg ulcers have never been properly evaluated in clinical trials and some claims are made which have no basis in fact. Choice of ulcer dressing will depend on the nursing assessment and the cost and availability of products.

The basic principles of dressing a leg ulcer are to keep it simple, disturb as little as possible and avoid trauma at dressing changes. Care should be taken to protect the skin surrounding an ulcer.

## CLEANING

An ulcer should only be cleaned if excessive pus, slough, exudate or necrotic tissue are present. Routine cleaning can damage fragile tissues and disturb the healing process. If it is necessary to clean an ulcer warm saline should be used (Thomas 1990).

## DRESSINGS

Any dressing applied to a leg ulcer should be capable of maintaining a warm, moist





FIG I. NECROTIC ULCER



FIG II. SLOUGHY ULCER



FIG III. GRANULATING ULCER



FIG IV. EPITHELIALISING ULCER

micro-environment conducive to healing. Excessive exudate should be absorbed as this can damage surrounding skin.

Dressings must be non-adherent, non-toxic, non-allergenic and non-sensitising (Morgan 1987).

Impregnated 'paste' bandages are designed to protect the tissues and provide a degree of compression which can facilitate healing of venous ulceration. However, most of the incorporated medicaments have been found to cause allergic skin reactions (Cameron 1990).

#### CHANGING THE DRESSING

A leg ulcer dressing should be disturbed as little as possible, and except in cases of infection, excessive slough or 'strike through', a weekly change is recommended (Dale and Gibson 1986b, Callam et al 1987).

The ulcer should be measured at each dressing change. Progress can be indirectly monitored through the patient's body temperature, their reported level of comfort or discomfort, and the presence of 'strike through' on the dressing.

#### TOPICAL APPLICATIONS

Topical applications of creams, sprays or antibiotic powders should not be used as they have no proven value in ulcer healing and are a major cause of allergic skin reactions (Morgan

1987; Browse et al 1988).

In some cases the use of enzyme or chemical desloughing agents may be necessary. These must always be used with extreme caution and for the shortest possible time.

#### SKIN SENSITIVITIES

Skin sensitivities and allergic reactions are common. If they develop, any medication or impregnated dressing in use should be discontinued and replaced with a simple dressing. The presence of an allergic reaction is not always obvious but may be the reason for delayed healing. It may be necessary to refer the patient for 'patch testing' or dermatological advice (Cameron 1990).

#### PAIN

A particularly painful ulcer may respond to bed-rest, hydrogels/hydrocolloids and analgesia.

In cases where eczema or cellulitis occur the patient should be referred for medical advice on appropriate steroid preparations or systemic antibiotics (Morgan 1987; Browse et al 1988).

#### SUMMARY

The ideal leg ulcer dressing is one which;

- is simple and non-adherent
- is non-allergenic

- absorbs excessive exudate
- protects surrounding skin
- provides correct micro environment

Once applied the dressing should be disturbed as infrequently as possible.

The nurse should;

- avoid routine cleaning
- avoid topical applications
- redress and measure weekly
- control pain
- evaluate and refer

### TREAT THE UNDERLYING CONDITION

Severe oedema is a common problem associated with leg ulceration and it may be necessary to reduce it by rest and elevation before the differential assessment can be made.

### VENOUS ULCERATION

If arterial involvement has been excluded the underlying venous disorder must be treated with compression bandaging, exercise and leg elevation.

### COMPRESSION BANDAGING

Graduated compression bandaging has been shown to improve calf muscle pump function and venous return (Cornwall 1988; Browse et al 1988). The amount of compression required will vary with individual patients. In general venous ulcers require bandages designed to give moderate or firm compression.

The amount of pressure required for therapeutic compression is debatable, but between 20 - 40 mm/Hg at the ankle graduating to 50% of that value at the knee is generally recommended (Dale and Gibson 1987; Cornwall 1988; Cherry et al 1991).

A compression bandage should be anchored at the base of the toes, exert maximum pressure over the ankle and finish at the knee. Type of bandage used and individual technique will affect the amount of compression achieved. Studies have shown that 'figure of eight' bandaging is more effective than the simple spiral and less prone to slipping (Dale and Gibson 1987; Cornwall 1988).

Many bandages are not able to exert therapeutic pressures in mobile patients, and it is advisable to use compression and paste bandages together. To prevent slippage it may also be necessary to apply a stocking on top of the compression bandage.

Manufacturers instructions for application should be followed. Bandages which are incorrectly applied have no therapeutic value at all

### EXERCISE

The calf muscle is best exercised by walking. In

the immobile patient regular flexion and extension of the ankle joint is beneficial.

### ELEVATION

To facilitate venous return from the legs, patients should be encouraged to rest with their legs elevated above the level of the hips.

### ARTERIAL AND MIXED ULCERATION

In ulcers where an arterial or mixed aetiology is suspected it is good practice to get a specialist opinion of the degree of arterial disease. Unless advised to the contrary mixed ulcers should be treated as arterial.

Compression must not be used on ulcers with a substantial arterial component, only light retaining bandages should be applied.

Mild exercise and ankle movements should be encouraged, particularly if the patient is immobile.

Pain control may be achieved through rest, hydrocolloid/hydrogel dressings and analgesia (Cornwall 1986; Dale and Gibson 1986b; Cherry et al 1991).

In the long term patients with arterial ulceration should be referred for a surgical opinion.

### DIABETIC AND RHEUMATOID ULCERATION

These conditions account for a small proportion of leg ulcers and yet both are very difficult to manage. Typically diabetic and rheumatoid leg ulcers have substantial arterial involvement arising from the peripheral vascular changes associated with these diseases.

In rheumatoid ulceration the assessment may show no discernable sign of circulatory disorders and diabetic ulceration may be complicated by peripheral neuropathy.

If either of these conditions are suspected but undiagnosed then referral is essential.

Both diabetic and rheumatoid ulceration should be treated as arterial, with rest, pain control, monitoring the associated disease process and referral if necessary (Browse et al 1988).

### SUMMARY

Whatever the underlying condition all treatments will be affected by individual differences. Rates of healing will vary between patients, but any ulcer not responding to treatment after 4 - 8 weeks should be reassessed. It may be necessary to refer the patient for further investigations (Callam et al 1987; Browse et al 1988).

### PREVENT RECURRENCE

Approximately 75% of patients will suffer recurrence of ulceration (Cornwall and Lewis 1986; Callam et al 1987; Browse et al 1988), though it may be possible to improve on this figure with the development of new treatments.

Preventative measures should commence when

nursing assessment is made, particularly if these are likely to involve patient re-education.

In the case of healed venous ulcers protection and support are necessary. The patient may need advice on exercise, weight control and skin care. In some cases surgery may be indicated.

Continued compression is likely to be most beneficial. Three classes of compression hosiery are available on prescription.

- Class I – Light support giving ankle pressures between 14 - 17 mm Hg
- Class II – Medium support giving ankle pressures between 18 - 24 mm/Hg
- Class III – Firm support giving ankle pressures between 25 - 35 mm/Hg

Selection of hosiery will depend on the patient's leg size and the degree of compression required (Dale and Gibson 1989). Accurate hosiery sizing and fitting is essential.

In the long term, prevention of arterial ulcer recurrence may depend on surgical sympathectomy or vascular reconstructive surgery. A lifestyle change may be indicated and advice on diet, exercise and smoking habits could be useful.

Any underlying disease process such as diabetes or rheumatoid arthritis will require continued monitoring.

The high rate of ulcer recurrence makes it advisable to continue long term observation of the patient.

Prevention of ulcer recurrence should include;

- Protection and support
- Compression hosiery
- Exercise and mobility
- Health education
- Surgical referral
- Continued observation

#### SUMMARY OF RECOMMENDED PRACTICE

The majority of leg ulcers arise from venous disorders, but a significant minority have underlying arterial disease. The presence of arterial disease should always be excluded before applying any treatment.

The key to successful nursing management is assessment and evaluation, with appropriate referral if necessary.

#### THE NURSING ASSESSMENT

Should give a good social and clinical picture and provide the basis for evaluation of progress. Records should include;

#### A GENERAL HISTORY

- Personal and family history
- Social habits

- General living conditions
- Psychological status

#### AN ULCER RELATED HISTORY

- Medical history
- Surgical history
- Ulcer history
  
- B P measurement
- Urinalysis
- Routine blood screening
  
- Examination of the legs and skin
- Foot pulses
- Doppler measurement

#### EXAMINATION OF THE ULCER

- Site
- Onset
- Duration
  
- Size
- Appearance
- Depth
  
- Oedema
- Pain
- The ulcer base

Regular examination and measurement are essential for evaluating progress

#### NURSING TREATMENT

If arterial involvement is suspected advice on appropriate treatment should be sought.

#### HEAL THE ULCER

All ulcers will require a dressing, ideally one which;

- is simple and non-adherent
- is non-allergic
- absorbs excessive exudate
- protects surrounding skin
- provides correct micro environment

Once applied the dressing should be disturbed as infrequently as possible. It is recommended that nurses;

- avoid routine cleaning
- avoid topical applications
- redress and measure weekly
- control pain
- evaluate and refer

#### TREAT THE UNDERLYING CONDITION

First assess arterial involvement, ideally with Doppler measurement, and if in doubt refer.

VENOUS ULCERATION – Improvement in calf muscle pump function and venous return is best achieved by;

- Graduated compression
- Exercise and mobility
- Leg elevation

ARTERIAL AND MIXED ULCERATION – Amount of compression applied depends entirely upon the degree of arterial involvement. Unless advised otherwise treat mixed ulcers as arterial with;

- Rest
- Mild exercise
- Pain control

DIABETIC AND RHEUMATOID ULCERATION- are difficult to manage. If either disease is suspected but not diagnosed referral is essential. Treat with;

- Rest
- Pain control
- Monitoring underlying diseases

#### PREVENT RECURRENCE

Preventative measures include;

- Support and protection
- Compression hosiery
- Exercise and mobility
- Health Education
- Surgical referral
- Continued observation.

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## **APPENDIX III**

### **PRE-TEST QUESTIONNAIRE, EXPERIMENTAL AND CONTROL GROUPS**

PERSONAL NUMBER =

As you are probably aware "Leg Ulcers" are in the news at the moment, and it seems there is a great deal of conflicting information about appropriate methods of care and treatment.

We too are interested in the care of patients with leg ulcers and in this survey we are trying to get a picture of what district nurses in this region actually do when they are looking after these patients. At the same time we are also interested in looking at the factors which district nurses feel exert an influence on the way they carry out their practice.

In order to look at these two things you will see that some of the following questions are in two parts, these should be answered as follows;

In **PART a)** would you please write down briefly what you **ACTUALLY DO** in each clinical situation.

In **PART b)** please write down what you **WOULD DO DIFFERENTLY** (if anything) in an "ideal" situation where you had unlimited time and resources with which to do your work.

Please answer as fully as you can. All the information you give us will be treated in the **strictest confidence** and will be used only for the purpose of this survey.

Although you are under no obligation to identify yourself by name it is important that you remember your **Personal Number** at the top of this page.

**PLEASE MAKE A NOTE OF THIS NUMBER AS YOU WILL NEED IT FOR THE SECOND PART OF THE SURVEY.**

**SECTION ONE;**

THE FOLLOWING QUESTIONS ARE ABOUT YOURSELF AND YOUR WORK.  
PLEASE CONSIDER EACH ONE AND TICK THE APPROPRIATE ANSWER.

1. WHERE DO YOU WORK?

HEALTH AUTHORITY (NAME) \_\_\_\_\_

LOCALITY/WORK BASE \_\_\_\_\_

2. WHICH QUALIFICATIONS DO YOU HOLD (TICK ALL WHICH APPLY).

S.R.N./R.G.N.

Q.N./ D.N.CERTIFICATE

P.W.T./C.P.T.

E.N.B. COURSE(S)

UNIVERSITY DEGREE(S)

OTHER (PLEASE SPECIFY)

\_\_\_\_\_

\_\_\_\_\_

3. WHEN DID YOU QUALIFY AS A DISTRICT NURSE?

(YEAR) 19 \_\_\_\_\_

4. HOW LONG HAVE YOU WORKED AS A DISTRICT NURSE? :

- LESS THAN 1 YEAR
- 1 - 5 YEARS
- 6 - 10 YEARS
- 11 - 20 YEARS
- MORE THAN 20 YEARS

5. DO YOU WORK FULL TIME OR PART TIME?

- FULL TIME
- PART TIME (MORE THAN 20 HOURS)
- PART TIME (LESS THAN 20 HOURS)

6. WHICH AGE GROUP ARE YOU IN?

- 20 - 29
- 30 - 39
- 40 - 49
- 50 - 59
- 60 AND OVER

7. APPROXIMATELY HOW MANY OF YOUR PATIENTS HAVE LEG ULCERS?

NUMBER



8. WITHIN YOUR HEALTH DISTRICT WHO IS THE "EXPERT" IN LEG ULCER MANAGEMENT? (TICK ALL WHICH APPLY).

- A LEG ULCER CLINIC
- A COMPANY REP WHO VISITS REGULARLY
- I HAVE A SPECIAL INTEREST IN LEG ULCERS
- MY G.P. HAS A SPECIAL INTEREST
- A COLLEAGUE HAS A SPECIAL INTEREST
- A SPECIALIST ULCER NURSE
- A HOSPITAL CONSULTANT
- THERE IS NO RECOGNISED "EXPERT"

9. IN THE LAST YEAR HAVE YOU READ ANYTHING ABOUT LEG ULCERS? (TICK ALL WHICH APPLY)

- NO I HAVEN'T
  - BOOKS
  - JOURNAL ARTICLES
  - INFORMATION FROM DRUG REPS
  - OTHER (PLEASE SPECIFY) \_\_\_\_\_
- 

10. IN THE LAST YEAR HAVE YOU ATTENDED ANY COURSES ABOUT LEG ULCERS? (TICK ALL WHICH APPLY)

- NO I HAVEN'T
  - HEALTH AUTHORITY STUDY DAYS
  - DRUG COMPANY DEMONSTRATIONS
  - VISITS TO LEG ULCER CLINICS
  - STUDY DAYS AT COLLEGE OR UNIVERSITY
  - OTHER (PLEASE SPECIFY) \_\_\_\_\_
-

11. IN CARING FOR YOUR PATIENTS WITH LEG ULCERS DO YOU EVER FEEL CONSTRAINED BY ANY OF THE FOLLOWING? (TICK ALL WHICH APPLY)

- TOO BIG A CASELOAD
- UNDERSTAFFING
- PRESSURES FROM NURSE MANAGERS
- PATIENT NON-COMPLIANCE
- PATIENT'S LIFESTYLE
- PRESSURES FROM G.P.
- TOO FEW RESOURCES
- UNABLE TO GET SUPPLIES
- UNABLE TO GET PREFERRED PRODUCTS
- NOT ENOUGH INFORMATION AVAILABLE
- LACK OF EXPERIENCE IN LEG ULCER CARE
- CONSULTANTS INSTRUCTIONS
- NONE OF THESE
- OTHER (PLEASE SPECIFY)

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**SECTION 2:**

IN PART a) PLEASE WRITE BRIEFLY WHAT YOU ACTUALLY DO IN EACH SITUATION AND IN PART b) WHAT YOU WOULD DO DIFFERENTLY (IF ANYTHING) IN AN "IDEAL" SITUATION.

**QUESTION 1:**

(a) WHEN A PATIENT WITH A LEG ULCER IS REFERRED TO YOUR CARE AND YOU ARE MAKING YOUR GENERAL NURSING ASSESSMENT, WHAT DO YOU LOOK FOR AND RECORD IN YOUR NOTES.

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(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?

YES

NO

IF YES PLEASE STATE;

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**QUESTION 2;**

**(a) WHEN EXAMINING THE PATIENT'S LEG(S) WHAT DO YOU LOOK FOR AND RECORD IN YOUR NOTES?**

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**(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?**

YES

NO

**IF YES PLEASE STATE;**

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**QUESTION 3;**

**(a) WHEN EXAMINING THE ULCER ITSELF WHAT DO YOU LOOK FOR AND RECORD IN YOUR NOTES?**

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**(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?**

YES

NO

**IF YES PLEASE STATE;**

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**QUESTION 4;**

**(a) WHEN MAKING YOUR NURSING ASSESSMENT OF PATIENTS WITH LEG ULCERS WHICH CLINICAL INVESTIGATIONS DO YOU ROUTINELY CARRY OUT?**

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**(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?**

YES           

NO            

**IF YES PLEASE STATE;**

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**QUESTION 5;**

DO YOU KNOW WHAT THE STAGES OF ULCER DEVELOPMENT AND HEALING ARE?

YES   
NO

IF YES PLEASE STATE;

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**QUESTION 6;**

WHICH SOLUTION(S) DO YOU USUALLY USE TO CLEANSE ULCERS?  
(TICK ALL WHICH APPLY)

I DON'T USE SOLUTIONS   
SALINE   
WARMED SALINE   
CETRIMIDE   
HYPOCHLORITE   
HYDROGEN PEROXIDE   
CHLORHEXIDINE   
POTASSIUM PERMANGANATE   
OTHER (PLEASE SPECIFY)

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**QUESTION 7;**

WHEN SELECTING THE DRESSING WHICH IS GOING TO BE IN DIRECT CONTACT WITH A LEG ULCER WHAT FEATURES DO YOU LOOK FOR IN THE PRODUCT?

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**QUESTION 8;**

(a) HOW DO YOU DECIDE WHEN AN ULCER DRESSING NEEDS CHANGING?

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(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?

YES   
NO

IF YES PLEASE STATE;

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**QUESTION 9;**

ON WHICH TYPES OF ULCER DO YOU USE COMPRESSION BANDAGING?

- ALL ULCERS
- VENOUS ULCERS
- ARTERIAL ULCERS
- MIXED ULCERS
- DIABETIC ULCERS
- RHEUMATOID ULCERS
- I NEVER USE COMPRESSION

**QUESTION 10;**

(a) IF YOU ARE TREATING A PATIENT WITH COMPRESSION WHICH PRODUCTS AND TECHNIQUES DO YOU USE? (PLEASE GIVE EXAMPLES)

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(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?

- YES
- NO

IF YES PLEASE STATE;

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**QUESTION 11;**

**(a) BESIDES THE DRESSINGS WHAT OTHER GENERAL CARE AND ADVICE DO YOU GIVE TO ALL YOUR PATIENTS WITH LEG ULCERS?**

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**(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?**

YES	<input type="checkbox"/>
NO	<input type="checkbox"/>

**IF YES PLEASE STATE;**

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**QUESTION 12;**

**(a) BESIDES THE DRESSINGS WHAT SPECIFIC CARE AND ADVICE DO YOU GIVE TO PATIENTS WITH VENOUS ULCERS?**

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**(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?**

YES           

NO             

**IF YES PLEASE STATE;**

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**QUESTION 13;**

**(a) BESIDES THE DRESSINGS WHAT SPECIFIC CARE AND ADVICE DO YOU GIVE TO PATIENTS WITH ARTERIAL AND MIXED ULCERS?**

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**(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?**

YES     

NO       

**IF YES PLEASE STATE;**

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**QUESTION 14;**

**(a) BESIDES THE DRESSINGS WHAT SPECIFIC CARE AND ADVICE DO YOU GIVE TO PATIENTS WITH DIABETIC AND RHEUMATOID ULCERS?**

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**(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?**

YES     

NO       

**IF YES PLEASE STATE;**

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**QUESTION 15;**

DO YOU KNOW WHAT THE CAUSES OF ALLERGIC REACTIONS IN LEG  
ULCER PATIENTS ARE?

YES

NO

**IF YES PLEASE STATE;**

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**QUESTION 16;**

**(a) HOW DO YOU MONITOR THE PROGRESS OF AN ULCER WHICH YOU ARE TREATING?**

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**(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?**

YES

NO

**IF YES PLEASE STATE;**

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**QUESTION 17;**

**(a) WHAT DO YOU USUALLY DO IF AN ULCER DOES NOT APPEAR TO BE HEALING?**

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**(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?**

YES     

NO       

**IF YES PLEASE STATE;**

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**QUESTION 18;**

IF AN ULCER DOES NOT APPEAR TO BE HEALING HOW LONG DO YOU TREAT IT YOURSELF BEFORE SEEKING SPECIALIST ADVICE?

- 1 - 3 WEEKS
- 4 - 8 WEEKS
- 9 - 12 WEEKS
- MORE THAN 12 WEEKS
- I DON'T USUALLY REFER

**QUESTION 19;**

**(a) IF YOU ARE SUCCESSFUL IN HEALING A PATIENT'S LEG ULCER WHAT MEASURES (IF ANY) DO YOU TAKE TO PREVENT RECURRENCE?**

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**(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?**

- YES
- NO

IF YES PLEASE STATE;

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**\* THANK YOU VERY MUCH FOR YOUR HELP \***

ALTHOUGH ALL THE INFORMATION IN THIS SURVEY IS CONFIDENTIAL  
WE ARE VERY INTERESTED IN HEARING DISTRICT NURSES OPINIONS  
ABOUT THIS SURVEY AND THE INFORMATION PACKS.

IF YOU WOULD BE PREPARED TO DISCUSS YOUR VIEWS AT A FUTURE  
DATE PLEASE WRITE YOUR NAME AND A NUMBER WHERE YOU MAY BE  
CONTACTED. ALL INTERVIEWS WILL BE BY APPOINTMENT AND AT  
YOUR CONVENIENCE.

NAME .....

CONTACT NUMBER .....

## **APPENDIX IV**

### **POST-TEST QUESTIONNAIRE, EXPERIMENTAL GROUP**

Please insert your **PERSONAL NUMBER** from the first part of the survey;

PERSONAL NUMBER =
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Some weeks ago you completed the first part of this survey about the care of patients with leg ulcers. You will also have received a copy of the Clinical Information Pack.

Today we would like you to evaluate the pack for us, and tell us if it has helped you in any way.

Most of the questions require you to tick a box, but the ones relating to your own practice are in two parts, these should be answered as follows;

In **PART a)** would you please write down briefly what you **ACTUALLY DO** in each clinical situation.

In **PART b)** please write down what you **WOULD DO DIFFERENTLY** (if anything) in an "ideal" situation where you had unlimited time and resources with which to do your work.

Please answer as fully and frankly as you can. The information you give us will be important in helping to determine whether more Clinical Information Packs are produced. All your answers will be treated in the **strictest confidence** and will be used only for the purpose of this survey.

**SECTION ONE;**

THE FOLLOWING QUESTIONS ARE ABOUT YOURSELF AND YOUR WORK.  
PLEASE CONSIDER EACH ONE AND TICK THE APPROPRIATE ANSWER.

1. WHERE DO YOU WORK?

HEALTH AUTHORITY (NAME) \_\_\_\_\_

LOCALITY/WORK BASE \_\_\_\_\_

2. DO YOU WORK FULL TIME OR PART TIME?

FULL TIME

PART TIME (MORE THAN 20 HOURS)

PART TIME (LESS THAN 20 HOURS)

3. APPROXIMATELY HOW MANY OF YOUR PATIENTS HAVE LEG ULCERS?

NUMBER

4. SINCE RECEIVING THE CLINICAL INFORMATION PACK HAVE YOU  
TAKEN ON THE CARE OF ANY NEW PATIENTS WITH LEG ULCERS?

YES

NO

5. SINCE RECEIVING THE CLINICAL INFORMATION PACK HAVE YOU  
ATTENDED ANY COURSES RELATED TO LEG ULCERS? (TICK ALL  
WHICH APPLY)

NO I HAVEN'T

HEALTH AUTHORITY STUDY DAYS

DRUG COMPANY DEMONSTRATIONS

VISITS TO LEG ULCER CLINICS

STUDY DAYS AT COLLEGE OR UNIVERSITY

OTHER (PLEASE SPECIFY) \_\_\_\_\_

**SECTION 2:**

**IN PART a) PLEASE WRITE BRIEFLY WHAT YOU ACTUALLY DO IN EACH SITUATION AND IN PART b) WHAT YOU WOULD DO DIFFERENTLY (IF ANYTHING) IN AN "IDEAL" SITUATION.**

**QUESTION 1:**

**(a) WHEN A PATIENT WITH A LEG ULCER IS REFERRED TO YOUR CARE AND YOU ARE MAKING YOUR GENERAL NURSING ASSESSMENT, WHAT DO YOU LOOK FOR AND RECORD IN YOUR NOTES.**

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**(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?**

YES

NO

**IF YES PLEASE STATE;**

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**QUESTION 2;**

**(a) WHEN EXAMINING THE PATIENT'S LEG(S) WHAT DO YOU LOOK FOR AND RECORD IN YOUR NOTES?**

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**(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?**

YES

NO

**IF YES PLEASE STATE;**

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**QUESTION 3;**

**(a) WHEN EXAMINING THE ULCER ITSELF WHAT DO YOU LOOK FOR AND RECORD IN YOUR NOTES?**

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**(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?**

YES

NO

**IF YES PLEASE STATE;**

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**QUESTION 4;**

**(a) WHEN MAKING YOUR NURSING ASSESSMENT OF PATIENTS WITH LEG ULCERS WHICH CLINICAL INVESTIGATIONS DO YOU ROUTINELY CARRY OUT?**

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**(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?**

YES     

NO       

**IF YES PLEASE STATE;**

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**QUESTION 5;**

DO YOU KNOW WHAT THE STAGES OF ULCER DEVELOPMENT AND HEALING ARE?

YES

NO

IF YES PLEASE STATE;

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**QUESTION 6;**

WHICH SOLUTION(S) DO YOU USUALLY USE TO CLEANSE ULCERS?  
(TICK ALL WHICH APPLY)

I DON'T USE SOLUTIONS

SALINE

WARMED SALINE

CETRIMIDE

HYPOCHLORITE

HYDROGEN PEROXIDE

CHLORHEXIDINE

POTASSIUM PERMANGANATE

OTHER (PLEASE SPECIFY)

**QUESTION 7;**

**WHEN SELECTING THE DRESSING WHICH IS GOING TO BE IN DIRECT CONTACT WITH A LEG ULCER WHAT FEATURES DO YOU LOOK FOR IN THE PRODUCT?**

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**QUESTION 8;**

**(a) HOW DO YOU DECIDE WHEN AN ULCER DRESSING NEEDS CHANGING?**

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**(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?**

YES

NO

**IF YES PLEASE STATE;**

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**QUESTION 9;**

ON WHICH TYPES OF ULCER DO YOU USE COMPRESSION BANDAGING?

ALL ULCERS

VENOUS ULCERS

ARTERIAL ULCERS

MIXED ULCERS

DIABETIC ULCERS

RHEUMATOID ULCERS

I NEVER USE COMPRESSION

**QUESTION 10;**

(a) IF YOU ARE TREATING A PATIENT WITH COMPRESSION WHICH PRODUCTS AND TECHNIQUES DO YOU USE? (PLEASE GIVE EXAMPLES)

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(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?

YES

NO

IF YES PLEASE STATE;

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**QUESTION 11;**

**(a) BESIDES THE DRESSINGS WHAT OTHER GENERAL CARE AND ADVICE DO YOU GIVE TO ALL YOUR PATIENTS WITH LEG ULCERS?**

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**(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?**

YES     

NO       

**IF YES PLEASE STATE;**

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**QUESTION 12;**

**(a) BESIDES THE DRESSINGS WHAT SPECIFIC CARE AND ADVICE DO YOU GIVE TO PATIENTS WITH VENOUS ULCERS?**

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**(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?**

YES     

NO       

**IF YES PLEASE STATE;**

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**QUESTION 13;**

**(a) BESIDES THE DRESSINGS WHAT SPECIFIC CARE AND ADVICE DO YOU GIVE TO PATIENTS WITH ARTERIAL AND MIXED ULCERS?**

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**(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?**

YES     

NO       

**IF YES PLEASE STATE;**

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**QUESTION 14;**

**(a) BESIDES THE DRESSINGS WHAT SPECIFIC CARE AND ADVICE DO YOU GIVE TO PATIENTS WITH DIABETIC AND RHEUMATOID ULCERS?**

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**(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?**

YES     

NO       

**IF YES PLEASE STATE;**

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**QUESTION 15;**

**DO YOU KNOW WHAT THE CAUSES OF ALLERGIC REACTIONS IN LEG  
ULCER PATIENTS ARE?**

**YES**

**NO**

**IF YES PLEASE STATE;**

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**QUESTION 16;**

**(a) HOW DO YOU MONITOR THE PROGRESS OF AN ULCER WHICH YOU ARE TREATING?**

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**(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?**

YES     

NO       

**IF YES PLEASE STATE;**

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**QUESTION 17;**

**(a) WHAT DO YOU USUALLY DO IF AN ULCER DOES NOT APPEAR TO BE HEALING?**

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**(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?**

YES

NO

**IF YES PLEASE STATE;**

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**QUESTION 18;**

IF AN ULCER DOES NOT APPEAR TO BE HEALING HOW LONG DO YOU TREAT IT YOURSELF BEFORE SEEKING SPECIALIST ADVICE?

1 - 3 WEEKS

4 - 8 WEEKS

9 - 12 WEEKS

MORE THAN 12 WEEKS

I DON'T USUALLY REFER

**QUESTION 19;**

(a) IF YOU ARE SUCCESSFUL IN HEALING A PATIENT'S LEG ULCER WHAT MEASURES (IF ANY) DO YOU TAKE TO PREVENT RECURRENCE?

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(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?

YES

NO

IF YES PLEASE STATE;

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**SECTION THREE:**

PLEASE READ EACH QUESTION AND TICK THE APPROPRIATE BOX. IF YOU WISH TO MAKE COMMENTS PLEASE USE THE SPACES PROVIDED.

**1; DID YOU USE THE CLINICAL INFORMATION PACK?**

- YES - BOTH THE TEXT & CASSETTE
- YES - I READ THE TEXT ONLY
- YES - I LISTENED TO THE TAPE ONLY
- NO - I DIDN'T USE EITHER OF THEM

IF NO PLEASE STATE WHY YOU WERE UNABLE TO USE THE PACK;

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IF YOU DID NOT USE ANY PART OF THE INFORMATION PACK  
OMIT THE FOLLOWING QUESTIONS

**2; OVERALL, WHAT DID YOU THINK OF THE PACKAGING AND PRESENTATION OF THE CLINICAL INFORMATION PACK?**

- ON THE WHOLE VERY GOOD
- ON THE WHOLE QUITE GOOD
- ON THE WHOLE QUITE POOR
- ON THE WHOLE VERY POOR

COMMENTS ABOUT PACKAGING & PRESENTATION (IF ANY)

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3; OVERALL, DID YOU FIND THE CLINICAL INFORMATION PACKAGE HELPED YOUR UNDERSTANDING OF LEG ULCERS IN ANY WAY?

- YES IT WAS VERY HELPFUL INDEED
- YES IT WAS QUITE HELPFUL
- NO IT WAS NOT REALLY HELPFUL
- NO IT WAS NOT HELPFUL AT ALL

IF YOU WISH TO MAKE ANY COMMENTS ABOUT HOW THE PACK HELPED OR DIDN'T HELP YOUR UNDERSTANDING OF LEG ULCERS PLEASE WRITE HERE;

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4; OVERALL, DID YOU FIND THE CLINICAL INFORMATION PACKAGE HELPED YOUR NURSING PRACTICE IN ANY WAY?

- YES IT WAS VERY HELPFUL INDEED
- YES IT WAS QUITE HELPFUL
- NO IT WAS NOT REALLY HELPFUL
- NO IT WAS NOT HELPFUL AT ALL

IF YOU WISH TO MAKE ANY COMMENTS ABOUT HOW THE PACK HELPED OR DIDN'T HELP YOUR PRACTICE PLEASE WRITE HERE;

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5; DID THE CLINICAL INFORMATION PACK CONTAIN ANY INFORMATION WHICH YOU HAD NOT COME ACROSS BEFORE?

YES - NEARLY ALL THE INFORMATION WAS NEW TO ME

YES - SOME OF THE INFORMATION WAS NEW TO ME

NO - I WAS FAMILIAR WITH A LOT OF THE INFORMATION

NO - I WAS FAMILIAR WITH ALL THE INFORMATION

6; OVERALL, DID YOU PREFER THE CLINICAL INFORMATION IN THE WRITTEN TEXT OR THE AUDIO CASSETTE FORMAT?

I PREFERRED THE WRITTEN TEXT

I PREFERRED THE AUDIO CASSETTE

I LIKED THEM BOTH EQUALLY

I DIDN'T LIKE EITHER OF THEM

IF YOU DID NOT READ THE WRITTEN TEXT OMIT THE FOLLOWING QUESTIONS AND GO STRAIGHT TO QUESTION 10

7; WHAT DID YOU THINK OF THE WAY THE TEXT WAS WRITTEN AND PRESENTED?

ON THE WHOLE VERY GOOD

ON THE WHOLE QUITE GOOD

ON THE WHOLE QUITE POOR

ON THE WHOLE VERY POOR

COMMENTS ABOUT THE TEXT (IF ANY)

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**8; WHAT DID YOU THINK ABOUT THE ORDER IN WHICH THE WRITTEN INFORMATION WAS ARRANGED AND PRESENTED?**

ON THE WHOLE VERY GOOD

ON THE WHOLE QUITE GOOD

ON THE WHOLE QUITE POOR

ON THE WHOLE VERY POOR

**COMMENTS ABOUT THE ORDER OF THE TEXT (IF ANY)**

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**9; WAS THERE ANY INFORMATION ABOUT LEG ULCERS WHICH WAS NOT IN THE TEXT WHICH YOU THINK SHOULD HAVE BEEN INCLUDED?**

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**IF YOU DID NOT USE THE CASSETTE TAPE OMIT THE FOLLOWING QUESTIONS AND GO STRAIGHT TO QUESTION 13**



**10; ON THE WHOLE, DID YOU LIKE THE INFORMATION ABOUT LEG ULCERS PRESENTED ON AN AUDIO CASSETTE?**

- YES - I LIKED IT VERY MUCH
- YES - IT WAS ALRIGHT
- NO - I DIDN'T LIKE IT MUCH
- NO - IT WAS AWFUL

**11; OVERALL WHAT DID YOU THINK OF THE WAY THE AUDIO CASSETTE WAS PRESENTED?**

- ON THE WHOLE VERY GOOD
- ON THE WHOLE FAIRLY GOOD
- ON THE WHOLE QUITE POOR
- ON THE WHOLE VERY POOR

**COMMENTS ABOUT THE CASSETTE (IF ANY)**

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**12; WAS THERE ANY INFORMATION ABOUT LEG ULCERS WHICH WAS NOT ON THE CASSETTE WHICH YOU THINK SHOULD HAVE BEEN INCLUDED?**

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**13; CONSIDERING THE CLINICAL INFORMATION PACK AS A WHOLE  
WHAT DID YOU LIKE BEST ABOUT IT?**

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**14; CONSIDERING THE CLINICAL INFORMATION PACK AS A WHOLE  
WHAT DID YOU LIKE LEAST ABOUT IT?**

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**15; IN YOUR OPINION WHAT CHANGES COULD BE MADE TO IMPROVE  
THE CLINICAL INFORMATION PACK?**

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\* THANK YOU VERY MUCH FOR YOUR HELP AND \*  
\* PARTICIPATION IN THIS SURVEY \*

ALTHOUGH ALL THE INFORMATION IN THIS SURVEY IS STRICTLY CONFIDENTIAL WE ARE VERY INTERESTED IN A MORE DETAILED DISCUSSION OF DISTRICT NURSES OPINIONS ABOUT THIS SURVEY AND THE CLINICAL INFORMATION PACKS.

IF YOU WOULD BE PREPARED TO DISCUSS YOUR VIEWS AT A FUTURE DATE PLEASE WRITE YOUR NAME AND A TELEPHONE NUMBER WHERE YOU MAY BE CONTACTED.

INTERVIEWS WILL BE BEING CONDUCTED IN ABOUT SIX WEEKS TIME AND WILL BE BY APPOINTMENT AND AT YOUR CONVENIENCE.

NAME .....

TELEPHONE NUMBER .....

:

**APPENDIX V**  
**POST-TEST QUESTIONNAIRE,**  
**CONTROL GROUP**

Please insert your **PERSONAL NUMBER** from the first part of the survey;

PERSONAL NUMBER =
-------------------

Some weeks ago you completed the first part of this survey about the care of patients with leg ulcers.

Today we would like you to answer the questions again, so that we can see if completing the questionnaire has had any effect on your practice.

Some of the questions require you to tick a box, but the ones relating to your own practice are as before and are in two parts, these should be answered as follows;

In **PART a)** would you please write down briefly what you **ACTUALLY DO** in each clinical situation.

In **PART b)** please write down what you **WOULD DO DIFFERENTLY** (if anything) in an "ideal" situation where you had unlimited time and resources with which to do your work.

Please answer as fully and frankly as you can. Although you have not yet had your copy of the Clinical Information pack, the information you give us will be important in helping to determine whether more packs are produced. All your answers will be treated in the **strictest confidence** and will be used only for the purpose of this survey.

**At the end of this session we will be giving you your copy of the Clinical Information Pack relating to the management of Leg Ulcers in the community.**

**SECTION ONE;**

THE FOLLOWING QUESTIONS ARE ABOUT YOURSELF AND YOUR WORK.  
PLEASE CONSIDER EACH ONE AND TICK THE APPROPRIATE ANSWER.

1. WHERE DO YOU WORK?

HEALTH AUTHORITY (NAME) \_\_\_\_\_

LOCALITY/WORK BASE \_\_\_\_\_

2. DO YOU WORK FULL TIME OR PART TIME?

FULL TIME

PART TIME (MORE THAN 20 HOURS)

PART TIME (LESS THAN 20 HOURS)

3. APPROXIMATELY HOW MANY OF YOUR PATIENTS HAVE LEG ULCERS?

NUMBER

4. SINCE RECEIVING THE CLINICAL INFORMATION PACK HAVE YOU  
TAKEN ON THE CARE OF ANY NEW PATIENTS WITH LEG ULCERS?

YES

NO

5. SINCE RECEIVING THE CLINICAL INFORMATION PACK HAVE YOU  
ATTENDED ANY COURSES RELATED TO LEG ULCERS? (TICK ALL  
WHICH APPLY)

NO I HAVEN'T

HEALTH AUTHORITY STUDY DAYS

DRUG COMPANY DEMONSTRATIONS

VISITS TO LEG ULCER CLINICS

STUDY DAYS AT COLLEGE OR UNIVERSITY

OTHER (PLEASE SPECIFY) \_\_\_\_\_

**SECTION 2:**

IN PART a) PLEASE WRITE BRIEFLY WHAT YOU ACTUALLY DO IN EACH SITUATION AND IN PART b) WHAT YOU WOULD DO DIFFERENTLY (IF ANYTHING) IN AN "IDEAL" SITUATION.

**QUESTION 1:**

(a) WHEN A PATIENT WITH A LEG ULCER IS REFERRED TO YOUR CARE AND YOU ARE MAKING YOUR GENERAL NURSING ASSESSMENT, WHAT DO YOU LOOK FOR AND RECORD IN YOUR NOTES.

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(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?

YES           

NO            

IF YES PLEASE STATE;

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**QUESTION 2;**

**(a) WHEN EXAMINING THE PATIENT'S LEG(S) WHAT DO YOU LOOK FOR AND RECORD IN YOUR NOTES?**

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**(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?**

YES     

NO       

**IF YES PLEASE STATE;**

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**QUESTION 3;**

**(a) WHEN EXAMINING THE ULCER ITSELF WHAT DO YOU LOOK FOR AND RECORD IN YOUR NOTES?**

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**(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?**

YES

NO

**IF YES PLEASE STATE;**

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**QUESTION 4;**

**(a) WHEN MAKING YOUR NURSING ASSESSMENT OF PATIENTS WITH LEG ULCERS WHICH CLINICAL INVESTIGATIONS DO YOU ROUTINELY CARRY OUT?**

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**(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?**

YES     

NO       

**IF YES PLEASE STATE;**

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**QUESTION 5;**

DO YOU KNOW WHAT THE STAGES OF ULCER DEVELOPMENT AND HEALING ARE?

YES   
NO

IF YES PLEASE STATE;

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**QUESTION 6;**

WHICH SOLUTION(S) DO YOU USUALLY USE TO CLEANSE ULCERS?  
(TICK ALL WHICH APPLY)

- I DON'T USE SOLUTIONS
- SALINE
- WARMED SALINE
- CETRIMIDE
- HYPOCHLORITE
- HYDROGEN PEROXIDE
- CHLORHEXIDINE
- POTASSIUM PERMANGANATE
- OTHER (PLEASE SPECIFY)

**QUESTION 7;**

WHEN SELECTING THE DRESSING WHICH IS GOING TO BE IN DIRECT CONTACT WITH A LEG ULCER WHAT FEATURES DO YOU LOOK FOR IN THE PRODUCT?

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**QUESTION 8;**

**(a) HOW DO YOU DECIDE WHEN AN ULCER DRESSING NEEDS CHANGING?**

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**(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?**

YES

NO

**IF YES PLEASE STATE;**

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**QUESTION 9;**

ON WHICH TYPES OF ULCER DO YOU USE COMPRESSION BANDAGING?

- ALL ULCERS
- VENOUS ULCERS
- ARTERIAL ULCERS
- MIXED ULCERS
- DIABETIC ULCERS
- RHEUMATOID ULCERS
- I NEVER USE COMPRESSION

**QUESTION 10;**

**(a) IF YOU ARE TREATING A PATIENT WITH COMPRESSION WHICH PRODUCTS AND TECHNIQUES DO YOU USE? (PLEASE GIVE EXAMPLES)**

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**(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?**

- YES
- NO

**IF YES PLEASE STATE;**

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**QUESTION 11;**

**(a) BESIDES THE DRESSINGS WHAT OTHER GENERAL CARE AND ADVICE DO YOU GIVE TO ALL YOUR PATIENTS WITH LEG ULCERS?**

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**(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?**

YES     

NO       

**IF YES PLEASE STATE;**

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**QUESTION 12;**

**(a) BESIDES THE DRESSINGS WHAT SPECIFIC CARE AND ADVICE DO YOU GIVE TO PATIENTS WITH VENOUS ULCERS?**

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**(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?**

YES

NO

**IF YES PLEASE STATE;**

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**QUESTION 13;**

**(a) BESIDES THE DRESSINGS WHAT SPECIFIC CARE AND ADVICE DO YOU GIVE TO PATIENTS WITH ARTERIAL AND MIXED ULCERS?**

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**(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?**

YES

NO

**IF YES PLEASE STATE;**

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**QUESTION 14;**

**(a) BESIDES THE DRESSINGS WHAT SPECIFIC CARE AND ADVICE DO YOU GIVE TO PATIENTS WITH DIABETIC AND RHEUMATOID ULCERS?**

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**(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?**

YES     

NO       

**IF YES PLEASE STATE;**

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**QUESTION 15;**

**DO YOU KNOW WHAT THE CAUSES OF ALLERGIC REACTIONS IN LEG  
ULCER PATIENTS ARE?**

YES

NO

**IF YES PLEASE STATE;**

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**QUESTION 16;**

**(a) HOW DO YOU MONITOR THE PROGRESS OF AN ULCER WHICH YOU ARE TREATING?**

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**(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?**

YES

NO

**IF YES PLEASE STATE;**

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**QUESTION 17;**

**(a) WHAT DO YOU USUALLY DO IF AN ULCER DOES NOT APPEAR TO BE HEALING?**

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**(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?**

YES

NO

**IF YES PLEASE STATE;**

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**QUESTION 18;**

**IF AN ULCER DOES NOT APPEAR TO BE HEALING HOW LONG DO YOU TREAT IT YOURSELF BEFORE SEEKING SPECIALIST ADVICE?**

1 - 3 WEEKS

4 - 8 WEEKS

9 - 12 WEEKS

MORE THAN 12 WEEKS

I DON'T USUALLY REFER

**QUESTION 19;**

**(a) IF YOU ARE SUCCESSFUL IN HEALING A PATIENT'S LEG ULCER WHAT MEASURES (IF ANY) DO YOU TAKE TO PREVENT RECURRENCE?**

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**(b) IF YOU HAD UNLIMITED TIME AND RESOURCES WOULD YOU DO ANYTHING DIFFERENTLY?**

YES

NO

**IF YES PLEASE STATE;**

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**\* THANK YOU VERY MUCH FOR YOUR HELP AND \*  
\* PARTICIPATION IN THIS SURVEY \***

ALTHOUGH ALL THE INFORMATION IN THIS SURVEY IS STRICTLY  
CONFIDENTIAL WE ARE VERY INTERESTED IN A MORE DETAILED  
DISCUSSION OF DISTRICT NURSES OPINIONS ABOUT THIS SURVEY  
AND THE CLINICAL INFORMATION PACKS.

IF YOU WOULD BE PREPARED TO DISCUSS YOUR VIEWS AT A FUTURE  
DATE PLEASE WRITE YOUR NAME AND A TELEPHONE NUMBER WHERE  
YOU MAY BE CONTACTED.

INTERVIEWS WILL BE BEING CONDUCTED IN ABOUT SIX WEEKS TIME  
AND WILL BE BY APPOINTMENT AND AT YOUR CONVENIENCE.

NAME .....

TELEPHONE NUMBER .....

## **APPENDIX VI**

# **DURATION OF EFFECT TESTING SCHEDULE**

**DURATION OF EFFECT TESTING**

BEFORE CONTACTING RESPONDENTS MAKE A NOTE OF INDIVIDUAL PRE AND POST TEST SCORES FOR FEEDBACK - BUT DO NOT GIVE THE SCORES UNTIL THE INTERVIEW IS OVER AS THIS MAY PREJUDICE REPLIES.

NAME.....

PHONE NUMBER.....

SUBJECT NUMBER.....

INDIVIDUAL SCORES (NOT TO BE USED UNTIL END OF INTERVIEW)

	ASSESS	TREAT	GENERAL	TOTAL
PRE-TEST				
POST-TEST				

\* \* \* \* \*

**INTRODUCTION**

Some months ago when you took part in the leg ulcer survey we were doing you about leg ulcer management gave your name to say you wouldn't mind answering some further questions about the survey.

If it's convenient I'd like to ask you some more questions about the clinical information pack and it's contents.

There's nothing for you to fill in this time, I have a set of questions to ask you and I will be ticking boxes on this sheet.

The whole interview should take no more than 15 - 20 minutes

**[THIS PAGE TO BE DESTROYED AT END OF INTERVIEW]**



PERSONAL  
NUMBER

H.A.  
CODE

LOC  
CODE

D1. FIRST OF ALL, CAN I ASK YOU, ARE YOU STILL USING THE CLINICAL INFORMATION PACK?

YES  CODE 1

NO  CODE 2

\* IF YES GO TO QUESTION D2

\* IF NO GO TO QUESTION D3

D2. APPROXIMATELY HOW OFTEN DO YOU USE THE PACK?;

ALL THE TIME  (a) WITH STUDENTS  (d)

OCCASIONALLY  (b) NEW PATIENTS  (e)

FOR REFERENCE  (c) OTHER  (f)

D3. APPROXIMATELY WHEN DID YOU LAST USE THE PACK?;

LAST DAY  1 ON RECEIVING IT  4

LAST WEEK  2 AT POST TEST  5

LAST MONTH  3 OTHER  6

D4. SINCE YOU TOOK PART IN THE STUDY HAVE YOU HAD ANY NEW PATIENTS WITH LEG ULCERS?

YES  CODE 1

NO  CODE 2

\* IF YES GO TO QUESTION D5

\* IF NO GO TO QUESTION D6

D5. HAS THE PACK HELPED YOU IN THE PLANNING AND CARRYING OUT OF THEIR CARE?

YES                CODE 1  
NO                 CODE 2

IF YES - IN WHAT WAY HAS IT HELPED?

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D6. SINCE YOU RECEIVED THE PACK HAVE YOU USED IT FOR ANYTHING ELSE (E.G. TEACHING STUDENTS)

YES                CODE 1  
NO                 CODE 2

IF YES - WHAT ELSE HAVE YOU USED IT FOR?

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**IF RESPONDENT GIVES EXAMPLES OF OTHER USES OF THE PACK  
MAKE SOME CONVERSATION OR COMMENT ABOUT IT BEFORE  
PROCEEDING.**

I WOULD NOW LIKE TO ASK YOU SOME QUESTIONS ABOUT THE DETAIL OF THE CLINICAL INFORMATION PACK.....,

D7. FIRSTLY, DO YOU RECALL WHAT THE PACK RECOMMENDED YOU SHOULD LOOK FOR WHEN YOU ARE MAKING YOUR GENERAL ASSESSMENT OF THE PATIENT?  
[PROMPT WITH GENERAL/LEGS/ULCER ITSELF IF NECESSARY]

PERSONAL	<input type="checkbox"/>	LIFESTYLE	<input type="checkbox"/>	SOCIAL	<input type="checkbox"/>
	D2.1(a)		D2.1(b)		D2.1(c)
PSYCHOLOGY	<input type="checkbox"/>	MED/SURG HISTORY	<input type="checkbox"/>	ULCER HISTORY	<input type="checkbox"/>
	D2.1(d)		D2.1(e)		D2.1(f)
LEGS	<input type="checkbox"/>	SKIN	<input type="checkbox"/>	FOOT PULSES	<input type="checkbox"/>
	D2.2(a)		D2.2(b)		D2.2(c)

WHAT ABOUT THE ASSESSMENT OF THE ULCER ITSELF?

SITE	<input type="checkbox"/>	ONSET	<input type="checkbox"/>	DURATION	<input type="checkbox"/>
	D2.3(a)		D2.3(b)		D2.3(c)
SIZE	<input type="checkbox"/>	APPEARANCE	<input type="checkbox"/>	DEPTH	<input type="checkbox"/>
	D2.3(d)		D2.3(e)		D2.3(f)
ULCER BASE	<input type="checkbox"/>	PAIN	<input type="checkbox"/>		
	D2.3(g)		D2.3(h)		

CAN YOU ALSO RECALL WHICH ROUTINE CLINICAL INVESTIGATIONS IT RECOMMENDED YOU CARRY OUT ON PATIENTS WITH LEG ULCERS?

B/P	<input type="checkbox"/>	URINALYSIS	<input type="checkbox"/>	BLOODS	<input type="checkbox"/>
	D2.4(a)		D2.4(b)		D2.4(c)

D8. [MAKE A NEUTRAL COMMENT ABOUT HOW MUCH THE RESPONDENT REMEMBERS THEN ASK].....DO YOU FIND THAT YOU ARE ABLE TO DO EVERYTHING YOU WOULD LIKE AT THE ASSESSMENT?

YES  CODE 1

NO  CODE 2

IF NO ASK WHAT STOPS YOU DOING EVERYTHING YOU'D LIKE TO?

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D9. CAN YOU REMEMBER WHAT THE STAGES OF ULCER DEVELOPMENT AND HEALING ARE CALLED?

NECR  D2.5 (a)      SLOUGH  D2.5 (b)      GRANUL'N  D2.5 (c)      EPITHEL'N  D2.5 (e)

D10. CAN YOU RECALL WHICH SOLUTIONS THE PACK RECOMMENDS YOU USE TO CLEAN ULCERS?

SALINE  D2.9 (b)      OTHER \_\_\_\_\_

IS THIS WHAT YOU USE?

YES  CODE 1

NO  CODE 2

(IF ANYTHING OTHER THAN SALINE MENTIONED ASK).....DO YOU HAVE A PARTICULAR REASON FOR USING (NAME OF PRODUCT)?

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NOW IF YOU DON'T MIND I'D LIKE TO ASK YOU SOME QUESTIONS ABOUT DRESSINGS USED FOR ULCERS.....

D11. YOU MAY REMEMBER THE PACK LISTED THE FEATURES OF AN "IDEAL" DRESSING.....CAN YOU TELL ME WHAT THESE ARE?

NON ADHER	<input type="checkbox"/>	NON ALLERG	<input type="checkbox"/>	ABSORB	<input type="checkbox"/>
	D2.11(a)		D2.11(b)		D2.11(c)
PROTECT SKIN	<input type="checkbox"/>	MICRO ENVIR	<input type="checkbox"/>		
	D2.11(d)		D2.11(e)		

D12. THE PACK ALSO DESCRIBED SOME SIGNS TO LOOK FOR WHICH MIGHT INDICATE THAT AN ULCER DRESSING NEEDED CHANGING.....CAN YOU RECALL WHAT THESE ARE?

STRIKE THRO	<input type="checkbox"/>	PAIN/ COMFORT	<input type="checkbox"/>	STAGE OF HEALING	<input type="checkbox"/>
	D2.15(a)		D2.15(b)		D2.15(c)
LITTLE AS POSS	<input type="checkbox"/>				
	D2.15(d)				

D13. APART FROM DRESSINGS WHICH GO ON THE ULCER ITSELF THE PACK ALSO MENTIONED COMPRESSION BANDAGING.....CAN YOU REMEMBER THE RECOMMENDATIONS IT MADE FOR WHEN TO USE COMPRESSION ?

VENOUS  
ULCERS

D2.16(b)

IS THIS WHEN YOU USE COMPRESSION?

YES  CODE 1

NO  CODE 2

IF NO ASK.....WHEN DO YOU USE IT?

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D14. WHAT ABOUT THE PRODUCTS AND TECHNIQUES WHICH CAN BEST ACHIEVE COMPRESSION ON LEG ULCERS?

PRODUCTS   
D2.17(a)

TECHNIQUE   
D2.17(b)

Paste+Elastocrepe  
Setopress  
4 Layer  
Blue line  
Shaped Tubigrip  
Graduated tubigrip

Figure of 8  
Max pressure at ankle  
Graduated compression

IS THIS WHAT YOU USE?

YES  CODE 1  
NO  CODE 2

IF NO ASK.....WHY ARE YOU NOT ABLE TO USE (NAMED) PRODUCTS?

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D15. IF WE CAN NOW MOVE ON TO HEALTH EDUCATION - FROM THE SURVEYS YOU COMPLETED IT'S OBVIOUS THAT THIS IS A LARGE PART OF THE NURSING CARE OF THESE PATIENTS. CAN YOU REMEMBER THE ADVICE THE PACK RECOMMENDED YOU GIVE TO LEG ULCER PATIENTS?

DIET  LIFESTYLE  SKIN CARE   
D2.19(a) D2.19(b) D2.19(c)

EXERCISE   
D2.19(d)

[FOR ADVICE SPECIFIC TO DIFFERENT ULCERS PROMPT IF NECESSARY BY IDENTIFYING THE ULCER TYPES]

**VENOUS**

**ARTERIAL/MIXED**

**DIABETIC/RHEUMATOID**

MOBILITY

D2.20 (a)

PAIN CONTROL

D2.21 (a)

PAIN CONTROL

D2.22 (a)

ELEV'TN

D2.20 (b)

REFERRAL

D2.21 (b)

REFERRAL

D2.22 (b)

TREAT CONDITION

D2.22 (c)

IS THIS THE ADVICE YOU GIVE?

YES

CODE 1

NO

CODE 2

IF NO ASK.....IS THERE ANY PARTICULAR REASON WHY YOU DO NOT GIVE THIS ADVICE?

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D16. YOU MAY RECALL THAT THE PACK HAD SOME INFORMATION ABOUT THINGS WHICH HAVE BEEN SHOWN TO CAUSE ALLERGIC REACTIONS IN LEG ULCER PATIENTS AND DELAY HEALING.....CAN YOU THINK WHAT THESE ARE?

IMPREGN'D DRESSINGS

D2.25 (a)

TOPICAL APPLIC'NS

D2.25 (b)

TOPICAL ANTIBIOTICS

D2.25 (c)

D17. THE PACK ALSO MADE REFERENCE TO SOME SIGNS WHICH MAY INDICATE TO YOU HOW AN ULCER YOU ARE TREATING IS PROGRESSING.....DO YOU REMEMBER WHAT THESE SIGNS ARE?

MEASUREM'T

D2.26 (a)

LEVEL OF PAIN

D2.26 (b)

STRIKE THROUGH

D2.26 (c)

STAGE OF HEALING

D2.26 (d)

D18. CAN YOU ALSO RECALL WHAT THE PACK RECOMMENDED YOU DO IF AN ULCER DOES NOT APPEAR TO BE HEALING?

CHANGE TREATMENT

D2.27 (a)

REFERRAL

D2.27 (b)

AND HOW LONG YOU SHOULD LEAVE IT BEFORE GETTING ANOTHER OPINION?

4-8 WEEKS

D2.28 (b)

IS THIS WHAT YOU DO WITH SLOWLY HEALING ULCERS?

YES  CODE 1

NO  CODE 2

IF NO ASK.....IS THERE ANY PARTICULAR REASON WHY YOU DO NOT DO THIS?

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D19. AND FINALLY, ABOUT PREVENTION OF ULCER RECURRENCE, THE PACK MADE SEVERAL RECOMMENDATIONS ABOUT PREVENTATIVE MEASURES WHICH COULD BE TAKEN, DO YOU RECALL WHAT THESE ARE?

PROTECTION  D2.29 (a)      SUPPORT  D2.29 (b)      INVESTIG  D2.29 (c)

LONG TERM   
OBSERV'N      D2.29 (d)

ARE YOU ABLE TO DO ALL THESE THINGS?

YES  CODE 1  
NO  CODE 2

IF NO ASK.....IS THERE ANYTHING PARTICULAR WHICH STOPS YOU TAKING THESE MEASURES?

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THANK YOU VERY MUCH INDEED FOR YOUR TIME AND FOR ALL THE INFORMATION YOU HAVE GIVEN ME OVER THE LAST FEW MONTHS

**TOTALS;**

- D3.1 ASSESSMENT SCORE = SUM OF 2.1(y), 2.2(y), 2.3(y),  
2.4(y), 2.5(y)
- D3.2 TREATMENT SCORE = SUM OF 2.9(y), 2.11(y), 2.15(y),  
2.16(y), 2.17(y), 2.19(y),  
2.20(y), 2.21(y), 2.22(y)
- D3.3 GENERAL SCORE = SUM OF 2.25(y), 2.26(y), 2.27(y),  
2.28(y), 2.29(y)
- D3.4 TOTAL SCORE = SUM OF D3.1, D3.2, D3.3

## **APPENDIX VII**

### **SCORING FRAMEWORK AND INSTRUCTIONS FOR PRACTICE RELATED QUESTIONS PRE-TEST AND POST-TEST (ALL SUBJECTS)**

## **DEFINITIONS;**

All the definitions used in this scoring framework relate to the Clinical Information Pack and are relevant **ONLY** to this study. Definitions for both pre-test and post-test are identical.

Within each definition are a list of words, phrases or expressions which are acceptable as a "correct" answer and should be given a score of one point.

For example:

Item 2.1(a) has been defined as "personal details", and included in this are the patient's age, sex, family history, occupational history, personal history and factors which predispose them to leg ulcers.

A nurse may mention one or all of these factors, **HOWEVER, the maximum score is still only 1 point.** The scoring system is designed to facilitate as high a score as possible. There is no facility in this scoring framework for giving a higher score for greater detail.

If a respondent uses the definition itself the score should be given.

## **SCORING**

The maximum possible score in both the pre-test and post-test is 62 points.

Assessment section, questions 1 - 5 = 24 points.

Treatment section, questions 6 - 14 = 24 points.

General knowledge section, questions 15 - 19 = 14 points.

Within the assessment, treatment or general knowledge subsections a correct response appearing in another question should also be scored. The score should be entered in the correct coding box, **HOWEVER, each item of information may only be scored once.**

If a respondent gives a correct answer in either section a) or section b) of a question the item should be scored in the appropriate coding box.

The labels on the coding boxes match the definition labels for each item of information.

For a non response or incorrect answer the coding box should be left blank.



Q2 EXAMINATION OF LEG(S); :

Three points maximum may be scored for information appearing in either section a) or section b). Score 1 point for each of the following;

BOX 2.2(a) - THE LEGS  
Includes mention of shape, oedema, state of veins, general appearance of the leg, phlebitis, ankle flare.

BOX 2.2(b) - STATE OF THE SKIN  
Includes thickening, warmth, colour, pigmentation, shininess, hairlessness, eczema, cellulite. (N.B. NOT oedema, this belongs in 2.2(a) above).

BOX 2.2(c) - FOOT PULSES  
Includes measure/palpate foot pulses, assess circulation of feet, take Doppler measurements, palpation dorsalis pedis and post tibial arteries, measurement of ankle pressure index.

BOX 2.2(d) - DUMMY LEAVE BLANK

BOX 2.2(e) - DUMMY LEAVE BLANK

BOX 2.2(f) - DUMMY LEAVE BLANK

BOX 2.2(g) - DUMMY LEAVE BLANK

BOX 2.2(h) - DUMMY LEAVE BLANK

BOX 2.2(x) - ENTER CODE YES = 1  
NO = 2

BOX 2.2(y) - ENTER SUM OF SCORES FROM 2.2(a) TO 2.2(c)



Q4 CLINICAL INVESTIGATIONS;

Three points maximum may be scored for information appearing in either section a) or section b). Score 1 point for each of the following;

- BOX 2.4(a) - MEASUREMENT OF BLOOD PRESSURE; (B/P).
- BOX 2.4(b) - URINALYSIS  
Includes test urine for sugar, take urine sample.
- BOX 2.4(c) - BLOOD SCREENING  
Includes test for blood sugars, E.S.R., take blood tests, take blood samples, send bloods to lab.
- BOX 2.4(d) - DUMMY LEAVE BLANK
- BOX 2.4(e) - DUMMY LEAVE BLANK
- BOX 2.4(f) - DUMMY LEAVE BLANK
- BOX 2.4(g) - DUMMY LEAVE BLANK
- BOX 2.4(h) - DUMMY LEAVE BLANK
  
- BOX 2.4(x) - ENTER CODE    YES = 1  
                                      NO  = 2
  
- BOX 2.4(y) - ENTER SUM OF SCORES FROM 2.4(a) TO 2.4(c)





Q6 SOLUTIONS USED;

IN BOXES a) TO i) ENTER CODE 1 IF RESPONSE PRESENT

DON'T USE	= BOX 2.6(a)
SALINE	= BOX 2.6(b)
WARMED SALINE	= BOX 2.6(c)
CETRIMIDE	= BOX 2.6(d)
HYPOCHLORITE	= BOX 2.6(e)
HYD. PEROXIDE	= BOX 2.6(f)
CHLORHEXIDINE	= BOX 2.6(g)
POTASS PERMANGANATE	= BOX 2.6(h)
OTHER	= BOX 2.6(i)

BOX 2.6(y) SCORE ONE POINT IF ANSWERED 2.6(b) AND/OR 2.6(c)  
ONLY

Q7 FEATURES OF DRESSINGS;

Five points maximum may be scored for information appearing in either section a) or section b). Score 1 point for each of the following;

- BOX 2.7(a) - NON ADHERENT  
Any expression which means does not stick, or such things as does not damage new/fragile tissue, will not adhere to new tissue.
- BOX 2.7(b) - NON ALLERGENIC  
Does not cause skin reactions, is non irritant, is not impregnated, patient is not allergic to product.
- BOX 2.7(c) - ABSORBENT  
Any phrase meaning absorbent, such as soaks up exudate, doesn't leak, doesn't get strike through.
- BOX 2.7(d) - PROTECTS SURROUNDING SKIN  
Prevents excoriation.
- BOX 2.7(e) - PROVIDES CORRECT MICRO-ENVIRONMENT  
Insulating, gives 'field of healing', promotes wound healing, maintains warm moist environment.
- BOX 2.7(f) - PATIENT COMFORT/COMPLIANCE  
Acceptability to patient, patient comfort, suits patients lifestyle.

THIS RESPONSE NOT INCLUDED IN TOTAL SCORE

- BOX 2.7(y) - ENTER SUM OF SCORES FROM 2.7(a) TO 2.7(e)



Q9 USE OF COMPRESSION:

IN BOXES a) TO g) ENTER CODE 1 IF RESPONSE PRESENT OR LEAVE BLANK

ALL ULCERS	- BOX 2.9(a)
VENOUS	- BOX 2.9(b)
ARTERIAL	- BOX 2.9(c)
MIXED	- BOX 2.9(d)
DIABETIC	- BOX 2.9(e)
RHEUMATOID	- BOX 2.9(f)
NEVER USE	- BOX 2.9(g)

BOX 2.9(y) - ENTER SCORE OF 1 IF 2.9(b) ONLY HAS BEEN ANSWERED





















TOTALS:

:

BOX 3.1 = TOTAL SCORE FOR ASSESSMENT SECTION.  
ENTER SUM OF SCORES RECORDED IN BOXES  
2.1(y), 2.2(y), 2.3(y), 2.4(y), 2.5(y).  
MAXIMUM POSSIBLE SCORE THIS SECTION = 24 POINTS

BOX 3.2 = TOTAL SCORE FOR TREATMENT SECTION.  
ENTER SUM OF SCORES RECORDED IN BOXES  
2.6(y), 2.7(y), 2.8(y), 2.9(y), 2.10(y),  
2.11(y), 2.12(y), 2.13(y), 2.14(y).  
MAXIMUM POSSIBLE SCORE THIS SECTION = 24 POINTS

BOX 3.3 = TOTAL SCORE FOR GENERAL KNOWLEDGE SECTION.  
ENTER SUM OF SCORES RECORDED IN BOXES  
2.15(y), 2.16(y), 2.17(y), 2.18(y), 2.19(y).  
MAXIMUM POSSIBLE SCORE THIS SECTION = 14 POINTS

BOX 3.4 = TOTAL SCORE FOR ALL SECTIONS.  
ENTER SUM OF SCORES RECORDED IN BOXES 3.1, 3.2,  
3.3.  
MAXIMUM POSSIBLE OVERALL SCORE = 62 POINTS

## PRACTICE RELATED QUESTIONS - CODING PROMPT SHEET

### ASSESSMENT QUESTIONS

#### Q1: GENERAL ASSESSMENT

- 2.1 (a) Personal Details
  - 2.1 (b) Lifestyle
  - 2.1 (c) Social Details
  - 2.1 (d) Psychology
  - 2.1 (e) Medical / Surgical History
  - 2.1 (f) Ulcer History
- 2.1 (y) Maximum Score = 6

#### Q2: EXAMINATION OF LEGS

- 2.2 (a) The Legs
  - 2.2 (b) The Skin
  - 2.2 (c) Foot Pulses
- 2.2 (y) Maximum Score = 3

#### Q3: EXAMINATION OF THE ULCER

- 2.3 (a) Site
  - 2.3 (b) Onset
  - 2.3 (c) Duration
  - 2.3 (d) Size
  - 2.3 (e) Appearance
  - 2.3 (f) Depth
  - 2.3 (g) Ulcer Base
  - 2.3 (h) Pain
- 2.3 (y) Maximum Score = 8

#### Q4: CLINICAL INVESTIGATIONS

- 2.4 (a) Blood Pressure
  - 2.4 (b) Urinalysis
  - 2.4 (c) Blood Screening
- 2.4 (y) Maximum Score = 3

#### Q5: STAGES OF ULCER DEVELOPMENT & HEALING

- 2.5 (a) Necrosis
  - 2.5 (b) Slough
  - 2.5 (c) Granulation
  - 2.5 (d) Epithelialisation
- 2.5 (y) Maximum Score = 4

## TREATMENT QUESTIONS

### Q6: CLEANING SOLUTIONS

- 2.6 (b) Saline and/or
- 2.6.(c) Warmed Saline **ONLY**
  
- 2.6 (y) Maximum Score = 1

### Q7: FEATURES OF DRESSING

- 2.7 (a) Non Adherent
- 2.7 (b) Non Allergenic
- 2.7 (c) Absorbent
- 2.7 (d) Protects Surrounding Skin
- 2.7 (e) Correct Micro-environment
  
- 2.7 (y) Maximum Score = 5

### Q8: WHEN TO CHANGE DRESSINGS

- 2.8 (a) Strike Through
- 2.8 (b) Patient's pain / comfort
- 2.8 (c) Stage of Wound
- 2.8 (d) As little as Possible
  
- 2.8 (y) Maximum Score = 4

### Q9: USE OF COMPRESSION

- 2.9 (b) Venous Ulcers **ONLY**
  
- 2.8 (y) Maximum Score = 1

### Q10: COMPRESSION PRODUCTS & TECHNIQUES

- 2.10 (a) Products
- 2.10.(b) Techniques
  
- 2.10 (y) Maximum Score = 2



**TREATMENT QUESTIONS - CARE & ADVICE**

**Q11: GENERAL CARE & ADVICE**

- 2.11 (a) Diet
- 2.11 (b) Lifestyle
- 2.11 (c) Skin Care
- 2.11 (d) Exercise
  
- 2.11 (y) Maximum Score = 4

**Q12: CARE & ADVICE - VENOUS ULCERS**

- 2.12 (a) Mobility
- 2.12 (b) Leg Elevation
  
- 2.12 (y) Maximum Score = 2

**Q13: CARE & ADVICE - ARTERIAL & MIXED ULCERS**

- 2.13 (a) Pain Control
- 2.13 (b) Referral
  
- 2.13 (y) Maximum Score = 2

**Q14: CARE & ADVICE - DIABETIC & RHEUMATOID ULCERS**

- 2.14 (a) Pain Control
- 2.14 (b) Referral
- 2.14 (c) Monitor / Treat Underlying Condition
  
- 2.14 (y) Maximum Score = 3

**GENERAL KNOWLEDGE QUESTIONS**

**Q15: CAUSES OF ALLERGIC REACTIONS**

- 2.15 (a) Impregnated Dressings
- 2.15 (b) Topical Applications
- 2.15 (c) Topical Antibiotics
  
- 2.15 (y) Maximum Score = 3

**Q16: MONITORING PROGRESS**

- 2.16 (a) Measurement
- 2.16 (b) Patient pain / comfort
- 2.16 (c) Strike Through
- 2.16 (d) Stage of Wound Healing
  
- 2.16 (y) Maximum Score = 4

**Q17: ULCER NOT HEALING**

- 2.17 (a) Change / Stop Treatment
- 2.17 (b) Refer
  
- 2.17 (y) Maximum Score = 2

**Q18: TIME BEFORE REFERRING**

- 2.18 Code 2 ONLY
  
- 2.18 (y) Maximum Score = 1

**Q19: PREVENTATIVE MEASURES**

- 2.19 (a) Protection
- 2.19 (b) Support
- 2.19 (c) Investigations
- 2.19 (d) Long Term Observation
  
- 2.19 (y) Maximum Score = 4

## TOTALS

3.1 Sum of Q1, Q2, Q3, Q4, Q5.

Maximum Score = 24

3.2 Sum of Q6, Q7, Q8, Q9, Q10, Q11,  
Q12, Q13, Q14,

Maximum Score = 24

3.3 Sum of Q15, Q16, Q17, Q18, Q19.

Maximum Score = 14

3.4 TOTAL SCORE

MAXIMUM TOTAL = 62

## **APPENDIX VIII**

# **SIGNIFICANCE LEVEL AND STATISTICAL TESTS USED IN DATA ANALYSIS**

## **SIGNIFICANCE TESTING**

Test statistics are used to determine the significance of a relationship between variables, and the significance level indicates the likelihood of observed characteristics of samples having occurred by chance.

Significance levels are expressed in terms of probability, and the lower the probability the higher the significance of a result, or the less likely the result is due to chance alone (Vogt 1993).

Probability is a mathematical and philosophical concept, and is described as a long term proportion which lies between 0 and 1. If an event is certain the probability will be 1, and if impossible the probability will be 0.

Probability may be expressed either as a percentage or decimal. In social research, 0.05 (or 5%) is the commonly selected level of significance (Hicks 1990), and the level used in this study.

Statistically significant results should be interpreted with caution. It is possible for the results of significance testing to be highly significant and completely meaningless. Statistically significant results should always be interpreted in terms of the hypotheses being tested, the study design and the sample size.

## **STATISTICAL POWER**

In general terms the power of a statistical test is its ability to determine relationships between variables (Lwanga & Lemeshow 1991). More specifically, the power of a test refers to the probability of rejecting a null hypothesis when it is false. A statistical test may have a maximum power of 1.0, and power is expressed as a percentage.

## **CONFIDENCE INTERVALS**

A confidence interval represents a range of values that is likely to contain a given population parameter. The purpose of confidence intervals is to indicate how likely a sample estimate is to represent a true value.

The hypothesis test and a calculated confidence interval are related in that at the 5% significance level a 95% confidence interval will exclude a value of nought (Gardner & Altman 1989).

In this study 95% confidence intervals were used to increase the precision of findings significant at the 5% level.

## **'T' TEST**

The 'T' test is used to compare group means. The test assumes that the population from which the samples are drawn are normally distributed.

The independent 'T' test is appropriate for testing the null hypothesis that there is no difference in means in two independent samples. In this study the independent 'T' test was used to compare group means between the experimental and control groups and between the means of the different health authorities which made up these groups.

As the study design included pre and post-test measures on the same individuals the paired 'T' test was used to test the difference in means from pre-test to post-test within the groups. The analysis of paired data is more robust and makes it easier to detect true differences between groups.

## **ANALYSIS OF VARIANCE**

Analysis of variance performs a similar function to the 'T' tests, but is able to test the significance of differences in means in two or more groups on one or more variables (Vogt 1993). In this study analysis of variance was used to test for significant intra-group differences in means within the experimental group.

## **APPENDIX IX**

# **SEMI-STRUCTURED INTERVIEW SCHEDULE FOR SERVICE MANAGERS**



# **SEMI STRUCTURED INTERVIEW SCHEDULE FOR SERVICE MANAGERS**

## **SUBJECT AREAS**

### **1. PROFESSIONAL BACKGROUND;**

- Personal Details
- Employment Details
- Description of the Role
- Role Responsibilities
- Perception of Role
- Training for Managerial Role
- Method of Updating

### **2. ORGANISATIONAL STRUCTURES;**

- Population & Social Profile of Locality
- Number of bases / Clinics / Health Centres
- Numbers & types of District Nursing Staff
- Organisation of the Clinical Work
- Internal Management Structures
- Reporting Arrangements

### **3. ORGANISATIONAL PROCESSES;**

- Communications Networks (Up & Down)
- Monitoring District Nursing Staff Performance
- Motivation & Control of District Nursing Staff
- District Nursing Staff Training & Development

### **4. EXTRINSIC FACTORS;**

- Structural Changes
- Health Policies
- Skill Mix Studies
- P2000 Student Placements
- Internal Reorganisations
- Interpretation of 1990 NHS Act

MANAGER I.D. CODE .....

LOCALITY I.D. CODE .....

1. PROFESSIONAL

1.1. To start with can you tell me a bit about yourself.....your career....jobs you've had....things like that?

1.2. What are your main responsibilities as a Neighbourhood / locality / primary care area / nurse manager?

1.3. How do you yourself see your role.....could you describe it for me?

Prompts:

- \* Describe a "typical" day
- \* What aspect of your job do you find most interesting?

1.4 Have you had any special training to be a manager?

1.5. How do you keep yourself up to date with all the issues in the Health Service?

Prompts;

- \* Journals
- \* Courses
- \* Study Days
- \* What about nursing issues....?

## **2. ORGANISATIONAL STRUCTURES**

**2.1. Can you give me some facts and figures about your neighbourhood / locality / primary care area?**

**\* Population**

**\* Type of Housing**

**\* Numbers of Bases / Clinics /Health Centres**

**\* Numbers & Types of District Nurses**

**\* Who organises the clinical work?**

2.2. What about the organisational structure and lines of reporting.....can you tell me about those?

Prompts;

- \* Diagram of the structure?
- \* Who do you report to?
- \* Who do the district nurses report to?

### 3. ORGANISATIONAL PROCESSES

3.1. Can you tell me about the communication structures in your neighbourhood / locality / primary care area....how do you get information and how do you distribute information to the district nurses?

Prompts:

- \* Meetings
- \* Memos
- \* Telephone

3.2. What about monitoring the district nurses and their work. ...how do you make sure they're all doing their jobs well?

Prompts;

- \* Management by walking about
- \* Appraisal
- \* Audit

3.3. What about the training & development for the district nurses....do you have any responsibility for that?

Prompts;

- \* Training Budget
- \* Use of Bank Staff
- \* Caseload cover



#### **4. EXTRINSIC FACTORS**

4.1. With all the change that's going on in the Health Service right now, is there anything particular which you feel has affected you and the district nurses?

Prompts;

- \* Structural Changes
- \* Skill Mix
- \* P2000 Students
- \* Internal Reorganisations
- \* Trust Status

**APPENDIX X**

**FOLLOW-UP INTERVIEW SCHEDULE FOR  
SERVICE MANAGERS**

**FOLLOW-UP INTERVIEW SCHEDULE FOR SERVICE MANAGERS**

**MANAGER I.D. CODE .....**

**LOCALITY I.D. CODE .....**

**F1. What did you think of the Leg Ulcer study overall?**

**Prompts;**

- \* For Yourself**
- \* For the District Nurses**
- \* For Patients**

**F2. Have there been any changes in leg ulcer care in your Neighbourhood / locality / primary care area since we did the survey?**

**F3. What did you think about the district nurses scores in your neighbourhood / locality / primary care area?**

**Prompts:**

**\* Did you think they were good?**

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