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Management of medication for older people living at home : home carer involvement and patient safety

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Medication Management for Older People Living at Home: Home Carer Involvement and Patient Safety

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Abstract

Home carers are responsible for meeting the personal care needs of ever more dependent older people living at home. Personal care includes the management of prescribed medication transferred from district nursing services. Medication management is a complex and potentially hazardous process. The aims of this study were to understand the circumstances in which home carer involvement in medication related activities for older people living at home might jeopardise patient safety and to identify ways of diminishing the risk of adverse events.

The study adopted a systems approach to understanding human error. This approach has generated a number of conceptual models and practical tools to help specify the range of factors that predispose to adverse events in hospital settings. None of these models have been used in domiciliary care. The study sought to develop a framework specifying the range of factors that predispose to adverse events when medication related activities for older people living at home are transferred from district nursing to home care services. Data were collected from open-ended interviews with 64 district nursing and home care personnel in two highly contrasting study sites.

Data analysis catalogued the variety of medication related activities undertaken by home carers and developed a framework that specified the range of factors respondents identified as predisposing to adverse medication events. This was called the Framework of Factors Influencing Medication Management by Home Carers (FFIHC). The study critically assesses the applicability of conceptual models developed in hospital settings to domiciliary care. It also discusses the extent to which the FFIHC has utility in the identification of appropriate and effective strategies to minimise errors and adverse events in this area of care.

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Chapter 1: Introduction

Medication errors occur in all healthcare settings. This study looks at medication errors when responsibility for medication related activities for older people living at home is transferred from district nursing to home care services.

1.1. Motivation for research

As a registered nurse working in the district nursing service this research emerged from my experience. The administration of medication is a central aspect of nursing practice. At the start of every nurse's training, the importance of their role in medication administration is emphasised. The most important part involves meeting the criteria that the right dose of the right drug is given to the right patient at the right time by the right route. Registered nurses administering medicines are accountable for their practice in accordance with the Nursing and Midwifery Council (NMC) document *Guidelines for the Administration of Medicines* (NMC 2004). This states that the administration of medicines 'is not solely a mechanistic task to be performed in strict compliance with the written prescription of the medical practitioner' (NMC 2004: 3). Thus administration also involves monitoring to ensure the safety and efficacy of therapy and the appropriate reporting of adverse drug reactions (Sexton and Braidwood 1999).

The same criteria for safe medication administration apply in both hospital and domiciliary care settings. The ten steps to safe medication administration in hospital settings are listed below.

1. Before administering any medicine wash hands
2. The nurse should check that the prescription is complete and legible. To ensure the safety of the patient, the nurse should check the name of the drug and the dose, the date and time of administration, the route and method of administration and the signature of the prescriber
3. Select the medicine prescribed and check the expiry date
4. Empty the prescribed dose from the bottle into the lid and then place it in a clean container. Avoid touching the medicine
5. Take the medicine to the patient. Check the patient's identity by asking his or her name and checking the details on the name band against the prescription sheet
6. Administer the drug as prescribed, offering a drink of water. If the patient is unable to drink, an alternative route of administration should be used
7. When the prescribed dose has been administered, record on the prescription chart that it has been given, according to local policy
8. The patient's knowledge of the therapy should be assessed. The nurse, doctor and pharmacist should provide information on the drug's action and side-effects, and how to take it
9. Irritant drugs should be administered with food to minimise damage to the gastric mucosa
Some drugs interact with food or their absorption is affected by food. These should be taken an hour before food or on an empty stomach
10. Patients should be monitored for potential side effects following medication administration

Box 1.1: Administration of solid oral doses in hospital settings (Sutherland and Falconer 1999)

My experience suggested the ten steps were often harder to adhere to in domiciliary settings. For example, hot water and clean towels are not always available for hand washing, the prescriber never signs medication record charts and patients are not subject to 24 hour monitoring. Adhering to the precautions for Fosamax (a drug used in the treatment of postmenopausal osteoporosis to reduce the risk of vertebral and hip fractures) in domiciliary settings is especially difficult when nursing visits are hurried or time limited. The precautions are described below.

Fosamax should be taken in the morning upon rising for the day, at least half an hour before taking any food, drink or drug for the day, with a glass of ordinary tap water. Other drinks (including mineral water), food and some drugs may reduce the absorption of Fosamax. To facilitate delivery to the stomach and reduce the potential for local and oesophageal irritation/undesirable events Fosamax should only be taken on rising for the day with a full glass of water. Do not chew or allow the tablet to dissolve in the mouth because of the potential for oropharyngeal ulceration. Do not lie down until after first food which should be at least 30 minutes after taking the tablet. Fosamax should not be taken before bedtime or before rising for the day.

Box 1.2: Precautions for the use of Fosamax (manufacturer's insert)

The potential for things to go wrong in medication administration seemed to increase when responsibility for medication related activities was transferred from district nursing to home care services. Home carers are largely unqualified and have until recently received limited formal training (Kett 1998; Bell 2001). Sometimes things appeared to go wrong due to difficulties in communication and collaboration, as illustrated by the case study below.

Mr Straus was 79 years old and had a history of atrial fibrillation and stroke. He was referred to the district nursing service by an anticoagulant nurse at the local hospital who was concerned that he would not take his medication as prescribed. He was prescribed Warfarin 1mg at night (that is one blue tablet). Mr Straus lived alone and was housebound. I assessed Mr Straus at home. He admitted that he had a poor memory and doubted that he would take his medication as prescribed.

Mr Straus was visited three times a day by home carers who assisted with meal preparation and personal hygiene. He was keen that they should also prompt his medication. I telephoned the home care coordinator who agreed, as long as I loaded a medication compliance device.

After my initial visit the district nursing service visited every week to load a medication compliance device. We also took a blood sample every four weeks. This was sent to the hospital where its clotting properties were measured. The anticoagulant clinic faxed the results to the district nursing service. This arrangement worked well until we were directed to increase the dose from 1mg to 2mgs. In accordance with these instructions a nurse visited Mr Straus and added Warfarin 1mg to each of the nighttime dosing compartments. The following day the home carer phoned to complain there were two blue tablets in each of the nighttime dosing compartments instead of one. She assumed we had made a mistake and admitted that she had discarded one tablet the previous evening.

Box 1.3: Critical incident related to difficulties in communication and collaboration identified in practice

At other times things appeared to go wrong simply because the very nature of domiciliary care settings predispose the medication management process to error, as illustrated by the case study below.

Mrs Finnegan was 78 years old and had a history of mental health problems. She was referred to the district nursing service by her GP who was concerned that she was not taking her medication as prescribed. Mrs Finnegan was semi-housebound and lived alone in sheltered accommodation. She was prescribed Bendrofluazide 2.5mg in the morning and Risperidone 4mg at night. I assessed her at home in the presence of her sister. Her memory was poor and she appeared anxious and depressed. Mrs Finnegan said she sometimes mislaid her medication and maybe missed a few doses but that it was not a significant problem. Her sister disagreed and said excess supplies had accumulated over the last few months.

Mrs Finnegan had a care package that included meals on wheels and morning and evening home care. The home carer assisted with meal preparation and personal hygiene. I suggested she also prompt medication. Mrs Finnegan agreed but said she did not know what all the fuss was about. There was no home care documentation to be found but her sister had written the name and number of the home care coordinator in her diary.

I telephoned the coordinator. She apologised for the absence of documentation but explained that Mrs Finnegan threw items that were unfamiliar away and had put the last two sets of home care notes in the dustbin. They had since decided to record their visits on the kitchen calendar instead. She said she would ask the home carer to prompt medication so long as I loaded a medication compliance device.

After my initial visit the district nursing service visited every week to load a medication compliance device. So that it would not get discarded it was put out of sight. Our contact details were recorded on the kitchen calendar. This arrangement worked well for the first few weeks but then the carer called to say she could not prompt that morning's medication because all the tablets were in a pile on the kitchen table and Mrs Finnegan was using the device as a jewellery box (filling each of the dosing compartments with earrings).

Box 1.4: Critical incident related to the nature of domiciliary care settings identified in practice

It was experiences such as these that prompted my desire to learn more about patient safety and to explore what arrangements were in place to minimise the risk of adverse events when responsibility for medication related activities was transferred from district nurses to home care services. A focused literature search was devised and conducted using a variety of electronic databases. These databases are listed below.

Databases	Description
AgeInfo	References in the field of older people and ageing (1989 to present).
Caredata	References in the field of social work, social care, housing, education and health (now social care online) (1985 to present)
CINAHL	References in the field of nursing and allied health (1982 to present).
Medline	References in the field of biomedical research. Other subjects include nursing, pharmacology and health care delivery (1966 to present)
Pharm-line	References in the field of pharmacy practice and the clinical use of drugs (1978 to present)
Social Services Abstracts	References in the field of social work, human services, social welfare and community development (1980 to present)

Box 1.5: Databases searched

The research topic was broken down into key concepts. These were patient safety, medication, and district nursing and home care services. All possible words and phrases that might describe each of the key concepts were then considered. Related words are listed below. Truncation symbols were used to retrieve all variant forms of the words and phrases identified.

Patient safety	Medication	District nursing and home care services
Accident	Medicine	Social care service
Error	Drug	Community care service
Risk	Tablet	Welfare service
Adverse event	Pill	Domiciliary service
Averse incident		Primary care service
Critical incident		Community nursing service
		Home help service
		Homemaker service

Box 1.6: Key concepts and related terms

Key concepts and related concepts were combined in order to retrieve relevant information. Most databases used Boolean Operators to do this. The figures below illustrate the way in which key concepts were combined. Searches were limited to articles published in the English language. The titles and abstracts generated by each search were reviewed and all potentially relevant full text articles obtained. The

reference lists of retrieved articles were also scrutinised to identify other appropriate literature.

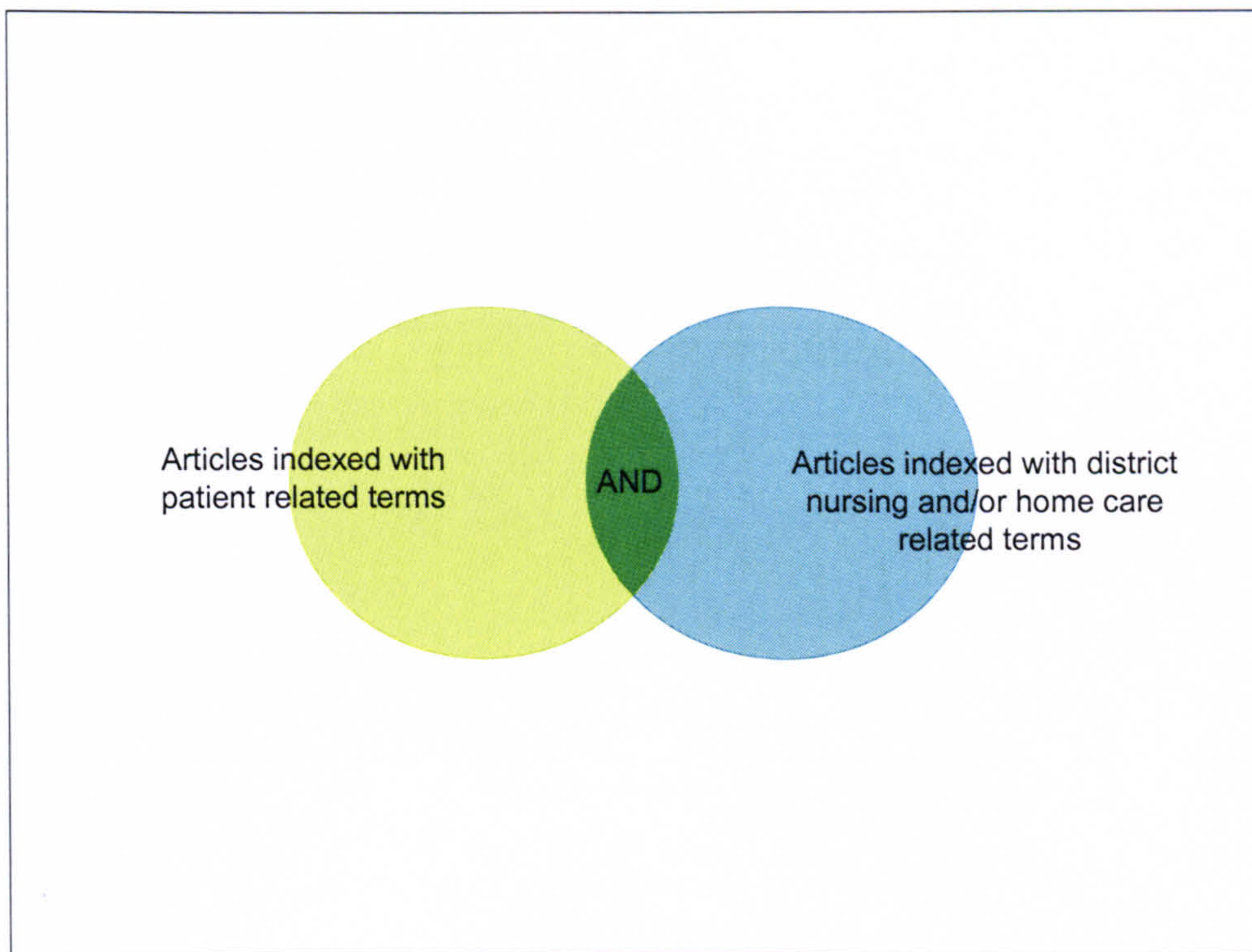


Figure 1.1: Combined articles (patient safety and district nursing and/or home care)

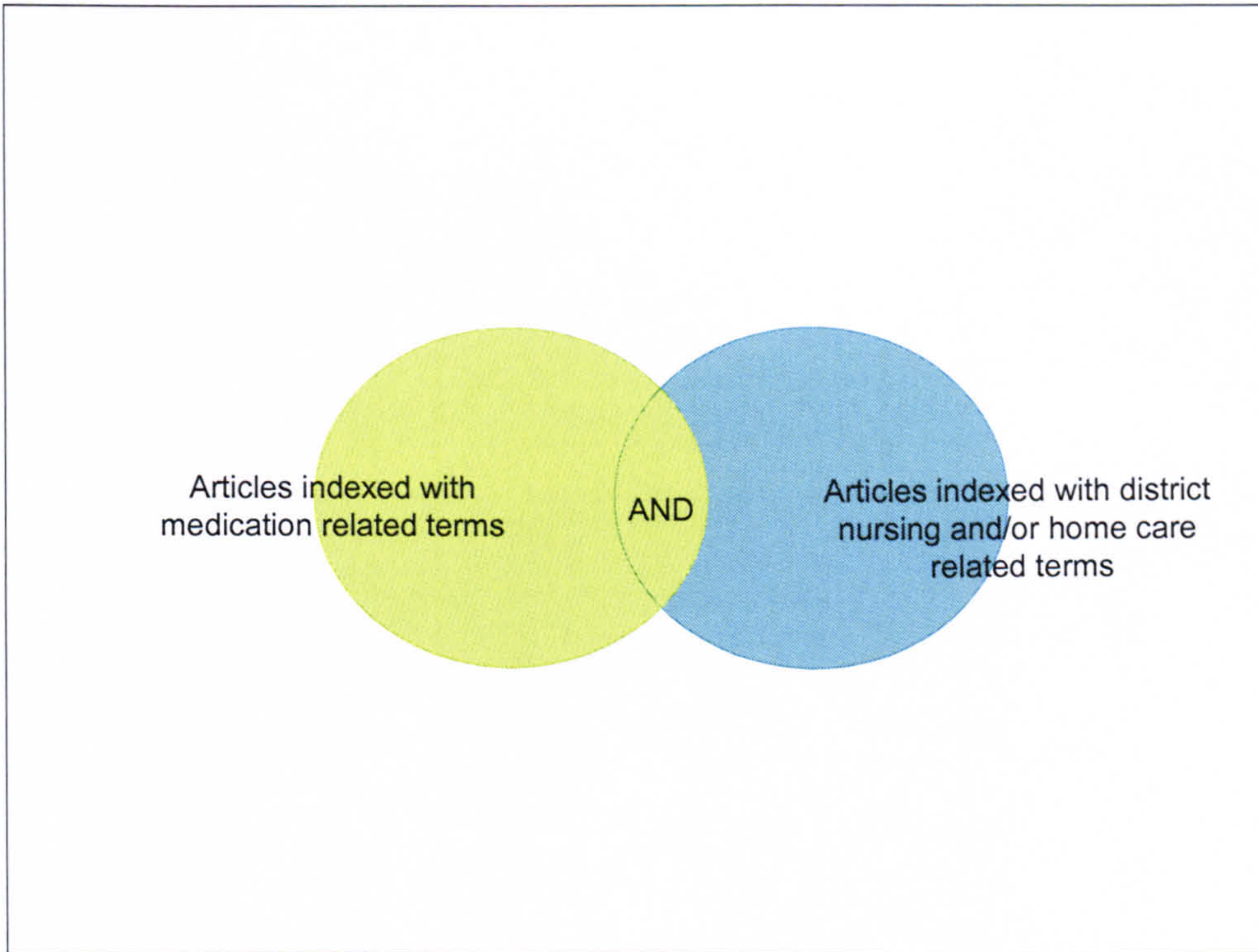


Figure 1.2: Combined articles (medication and district nursing and/or home care)

I also approached a range of relevant organisations (including the British Association of Domiciliary Care Officers (BADCO)¹, the United Kingdom Home Care Association (UKHCA)² and UNISON³) in October/November 1999. This exercise was repeated periodically over the subsequent six years.

1.2. Patient safety

This section examines the information gathered in relation to patient safety from the database search described in section 1.1. Terminology has varied when referring to users of health and social care services from patients or clients, to consumers or users. The present study will use the term patients when referring to users of health and social care services.

1.2.1. Healthcare context

Exploration of the literature revealed that until about ten years ago relatively little attention was given to patient safety as a concept in healthcare. It was assumed that

¹ BADCO is an individual membership association for managers of domiciliary care in the public and independent sectors.

² UKHCA is the national representative association for independent sector organisations.

³ UNISON is a trade union representing people who work in public services and the voluntary and private sectors

if practitioners were working in a modern healthcare environment and were diligent and well trained then safety would take care of itself (Donaldson (undated)). Patient safety was not conceptualised as a systems issue in the way that safety had been in other complex high technology industries for many years.

More recently there has been an exponential growth in policy and research attention to patient safety. This started in the United States with the launch of an initiative by the Institute of Medicine (IoM) to assess and improve the quality of care across the nation. The IoM's seminal report *To Err is Human* (Kohn et al 1999) documented the serious and pervasive nature of medical error and converted an issue of increasing professional awareness into one of substantial political and public concern (Leape et al 2002). The US congress subsequently issued a directive to all governmental agencies to implement the recommendations for care delivery redesign outlined in the influential report *Crossing the Quality Chasm* (IoM 2001).

An Organisation with a Memory (Department of Health (DH) 2000a) established patient safety as a national priority in the United Kingdom. It outlined the scale and nature of error in the National Health Service (NHS) and examined how lessons might be learnt from incidents that resulted in (or had the potential to result in) serious harm. A systems approach was advocated. This views human errors as having their origins in the management failures and organisational deficiencies that create error-producing conditions in the workplace. *Building a Safer NHS for Patients* (DH 2001a) subsequently set out the government plan for promoting patient safety. Central was the establishment of the National Patient Safety Agency (NPSA) whose role is to collect and analyse information and help to ensure that organisational learning takes place and is disseminated across the NHS. The NPSA encourages staff to use root cause analysis techniques to identify system weaknesses rather than individual failure. Key mechanisms to learn and share patient safety lessons are outlined in *Seven Steps to Patient Safety* (NPSA 2003) and *Seven Steps to Patient Safety in Primary Care* (NPSA 2005).

A database review by the Patient Safety Research Network (PSRN) found research activity in patient safety increased threefold from 1990 – 2000 (PSRN 2004). But this increase related almost entirely to research in hospital rather than primary or

domiciliary care settings. This is problematic because things happen differently in hospital and primary care settings and the lessons learnt in one might not be directly transferable to the other. These differences are described below.

'[Primary care] aims to provide longitudinal personalised care that is customised to individual beliefs, needs, values, and preferences across a broad spectrum of concerns relating to health and illness. This leads to variation in practice and, in some instances, justifiable deviation from recommended practice. As the first clinical port of call, general practitioners deal with a very broad range of symptoms and signs, many of which cannot easily be categorised into a clear diagnosis. Given the different population of patients, the different priorities for their care, and the ambiguities of that care in relation to diagnosis and patient choice, delineating 'right or wrong' practice is more complex in primary care than in secondary care' (Wilson and Sheikh 2002: 584).

'Primary care medicine differs from other branches of medicine in several respects. Clinical presentation, diagnosis and management often are episodic processes in primary care contexts. Patients and clinicians work together to present and solve problems in short consultations (7 – 15 minutes across Europe for instance). Patients often (but not invariably) present with early manifestations of illness, often against backgrounds of existing psychosocial problems and physical co-morbidities. It is not always possible to arrive at diagnostic certainty, and neither would it be good practice to investigate every problem until this was achieved, as the anxiety generated, procedural risk exposures, excessive costs and inconvenience to patients would be counter productive' (Jacobson et al 2003: 238).

Box 1.6: Key safety considerations in primary care (Wilson and Sheikh 2002; Jacobson et al 2003)

Primary care has experienced a modest upturn in patient safety research activity in the last five years. For example, Dovey et al (2002) used data collected from adverse event reporting systems to develop a preliminary taxonomy of medical errors observed by family practitioners and Ashcroft et al (2005) looked at adverse events in community pharmacy and explored the prevailing safety culture. No comparable research has been undertaken in domiciliary care settings. The NPSA has recently invited applications for a series of research projects aimed at improving prescribing in general practice and medication management in residential care homes, but again no comparable research has been commissioned in domiciliary care settings.

1.2.2. Social care context

Safety is a concept that has figured prominently in social work debates about policy and practice relating to child protection services over the last 20 years (Johnson and

Petrie 2004). At the same time there have been at least 30 public inquiries and many more serious case reviews into child abuse deaths. Their aim was to assign blame and avoid recurrence (Reder et al 1993). Associated countermeasures were directed at improving risk assessment scales (to better predict the degree of risk posed by parental dangerousness) and providing additional training (to improve decision-making and practice consistency).

The case of eight-year-old Victoria Climbié (who died in February 2000 suffering from hypothermia and malnutrition with 128 separate injuries on her body) demonstrated how two decades of public inquiries and serious case reviews had not led to the desired outcomes for children and families or the expected improvements in professional practice (Munro 2005). *Keeping Children Safe* (Department for Education and Skills, DH and Home Office (DES, DH, HO) 2003) set out the government plan for learning and sharing lessons from investigations into unexpected child deaths. One of its key recommendations was to focus on identifying system weaknesses rather than individual failure.

A clinical specialist in social care was appointed to the NPSA in December 2003. Research commissioned by the Social Care Institute for Excellence suggested that root cause analysis techniques be applied to all adverse incidents including those that have the potential to result in harm as well as those that result in serious harm (Bostock et al 2005). It also suggested that policy makers explore options for a parallel to the NPSA in social care to ensure organisational learning takes place and is disseminated across the statutory, voluntary and independent sectors.

Safety has not developed as a concept in the field of adult social work in the way that it has in child protection. *Independence, Well-Being and Choice* (DH 2005a) set out the future of adult social care in England. Although managing risk and the need for protection were a key focus, the emphasis clearly remained on individual assessments of risk (that is risk in relation to the activities of daily living). There have been no debates in policy or practice about the organisational risks involved in managing a service where error can lead to harmful consequences.

1.3. Strategies to minimise risk in home care

This section explores what arrangements are in place that might minimise the risk of adverse events when responsibility for medication related activities is transferred from district nursing to home care services.

1.3.1. Medication related policies

Medication guidelines set standards for safe practice. An audit of 12 independent sector home care providers in the London Borough of Lewisham in 1997 found that only nine had medication related policies and procedures (Taylor and Harris 1997). The National Minimum Standards for Domiciliary Care (DH 2003a) has since stipulated that home care providers in England and Wales should have medication related policies and procedures that protect patients and assist them if they are unable to maintain responsibility for their own medication. The Pharmacy Community Care Liaison group (1998) identified a number of areas that should be considered when developing a medication policy. These areas are listed below.

1. Aims and objective of the policy and relationship with existing policies
2. Responsibilities of the employer and duty of care
3. Which patients will receive support with their medicines
4. Selection and accountability of home carers for this task
5. The home carer's role and that of home care coordinators
6. Whether home carers may administer from fully labelled original containers and/or from medication compliance devices
7. Obtaining prescriptions and medicines
8. Instructions for the use of medicines
9. Storage of medicines in the home
10. Administering medicines including self-administration
11. Putting out doses for administration later
12. Dose forms which may not be administered by home carers
13. Records of medicines administered to clients
14. Disposal of medicines no longer required
15. Medicines purchased by patients including alternative therapies
16. Communication with the GP practice, community nurse and pharmacist
17. Review of prescribed medicines
18. What to do if there are problems with medicines (e.g. missed doses, dose changes and incomplete directions) and who to contact
19. Training and information on medicines

Box 1.7: Key areas that need to be considered when preparing a home care medicine policy (Pharmacy Community Care Liaison Group 1998)

1.3.2. Medication related training

Home care is a largely unqualified and formally untrained occupation. For example, 80% of the workforce has no recognised qualifications or training (DH 1998a). A survey of 1200 independent sector home carers in 1999 found that only 2% of the workforce had undertaken medication related training (Mathew 2000). Since April 2002 all home care organisations registered with the Commission for Social Care Inspection (formerly the National Care Standards Commission) have to provide induction training. This should include training in relation to understanding the importance of supporting patients to take medication as directed by their doctor (Training Organisation for the Personal Social Services (TOPSS) 2001).

The National Minimum Standards for Domiciliary Care (DH 2003a) stipulated that staff should only provide assistance with medication administration when it is within

their competence and they have received the necessary specialist training. The Pharmacy Community Care Liaison Group (1998) proposed a number of objectives for home care training sessions. These objectives are summarised below.

1. To understand local medication policies and clarify responsibilities for medicines use
2. To understand safe procedures for handling medicines
3. To be able to administer medicines safely and effectively
4. To support people who are self-administering medicines
5. To maintain medication records and use them correctly
6. To seek appropriate advice on queries concerning medicines and how to resolve problems
7. To be aware of the ageing process and how drugs are absorbed into the body
8. To understand the purpose of medication compliance devices and how these may be used effectively
9. To be familiar with the different dose forms of medication
10. To have a lay person's awareness of the use and side effects of common medicines
11. To appreciate the role of others concerning medicines

Box 1.8: Suggested home carer training objectives (Pharmacy Community Care Liaison Group 1998)

There is currently no consensus on what constitutes an accredited medication related training programme (NCSC 2004).

1.3.3. Medication related equipment

Bell (1994) argued that home carers should only get involved in medication administration if the medication is preloaded into a medication compliance device. He believed the provision of these devices by district nurses and/or community pharmacists would help dispense with dosage dangers. Some home care providers will only agree to assist with medication administration if medication is preloaded into a medication compliance device (Ewens 1992).

There are two types of commercially designed medication compliance devices including daily dose reminder devices and monitored dosage systems. Familiar daily dose reminder devices include Dosett and Medidos boxes. These are plastic trays divided into days of the week with sliding lids covering compartments for the four daily dosing times of morning, midday, evening meal and bedtime and into which solid oral doses may be loaded once weekly. Once loaded all the carer has to do is

open the box at the instructed time and administer the medicines in the corresponding compartment. Monitored dosage systems (for example, Nomad and Venalink) differ in that medication is sealed in foil blister packaging and the system can only be assembled in a registered pharmacy premises and filled under the supervision of a pharmacist (Royal Pharmaceutical Society of Great Britain (RPSGB) 1999).

Nurses are at times reluctant to load daily dose reminder devices because there is risk of error when medication is transferred from one container into another (Levings and Szep 1999) and they have been advised by their regulatory body only to do so in exceptional circumstances (NMC 2004). As a result many expect community pharmacists to load them instead (McGraw and Drennan 2000). A number of trusts have encouraged the participation of community pharmacists in this activity by instituting remuneration schemes. One such scheme was the monitored dose-dispensing scheme funded by Camden and Islington Health Authority (Shulman 1999). Patients were eligible if they had home carers who were prompting or assisting with medication administration. The scheme reimbursed community pharmacists for dispensing medication into monitored dosage systems at 28-day intervals. These were supplied along with medication administration record charts and an instruction sheet for home carers. An evaluation of the scheme reported that community pharmacists, district nurses and home care coordinators believed the provision of monitored dosage systems had reduced the risk of medication error (Drennan et al 2002).

There is currently no evidence from empirical research to suggest home carers make fewer dosing errors when administering from medication compliance devices than from standard packaging.

1.3.4. Other strategies

1.3.4.1. Briefing documents

Home carers need background information about each patient they visit. This should include information about their medication related needs. A joint project between the Social Policy Research Unit (SPRU) and Bradford Social Services Elderly Division explored a method for keeping home care well briefed through the

provision of additional patient documentation in the home. Components of the briefing documents are listed below.

1. Main reasons for service/results sought from service
2. Changes to work towards
3. Changes to watch out for
4. Special needs/requests
5. Other important information
6. A profile of a patient's expected abilities for daily living tasks
7. A 'Daily Record' where every visit is entered: times, staff names, tasks undertaken, observations and messages to other workers

Box 1.9: Components of home carer briefings (SPRU (University of York) 2000)

The briefing documents were found to improve care delivery when patients were new to the home care service and when they had communication or cognitive difficulties (SPRU (University of York) 2000).

1.3.4.2. Assistive technologies

A key driver for the development of assistive technologies is their potential to support existing services and make the best use of human effort (Audit Commission 2004a). Assistive technologies (telemedicine in particular) can support medication management in domiciliary settings.

One such initiative is the Staffordshire Medicine Reminder Initiative. Patients are eligible if they are already in receipt of social care services (including home care) and need prompting with medication administration. The service includes the provision of an electronic prompting device. This is a unit that is plugged into an existing telephone line and power socket. It is programmed to chime at the point at which medication is due and patients are required to press a flashing button to acknowledge they have heard the chime. The unit will then play a pre recorded audio message to tell the patient which tablet to take. A second button will flash which the patient needs to press in order to acknowledge they have taken their medicine. Not doing so cascades a series of events via a 24-hour response centre to determine whether the patient is experiencing problems. Appropriate referral can then be made if the patient is not happy about taking the medicine, or experiencing

practical difficulties with administration. Education of home carers, district nurses and response centre staff on medicines management forms part of the initiative. Evaluation findings are not currently available.

1.4. Aims and structure of thesis

My initial exploration of the literature indicated that patient safety is the focus of increasing research activity and policy attention, particularly in relation to secondary care settings. However, a clear gap was identified in understanding patient safety in domiciliary settings. There were some limited examples of policies and local initiatives designed to reduce the risk of adverse events when home carers have responsibility for medication related activities for older people living at home. But there was no information available from empirical research to assess the appropriateness or effectiveness of these initiatives.

These findings prompted my decision to undertake a study in order to better understand the circumstances in which home carer involvement in medication related activities for older people living at home might jeopardise patient safety. An assumption was made that such an understanding would help determine whether existing strategies to diminish the risk of error were appropriate and might also enable the identification of other or more appropriate strategies. The study proposal was completed in April 2000 and pilot work started in July 2000.

The thesis is organised as follows:

- Chapter 2 provides a historical account of the development of community care services in order to help understand the economic, organisational and ideological complexities that create difficulties in communication and collaboration between district nursing and home care services.
- Chapter 3 describes the medication management process for older people living at home in order to help understand the physiological, pharmacological, socio demographic and system complexities that might create difficulties when responsibility for medication related activities is transferred from district nursing to home care services.

- Chapter 4 considers how researchers and investigators have conceptualised the occurrence and approached the analysis of error and adverse events in hospital settings and explores the relevance of this work to the aims of the study.
- Chapter 5 provides an account of the study methodology and a contextual description of the study sites and respondents.
- Chapter 6 describes the study findings in relation to the variety of medication related activities undertaken by home care and district nurse respondents and the factors that determined their involvement in these activities.
- Chapter 7 explores the study findings in relation to the range of factors that predisposed older people to adverse events and creates a taxonomic model that provides a unique and comprehensive account of the circumstances in which home carer involvement in medication related activities for older people living at home might jeopardise patient safety.
- Chapter 8 analyses the utility of the taxonomic model apropos the identification of appropriate and effective strategies to minimise errors and adverse events in this area of care.

Chapter 2: Communication and collaboration between district nursing and home care services

The purpose of this chapter is to provide a historical account of the development of community care services in order to help understand the economic, organisational and ideological complexities that create difficulties in communication and collaboration between district nursing and home care services. The chapter is organised in four chronological phases.

2.1. Unified provision 1946 - 71

This section describes the way in which the post war welfare legislation resulted in the subordination of domiciliary services to the hospital sector and allowed home help and district nursing roles to be shaped in a pragmatic and uncoordinated manner in response to local circumstances rather than deliberately planned initiatives.

2.1.1. Post war legislation

The 1946 National Health Service (NHS) Act created a tripartite health service (the hospitals, the local health authorities, and the GPs). Each component was separately managed and funded. The home help service and the district nursing service were managed and funded by local authorities (called local health authorities when administering public health legislation). Local authorities derived their funds from government grants and local rates. The hospital sector derived its funds from the Ministry of Health. The management and funding of the district nursing and home help services from 1946 – 1971 is illustrated below.

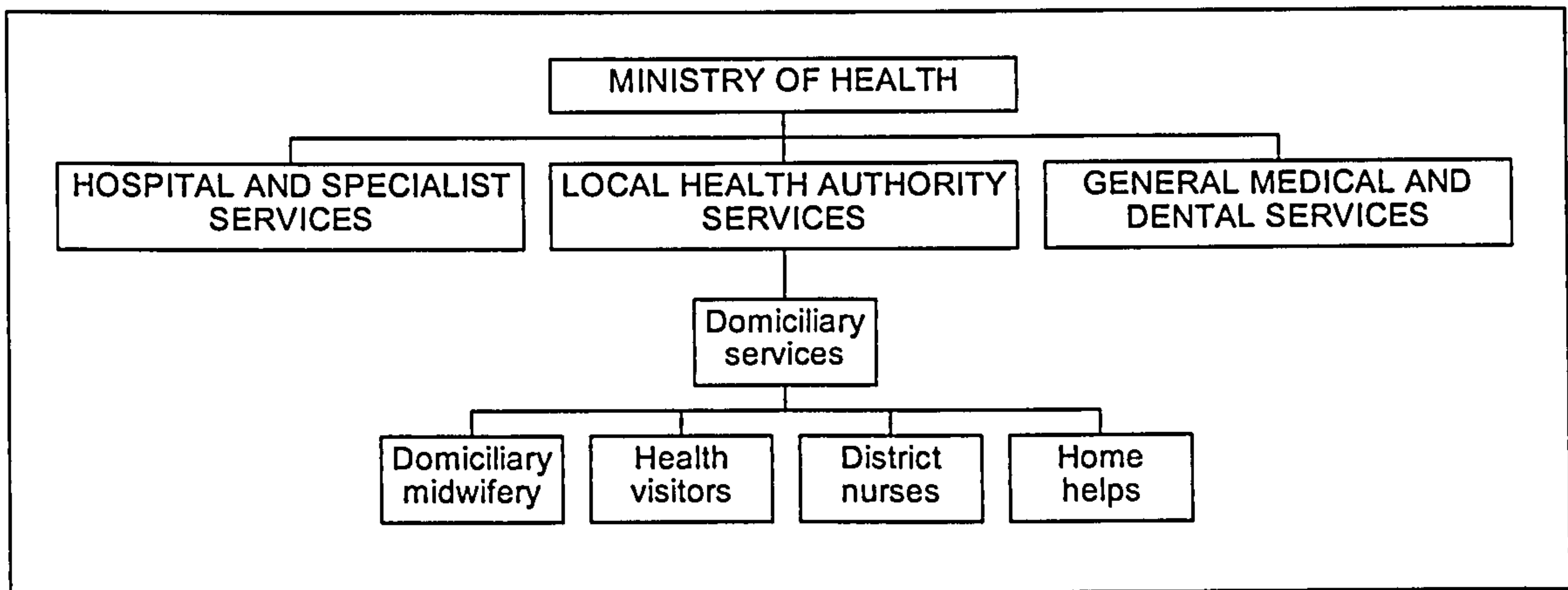


Figure 2.1: Management and funding of district nursing and home help services from 1946 – 1971

The 1946 NHS Act and the 1948 National Assistance Act distinguished between old people who were sick and in need of constant nursing and medical attention and those who were infirm and in need of care and attention. The sick were the responsibility of the hospital sector where they would either be treated in geriatric departments or classified as chronically sick and nursed in long-stay hospital annexes. The infirm were the responsibility of local authorities. The 1948 National Assistance Act recognised the principle that while hospital and nursing services should be delivered free, charges for residential care and domiciliary welfare services (such as home help) were acceptable as long as they were reasonable and based on a means test.

There was little explicit provision for older people in the post war welfare legislation (Welshman 1999) and domiciliary services received little attention. The primary focus was on hospital and specialist services. Long-stay hospital beds and residential care homes were the main forms of provision for older people who could not be cared for by families and neighbours (Means and Smith 1998). A mandatory responsibility was not imposed on local authorities to provide home help services until the 1968 Health Service and Public Health Act. It has been suggested that policy makers feared the development of domiciliary services for older people might erode the responsibilities of families and neighbours (Welshman 2000). The subordination of domiciliary services to the hospital and specialist services meant that home help services developed in a piecemeal fashion and were subject to strong regional variations.

2.1.2. District nursing and home help responsibilities

The purpose of the home help service was to provide domestic assistance to people living at home (such as cleaning, making beds, lighting fires and washing laundry) and that of the district nursing service was to provide nursing care (such as administering injections, maintaining personal hygiene and dressing surgical wounds or ulcerated legs). The recipients of district nursing and home help services were mostly old people.

The type of work undertaken by home helps was considered akin to what women routinely undertook as housewives and mothers (McEwan 1959) and for which they required limited training (Pengelly 1988). District nurses in contrast were often highly qualified. Despite these differences, considerable overlap was observed between the actual work undertaken by district nursing and home help services (Hockey 1966; Clarke 1988). The areas of overlap are now explored.

2.1.2.1. Home helps and quasi-nursing activities

Home helps often performed quasi-nursing activities such as helping someone to wash or bathe, cutting toenails, administering medication and applying dressings (Hunt and Fox 1970; Harbridge 1979; Howell, Boldy and Smith 1979). Since some local authorities charged for home help services, quasi-nursing activities were charged for when undertaken by home helps.

The likelihood of home helps participating in these activities depended on two factors. The first was the amount of home help support provided by local authorities. For example, the borough of Worthing only allocated older people between one and two hours of home help each week and only 1% of recipients were helped to wash or bathe, whilst the borough of Coatbridge allocated between nine and ten hours and 5% of recipients were helped to wash or bathe (Harris and Clausen 1968a; Harris and Clausen 1968b). The second was the level of discretion exercised by individual home helps.

Levels of home help provision depended on the willingness of local authorities to commit financial resources to caring for older people living at home and on the

availability of female labour. Women demobilised from industry, civil defence and the forces regarded home help work as poorly paid and low status. The shortage of home helps was greatest in areas where local conditions produced keen competition for female domestic labour. An example of this is in holiday towns where boarding houses and hotels offered better paid cleaning work during the summer months (Marks 1975).

Individual home helps exercised considerable discretion. They were expected to undertake only those activities agreed with home help organisers but in practice they gave extra help to people with whom they had developed close and caring relationships. Home helps worked in isolation and had little contact with organisers. In this environment the rules seemed irrelevant and were quickly forgotten (Welshman 2000). Job satisfaction often depended on their relationships with patients and many found it difficult to ignore the activities that clearly made older people happy (Rees 1976). Help was sometimes determined by choice, personality and friendship rather than by professionally defined roles (Marks 1975).

2.1.2.2. District nurses and domestic activities

District nurses often undertook domestic activities, such as cooking food, lighting fires, and fetching prescriptions (Hockey 1966). One study suggested that 25% of district nursing work could be transferred to home helps and nursing auxiliaries (Hockey 1968). Since nursing services were free, domestic activities were not charged for when undertaken by district nurses.

The likelihood of district nurses participating in domestic activities depended on a number of factors. The first was on levels of home help provision and the second was on the allocation of care by home help organisers. Home help organisers investigated referrals to the home help service. The majority of home help organisers had no job related training (Hunt and Fox 1970) and priorities for the service were not laid down by legislation. Many district nurses believed their assessments were based on personality and friendship rather than patient need and called for the home help service to be brought under district nursing control (Hockey 1966).

The likelihood of district nurses participating in domestic activities also depended on levels of district nursing provision. Some local authorities employed more than three times as many nurses per head of population as others (Ottewill and Wall 1990). Fourthly, it depended on whether local authorities employed district nursing auxiliaries. Activities transferred to auxiliaries included routine nursing care (preventing pressure ulcers and managing incontinence), personal care (help with toileting, washing and dressing, and giving medication), home help type jobs (preparing food and drinks, housework, shopping and collecting pensions) and delivering and instructing in the use of aids and equipment (Dunnell and Dobbs 1982). Only 40% of local authorities employed nursing auxiliaries in 1967 (Clarke 1988).

2.2. Fragmentation and joint working 1971 – 90

This section describes the first major reorganisation of the health and personal services after the introduction of the post war welfare legislation. It explores the way that tightening boundaries in the hospital sector necessitated experimentation in domiciliary provision and how the evolution of home help services as major providers of personal care was frustrated by organisation, structural and financial difficulties at the health and social care boundary. It also explores difficulties defining what was meant by health and social care.

2.2.1. Funding and administrative divisions

It was generally recognised that the work of the personal services was fragmented between local authority departments, voluntary organisations and hospital departments. The Seebohm Committee was established in order to consider what changes were desirable to secure an effective family service. They recommended the integration of the personal social services and the establishment of a social services department in each local authority. The home help service became part of the new departments with the implementation of the 1971 Local Authority Social Services Act.

A major reorganisation of the NHS was underway at the same time. The Minister of Health had established a number of working parties with a focus on the need to reduce inefficiencies associated with the tripartite structure. The main purpose of the

subsequent legislation was to provide improved administrative machinery that would give patients a better service. The 1973 National Health Service Reorganisation Act removed responsibility for medical and nursing personnel from local authorities and placed them in newly reorganised health authorities.

The 1971 Local Authority Social Services Act and the 1973 National Health Service Reorganisation Act created administrative and funding divisions between home help and district nursing services. Local authority social services departments administered home help services and area health authorities administered the district nursing services.

There were 90 area health authorities that had coterminous boundaries with the reorganised local authorities. Home help organisers were responsible to directors of social services (who usually held a social work qualification) and district nurses were responsible to area nursing officers. Social services departments derived their funding from government grants, local rates and means tested contributions. Health authorities derived their funding from central government. The staff and running costs of the district nursing service were no longer financed out of rate and grant income but by revenue advances which the Department of Health and Social Security made to the area health authorities.

2.2.2. Joint initiatives

From the early 1950s, the Ministry of Health had sought to contain the number of long-stay hospital beds. Drawing the boundary more tightly around an acute hospital model suited policy makers concerned about costs (Lewis 2001) and doctors who sought to limit the definition of healthcare in line with the prevailing acute ideology in medicine (Hall and Bytheway 1982). A freeze on long-stay beds meant definitions of people who were infirm and in need of care and attention were extensively modified to include people who were ever frailer, more dependent and increasingly lacking in mental capacity (Means, Morbey and Smith 2002). In order to prevent an influx of older people from the hospital sector, local authorities avoided increasing the number of places it made available in residential care homes and were reluctant to expand domiciliary provision.

Complaints about bed blocking (that is older people staying unnecessarily in hospital because alternatives in the residential or domiciliary sector are not available) emerged in the late 1960s. Concomitant complaints emerged regarding the cost and staffing implications of increasing dependency levels in residential care homes. The government believed the solution lay in the development of joint planning between health and local authorities. The 1973 Health Service Reorganisation Act provided for the establishment of formal collaborative machinery centred upon Joint Consultative Committees and Joint Care Planning Teams. They were followed in 1976 by the introduction of joint finance arrangements. Joint finance was a mechanism by which central government allocated specific funds to health authorities that were to be transferred to local authorities to meet the cost of jointly approved schemes to facilitate the transfer of people from health to social provision or provide support for people to remain in the community rather than entering hospital. Particular emphasis was put on developing services for older people.

In the early years of joint finance there were a number of schemes that supported local authorities as they attempted to cope with the increasing dependency levels in residential care. An example of such a scheme was the establishment of high dependency homes staffed by residential care workers and qualified nurses (Means, Morbey and Smith 2002). Joint funding also stimulated the development of innovative domiciliary projects including hospital discharge schemes, intensive home care schemes, tucking in and night sitting schemes, schemes to support informal carers, and crisis intervention schemes. These projects initiated the shift (albeit gradual and disjointed) from home helps mostly providing assistance with domestic activities to home carers providing assistance with personal care activities. Notable projects and forerunners to future mainstream home care services are described below.

The Birmingham domiciliary night watch service was formed to provide night care to sick and older people in their own homes. The night watch service formed part of the home help service. The night watcher was expected to perform any task normally undertaken by a relative or friend (Daffern 1984). The Darlington home care assistant scheme was set up in order to support frail older people in their own

homes as an alternative to long stay hospital care. The home care assistant role encompassed a number of tasks including domestic help and basic personal care as well as social and recreational activities (Stone 1986). The Strathclyde Social Work Department established a similar scheme that helped older people with activities including toileting, bathing, getting in and out of bed, supervising medication, general housework, preparing meals, and shopping (Young 1985). Some of these schemes were free at the point of delivery and others required a means tested contribution (for example, the Birmingham night watch service was delivered free for the first six weeks and means tested thereafter).

One of the most comprehensively evaluated of the personal care schemes was the Kent Community Care Project (Challis and Davies 1984). The purpose of the project was to provide an effective and efficient alternative to residential and long-term hospital care for older people. Qualified and experienced social workers and a district nurse managed the project. They had budgetary responsibility and were encouraged to purchase services beyond the statutory sector in order to develop packages of care tailored to meet the individual needs of older people living at home (so long as they devoted to any one client resources not more than two-thirds of the marginal cost of a place in residential care). This flexible method of working allowed the project managers to become case co-ordinators who brokered help from community care workers including home helps and paid and unpaid volunteers. Care workers assisted older people with practical tasks and personal care activities. Evaluators found that the project was more cost effective than residential care and resulted in lower rates of admission to residential care and a reduction in the use of long stay hospital beds (Challis and Davies 1984).

2.2.3. Difficulties in collaboration and coordination

All of this activity was not without its tensions. These included organisational, structural and financial difficulties. One example of this was different planning and funding priorities between health and local authorities. Local authorities prioritised older people because of their role as major resource consumers and because of the pressures of increasing dependency levels in residential care homes, whilst health

authorities concentrated on the mentally ill because of the impending rundown and closure of large mental hospitals (Means and Smith 1994).

Structural obstacles included difficulties related to irregular geographical boundaries. The 1980 Health Service Act replaced the 90 area health authorities with 192 district health authorities, which meant local authorities were no longer coterminous with a single health authority. Lack of coterminosity made it difficult for social services departments to provide adequate representation on all the Joint Consultative Committees and Joint Care Planning Teams (Means, Morbey and Smith 2002). Where health and local authority boundaries did not match it was also difficult to agree joint plans and priorities because the two organisations were dealing with different populations. Financial obstacles to joint working are also well documented (Holtom 2001) and include different health and local authority budget cycles.

2.2.4. Impact on home help and district nursing responsibilities

Despite the development of a number of innovative domiciliary projects, exhortations to jointly plan were conspicuously unsuccessful (Lewis 2001) and the extent and rate to which home help services evolved and adapted differed between local authorities. Mainstream home help remained the predominant model of provision in most areas (Davies et al 1990; DH and Social Security Social Services Inspectorate (DH and SSSSI) 1987). Furthermore, in areas that encouraged service diversification, definitions of social and health care needs were problematic. These difficulties are now explored.

2.2.4.1. Definitions of health and social care needs

The creation of separate social services departments suggested social and health care needs were qualitatively different, which meant they could be distinguished and care providers allocated accordingly (Means and Smith 1985). Older people in need of social care were the responsibility of the local authority and those in need of health care were the responsibility of the health authority. But large numbers of older people had ambiguous or intermediate needs. Ambiguous or intermediate health and social care needs included those that were nursing in the context of other medical problems, but that on their own had a more ambivalent status. Resource limitations

encouraged health and local authorities to minimise their caring responsibilities for older people who had intermediate needs (Lewis 2001).

Help with washing and bathing was a classic example. Health authorities acknowledged responsibility for assistance with washing and bathing for people suffering from medical disorders requiring skilled nursing care but they did not acknowledge responsibility for people assessed as having no medical need. Many frail older people had no known medical disorder but were nevertheless unable to look after their own personal hygiene. Health and local authorities often failed to agree on whether a person was in need of a health or social bath (Badger et al 1989; Twigg 1997) and many older people unable to look after their own hygiene fell into a gap between health and local authority provision (Age Concern 1990). Defining responsibilities for medication administration was also problematic. Davies et al (1990) suggested this was due at least in part to the fact that giving medication has such variable meanings from simply passing the patient a glass of water to taking responsibility for the timing and accuracy of doses.

2.2.4.2. Negotiating responsibilities

In the absence of government guidance, definitions of health and social care needs were negotiated at a local level (Davis et al 1990). A small number of health and local authorities collaborated to develop detailed protocols that set out the responsibilities of home care and district nursing services.

West Birmingham Health Authority developed one such handbook to determine whose responsibility it was to provide the kind of help that did not fit neatly into the province of either personal care or nursing care (Salutis Partnership 1991). They created a typology to clarify whether and under what circumstances home carers and district nurses should undertake certain activities and developed a tool that would enable service providers to reach decisions about who should be delivering care. Tasks were defined according to how complex or technical they appeared. For example, feeding with a spoon was considered an uncomplicated task that could be undertaken by a home carer whereas feeding through a nasogastric tube (a feeding tube that is placed through the nose into the stomach to deliver nutrition to people who are unable to eat by mouth) required more specialised knowledge and could

only be undertaken by a district nurse. Since some local authorities charged for home help services, personal care activities were charged when undertaken by home helps but delivered free when undertaken by district nurses.

2.3. Supporting older people 1960 – 2000

This section charts the shift from institutional forms of provision for chronically sick and frail older people to a more coherent policy of community care. It describes the way in which the community care reforms radically altered the organisation and delivery of home help services but failed to differentiate between what was meant by health and social care.

2.3.1. Disillusionment with long-stay hospital and residential care

From 1960 there was growing disillusionment with long-stay hospitals and residential care homes as the main forms of provision for chronically sick and frail older people. Disillusionment arose because the quality of care they provided was called into question. Townsend (1962) found that many older residents in care homes suffered loss of occupation, feelings of isolation, loss of privacy and collapse of powers of self-determination. There was also growing public concern in response to reports of cruelty in long-stay hospitals (Robb 1967). People increasingly believed the wellbeing of older people was better served by supporting them at home for as long as possible (Audit Commission 1985).

Disillusionment also arose because annual expenditure on residential and nursing home care rose from £10 million in 1979 to £459 million in 1986 and £1 872 million in 1991 (Means and Smith 1994). The explosion in public sector funding was a consequence of an amendment by the Department of Health and Social Security to the supplementary benefit regulations that made it easier for low-income residents of private residential and nursing homes to claim their fees from the social security system. Access to benefits was based on assessments of financial entitlement rather than on assessments of need for residential or nursing care. No funds were available if people wanted to be supported in their own homes. This had the effect of encouraging health and local authorities to place people in private residential and nursing homes rather than supporting them in their own homes. The effects of this shift in expenditure was analysed by the Audit Commission (1986) who identified

the perverse incentives that such a system of funding created and also criticised the organisational fragmentation and failure to match resources to needs in community care. They concluded that strategic change rather than incremental tinkering was required and called upon central government to set up a high level review to come to clear decisions about these issues.

2.3.2. Developing a coherent community care policy

Sir Roy Griffiths was subsequently appointed to undertake a review of community care, the remit of which was 'to review the way in which public funds are used to support community care policy and to advise [the secretary of state] on the options for action that would improve the use of these funds as a contribution to more effective community care'. The Griffiths Report was published in March 1988. A number of themes dominated. The first was that consecutive governments had failed to develop any link between the objectives of community care policy and the resources made available to meet those objectives. The second was responsibilities between health and local authorities were unclear and co-ordination was not well developed. The third was the system of subsidising private and voluntary sector residential and nursing home places was wasteful because of the absence of needs based assessments for residential and nursing care.

The White Paper *Caring for People* (DH 1989) was published the following year. The changes it described followed the main recommendations of the Griffiths Report and were intended to enable people to live as normal a life as possible in their own homes, provide the right amount of care and support to enable people to achieve maximum independence, and give people a greater say in how they live their lives and the services they need to help them to do so. In order to achieve these objectives the White Paper proposed a number of changes in the way that social care was delivered and funded. These changes are listed below.

- Local authorities should be the lead agency responsible for assessing individual need, designing care arrangements and securing their delivery within available resources
- Local authorities should produce clear plans for the development of community care services, consistent with the plans of health authorities and other interested agencies
- Local authorities should make maximum use of the independent sector
- There should be a new funding structure for those seeking public support for private residential and nursing home care
- Local authorities should manage social care budgets regardless of whether care is provided at home or in an institution
- Local authorities should establish inspection and registration units responsible for checking standards in residential care homes

Box 2.1. Key proposals for community care reform (DH 1989)

The key components of community care were services that responded flexibly and sensitively to the needs of individuals and their carers, allowed a range of options for consumers, intervened no more than is necessary to foster independence and concentrated on those with the greatest need. The changes were endorsed in the 1990 NHS and Community Care Act. The new arrangements were funded through a special transitional grant (available until 1998) that transferred money from the social security budget (which previously met the cost of residential and nursing home care for people on low incomes) to local authorities. The community care legislation was phased in over two years and fully implemented in April 1993.

The reforms radically altered the organisation and delivery of all community care services. The implications for the organisation and delivery of home care services are now discussed.

2.3.2.1. Implications for the organisation and delivery of home care services

Home help organisers were no longer responsible for investigating referrals. The legislation required that the provision of services be dependent on needs based assessments. Local authorities appointed community care assessors to undertake these assessments. They had no involvement in the day-to-day running of community care services and the assessment and provision functions of social

services departments were entirely separate. The community care assessment process is summarised below.

- Consideration of the patient's care needs
- Comparison of these needs against local authority eligibility criteria in order to determine whether the individual is entitled to receive publicly funded social care
- A decision about services
- Financial assessment in order to determine whether the patient is expected to contribute to the cost of services

Box 2.2: The community care assessment process

At the end of the assessment process, the community care assessor was expected to prepare a clearly written statement describing the identified care needs (including medication related needs) and how these needs will be met. This statement is called a care plan (see Appendix 1). Home care is allocated in standardised blocks of 15 minutes according to the activities needing to be undertaken. Information contained in the care plan includes the time of day the service is required and the amount of time allocated to undertake the scheduled activities.

The community care reforms introduced a mixed economy of welfare provision. Local authorities were no longer the sole providers of care services. Community care assessors secured the delivery of services from providers in the local authority and independent sectors and purchased home care under a number of different contracts. These contract types are described below.

- Block: Payment for a pre-determined number of hours or patients whether taken up or not
- Call-off: Price per hour specified in advance and paid when the service is provided
- Spot: Price agreed and paid when the service is provided
- Cost and volume: Guaranteed block purchase of hours plus negotiable option to purchase further hours of service
- Grant: General payment not linked to particular patient or amount of service

Box 2.3: Different contract types used by social services departments to purchase home care (Matosevic et al 2001)

A survey of independent sector home care providers found that care was mostly purchased by way of spot contracts (Matosevic et al 2001). Meanwhile local authority home care services are always block purchased. Home care providers are expected to give care in accordance with the care plan. Once care has been purchased the care manager has little ongoing involvement with the patient except to review the care plan biannually or as the patient's needs change.

2.3.3. Ambiguities and omissions

The community care legislation failed to adequately address the perennial problem of differentiating between what was meant by health and social care. The White Paper *Caring for People* (DH 1989) accepted that in some cases there might be difficulties drawing a clear distinction between the needs of an individual for health and social care but urged collaboration rather than introduce a stronger model of joint planning that might realistically overcome the well documented obstacles to cross boundary working (Hudson 1990).

Another major criticism was that despite indicating that the responsibilities of the health service to older people assessed as in need of continuous care remained unaltered, the community care legislation failed to introduce measures that would reverse the progressive decline in long-stay hospital beds (Lewis 2001). These failures had important implications for the delivery of personal care activities to older people living at home.

2.3.4. Responsibility for personal care activities

The home help service was extended and restructured. No longer did home helps perform solely domestic tasks, but in addition carried out personal care activities. The time-limited availability of special transitional funding meant that local authorities attempted to tightly delineate those older people for whom home carers would provide care (Means and Smith 1994). Older people in need of assistance with personal care activities included people who might previously have been cared for in residential care homes, nursing homes or long-stay hospitals.

Local authorities were willing to accept responsibility for meeting the needs of older people who would previously have been cared for in residential homes but they were reluctant to accept responsibility for older people who had nursing or health related needs (for example, patients who previously had their personal care needs met by a district nurse). On the other hand health authorities argued that because they had not themselves received the special transitional grant they were only responsible for meeting the personal care needs of older people assessed as in need of continuous care (that is patients who might previously have been cared for long-stay hospitals) and phased out nursing auxiliaries whose main responsibilities had included routine nursing and personal care activities (Vernon et al 2000).

The large-scale withdrawal of district nursing services from personal care activities, the decline in long stay hospital beds and the increasing number of people living over 80 years meant that local authorities assumed responsibility for meeting the personal care needs of ever more vulnerable people at the threshold of institutional provision (Means and Smith 1994). To meet increasing demand they reduced domestic provision and targeted care at the most dependent people (Harding 1999). Home care activity data indicate a shift towards a more intensive service. Trends in activity levels are summarised below.

- The number of contact hours provided increased by 16% while the number of households receiving services decreased by 11%
- The average weekly number of contact hours per household increased by 6.3 hours to 8.6 hours
- The proportion of households receiving over five contact hours each week and six or more visits increased from 34% to 48%
- The proportion of households receiving only one weekly visit decreased from 24% to 18%

Box 2.4: Trends in home care activity levels from 1999 – 2003 (National Statistics 2004)

Home carers increasingly assisted people with personal toilet (washing, bathing, skin care and grooming), eating and drinking, managing urinary and bowel functions (including maintaining continence and managing incontinence), managing problems associated with immobility, management of prescribed treatment (for example, administration and monitoring medication), behaviour management and ensuring personal safety. The Personal Social Services Research Unit (PSSRU) (1998) looked at the health characteristics of people in receipt of home care services and

found that not only were they dependent in terms of their physical functioning but that they often experienced multiple and interacting problems. Each person had a median of three physical health problems. Forty-three percent were also cognitively impaired (25% severely). Their health characteristics are summarised below.

Patient problems			
	%		%
Stroke	12.2	Digestive	17.5
Other nervous system	5.9	Urinary incontinence	7.2
Eyes	24.2	Faecal incontinence	2.2
Ears	18	Other genito-urinary	8.1
Coronary and other heart	24.6	Arthritis or rheumatism	40.4
Hypertension	6.6	Other muscular-skeletal	35.7
Varicose veins and other circulatory	15.7	Cancer	4.7
Respiratory	21.3	Other	20

Table 2.1: Medical problems reported by people in receipt of home care services (PSSRU 1998)

2.3.5. Defining nursing and personal care needs

As the home care service evolved and adapted to care for more dependent older people with increasingly complex health problems their work started to resemble that undertaken by district nurses. For example, some home carers participated in catheter care, colostomy care and gastronomy feeding (Robinson and Banks 2005; Taylor 2002). Defining nursing care as distinct from personal care was much debated and drawing clear boundaries between different types of care was not straightforward.

There was growing acknowledgement that attempts to define nursing and personal care needs using codified and demarcated task splitting (see section 2.2.4.2) was unhelpful. For example, Towers et al (1999) wrote an apocryphal story about one confused older woman whose medication was loaded into a medication compliance device once weekly by a district nurse and handed to her each morning by a home carer. One morning the home carer noticed that the contents of the box appeared to have been rearranged but because the contents were outside her sphere of responsibility she decided to ignore it. Subsequently the older woman was admitted to hospital with a suspected overdose. Other commentators claimed codified and

demarcated task splitting resulted in widespread unmet health needs as cost containment progressively shortened the list of health related tasks (Heath and Phair 2000).

Ford et al (1997) believed valid definitions depended on the outcome of individual health assessments and crucially on the use of the concept of stability/predictability. A person would be stable and predictable if his or her health or disease was in a steady state, and likely to remain so if the correct care and treatment regimes continued and if his or her response could be anticipated with some certainty through established interventions and regularly reviewed care plans. An example might be someone with a cardiac condition who was well controlled on medication. Nursing care would probably not be necessary and assistance with personal care activities could be defined as within the remit of the local authority. A patient would be unstable and unpredictable if his or her health or disease was fluctuating, or responses could not be anticipated with any certainty, thus requiring continuous reassessment, care planning, frequent or regular intervention, treatment and review. An example might be someone with impaired swallowing reflex, communication, cognitive functioning and mobility and who was emotionally labile and intermittently aggressive. This person would require nursing care (Heath and Phair 2000).

2.3.6. Applying the concept of stability/predictability

Operationalising the concept of stability/predictability was not without its tensions. The obstacles were primarily professional. That is they were related to different professional identities. Professional identity is shaped by training, accountability and regulation. District nurses and social workers are separately trained and have different accountability and regulatory structures. Consequently they have different ideologies, perceptions and languages and inadequate understandings of the role and skills of others (Hudson 2002). For example, Gilmore and Hunt (1974) found that professional stereotyping was common and described how nurses saw social workers as 'trendies' who were unrealistic about health problems. Over 20 years later, Bliss (1998) found little agreement on role specification between district nurses and social workers. Inadequate understandings gave rise to inappropriate referrals and

unrealistic expectations (for example, according to the Audit Commission (1999), 10% of referrals to the district nursing services were inappropriate).

Personal experience working in the district nursing service drew attention to other difficulties operating the concept of stability/predictability. One problem was the character of liability insurance purchased by independent sector organisations, which tended to be worded in such a way as to prohibit home carers undertaking certain so-called specialised activities (such as administering rectal preparations) regardless of whether or not the patient was assessed as stable and predictable. The readiness of people to pay for their personal care was another source of tension. People who previously had their personal care needs met free of charge by the district nursing service were reluctant to have their care transferred to a means tested provider. These difficulties meant that definitions of nursing and personal care needs were often unclear and subject to considerable leeway and individual discretion. They also encouraged gaps in service delivery for people with complex health and social care needs (House of Commons Health Committee 1998).

2.4. Modernisation 1997 – 2005

Significant changes in health and social care provision were to take place with the return of the New Labour government in 1997. The modernisation and reform agenda was outlined in the White Papers *The New NHS* (DH 1997) and *Modernising Social Services* (DH 1998a). A key theme was improving partnerships between the NHS and local authorities. This section outlines some of these initiatives and considers their impact on improving collaboration and communication between district nursing and home care services.

2.4.1. Improving partnerships

The intention of the New Labour government was to foster ‘a spirit of flexible partnership working which moves away from sterile conflicts over boundaries to an approach where this wasted time and effort is directed positively towards working across them’ (DH 1998a). A new statutory duty of partnership was placed on the NHS and local authorities to work together to promote the wellbeing of their local communities (DH 1997). Mechanisms to make joint working easier were laid out in

the consultation document *Partnership in Action* (DH 1998b). The key proposals are summarised below.

- Pooled budgets: where health and social services put a proportion of their funds into a mutually accessible joint budget to enable more integrated care
- Lead commissioning: where one authority transfers funds to the other who will then take responsibility for purchasing both health and social care
- Integrated provision: where one authority provides both health and social care

Box 2.5: Mechanisms to make joint working easier (DH 1998b)

The NHS Plan (DH 2000b) proposed further reforms to tackle difficulties between the NHS and social services. These included the concept of the care trust that would commission and/or deliver both health and social care. The assumption was that a single organisational entity would overcome problems associated with irregular geographical boundaries and different service priorities and they would improve financial flexibility and facilitate the co-location of health and social care workers. These changes were effected in the 2001 Health and Social Care Act but by April 2003 there were only seven care trusts (Batty 2003) and the power to compel care trusts has since been dropped.

The NHS Plan (DH 2000b) also proposed the development of intermediate care services. Intermediate care included a range of integrated services to promote faster recovery from illness, prevent unnecessary acute hospital admission and support timely discharge. These services were primarily targeted towards older people. They were funded from pooled NHS and local authority budgets and were free of charge. Practice examples included effective transfer schemes (which supported patients on early discharge from hospital and provided intensive rehabilitation services) and rapid response schemes (which supported patients to prevent hospital or care home admission and provided intensive rehabilitation services).

The Northamptonshire Primary Care Trust Early Intervention Scheme (www.society.guardian.co.uk/health/page/0,7896,765166,00.html) was one such scheme. It aimed to avoid unnecessary hospital admission for frail older people. Teams included nurses, social workers, physiotherapists, occupational therapists, and



generic health and social care support workers. Generic support workers were something between a nursing auxiliary and a home carer who were trained to undertake extended personal care activities under the direct supervision of a district nurse.

Evaluations have found that intermediate care schemes foster effective communication and coordination between district nurses and generic support workers (Hek et al 2004). However, the introduction of generic support workers has been restricted to specialist schemes and mainstream home carers remain the dominant providers of personal care to older people living at home (Hultberg 2005).

2.4.2. Communication and collaboration between district nursing and mainstream home care services

Mainstream home carers are not subject to direct supervision by a district nurse (although home care and district nursing patients are often one and the same). Home carers are supervised and line managed by home care coordinators. Little is known about the relationship between district nursing and home care services. Personal experience working in the district nursing service suggested their relationship was not an easy one. The reasons are summarised below.

- Status differentials: home carers are largely unqualified and have no occupational autonomy whilst in contrast district nurses are highly qualified and exercise greater levels of autonomy.
- Poor patient information sharing: prior to the introduction of the single assessment process by the National Service Framework for Older People (DH 2001b), district nurses and social workers undertook separate patient assessments and often failed to share their assessment findings. Home carers and district nurses continue to keep separate patient notes and there is no simple tool for clear communication in the home.
- Separation of social services assessment and provision functions: district nurses are unclear whether to liaise with social workers and/or home care providers.
- Split care packages: many patients have home care delivered by more than one provider (that is one organisation provides the morning call and another provides the lunchtime and evening calls) and district nurses are unclear whether to liaise with one or all.
- There are no formal supervision mechanisms between home carers and district nurses: home carers are line managed by home care coordinators and under no obligation to follow instructions issued directly to them by district nurses.
- Hostility towards for profit providers in the independent sector

Box 2.6: Factors affecting collaboration and communication between district nurses and home care services

There is no reason to believe the partnership initiatives outlined in box 2.5 (section 2.4.1) will overcome the difficulties listed above. The quality of collaboration and communication between district nursing and home care services will probably be subject to strong local variation and will depend on the organisation of local home care provision (for example, the extent to which the local authority participates in the mixed economy of care) and the development of local communication initiatives (such as shared care recording systems (see Wolf 1997; Jones-Tattum et al 1999)) and collaborative educational programmes (see Redworth et al 1999).

2.5. Conclusion

Complex economic, organisational and ideological factors have shaped the development of community care services and created difficulties in communication and collaboration between district nursing and home care services. The difficulties that might jeopardise patient safety when responsibility for medication related activities is transferred from district nursing to home care services are summarised below.

- | | |
|--|---|
| <ul style="list-style-type: none">• Different professional identities• Unclear definitions of care• Poor patient information sharing• No inter service supervision mechanisms | <ul style="list-style-type: none">• Inadequate home carer training• Split home care packages• Separation of social services functions• Financial restraints• Codified and demarcated task splitting |
|--|---|

Box 2.7: Factors identified from the literature describing problems at the health and social care boundary that might predispose to adverse events when responsibility for medication related activities is transferred from district nursing to home care services

The following chapter describes the medication management process for older people living at home and identifies additional factors that might predispose to adverse events when responsibility for medication related activities is transferred from district nursing to home care services.

Chapter 3: Medication management for older people living at home

The purpose of this chapter is to describe the medication management process for older people living at home in order to help understand the physiological, pharmacological, socio demographic and system complexities that might create difficulties when responsibility for medication related activities is transferred from district nursing to home care services.

3.1. Medicines handling and the law

This section briefly summarises the law in relation to the prescription, supply and administration of medication. The two most important pieces of primary legislation controlling medicines use in the UK are the 1968 Medicines Act and the 1971 Misuse of Drugs Act. People prescribing medication for older people living at home might include district nurses, practice nurses and walk-in centre nurses as well as general practitioners, hospital doctors and dentists. The law states that anyone can administer a prescription only medicine to another person provided it is in accordance with the directions of the prescriber. Medicines prescribed for a person are that person's property and may not be used by any other person. No one can be forced to take a medicine except when sectioned under the 1983 Mental Health Act.

3.2. Adherence to prescribed medication

This section provides an account of the use of prescribed medicines by older people and the complex structures and processes involved in the medication management process. It addresses adherence to prescribed medication and the determinants of non-adherence.

3.2.1. Medicines and the medication management process

Older people are not a homogeneous group in their experience of ill health or disability. Medication contributes significantly to the health and wellbeing of many older people but not all older people are prescribed medication. For example, interviews with a random sample of 231 people aged over 75 in north London found that only 67% were taking prescribed medication (37.5% were taking one or two

prescribed medicines and 29% were taking three or more) (Iliffe et al 1991). There is also evidence to suggest significant under prescribing for older people for common conditions such as chronic obstructive pulmonary disease, depression and hypertension (Royal College of Physicians (RCP) 2000).

Goldstein et al (1993a) produced a model to describe the complex structures and processes involved in medication management (see below). Key components include the medical consultation, prescription of medication, pharmaceutical consultation, supply of medication, storage of medication in the home, and administration of medicine. Other features include the delivery and collection of prescriptions to and from the pharmacy, monitoring adherence, side effects and toxicity, and medication review.

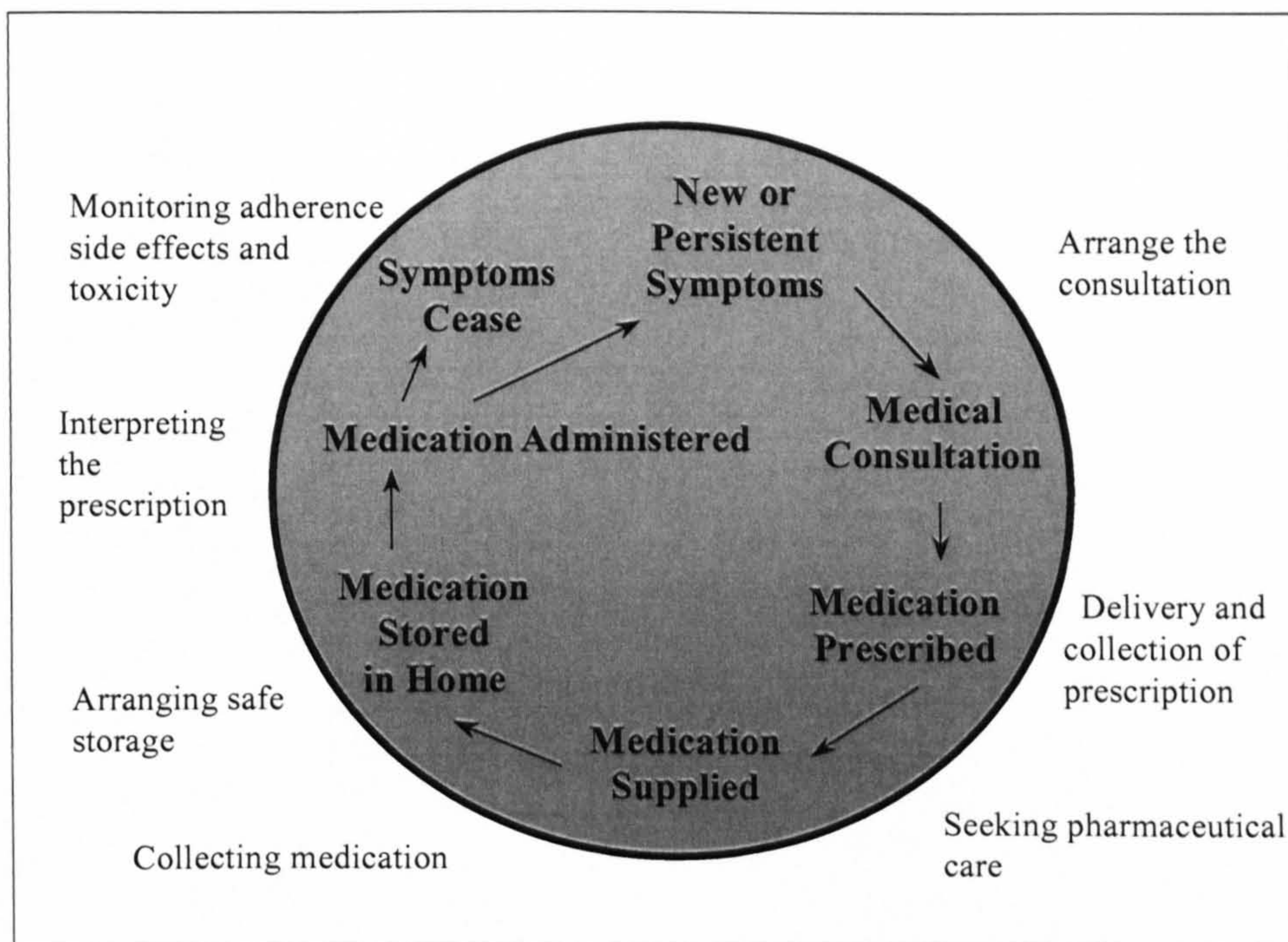


Figure 3.1: The medication management process (Goldstein et al 1993a)

Each component can be expanded to reveal a more detailed specification of the actions and cognitive processes required to successfully complete that activity. For example, administration requires the cognitive and physical capacity to correctly identify the medicine and the dosing directions, and to open containers. Additional components might also include education, implementing non-pharmaceutical measures to enhance the benefits of drug therapy (such as enhancing drug therapy for

hypertension through weight reduction, smoking cessation and sodium restriction) and the safe disposal of unused medication.

3.2.2. Defining adherence and non-adherence

The terms used to describe medicine taking that does not fully conform to the prescribed regimen include non-compliance, lack of concordance and non-adherence. Compliance literally means 'an action in accordance with a request or command' (Oxford Dictionary 1990: 233). Contemporary health related discourse rejects the term compliance because of its coercive connotations and favours either concordance or adherence. Concordance focuses on the consultation process and has an underlying ethos of negotiation and shared decision-making between the patient and the health care provider (Weiss and Britten 2003). Adherence implies that while the health care provider dictates treatment, it is accepted that the patient will make a decision as to how closely to follow the prescribed regimen (Goodyer 2002).

The present study will use the term adherence as the most neutral and straightforward word available. Non-adherence may be either intentional where the patient refuses to follow advice and is able to argue what they consider to be in their own best interests through informed choice, or unintentional where informed choice is not exercised.

3.2.3. Factors influencing adherence

Evidence in the UK suggests that up to 50% of older people may not be taking their medicines as prescribed (Botelho and Dudrak 1992) and studies in the US suggest a figure between 29 and 60% (Rogers and Bullman 1995). Adherence is a multidimensional phenomenon. Obstacles to older people taking their medicines as prescribed include patient factors, therapy factors, health care team factors, and system factors. Adherence is determined by the interplay of these four sets of factors (WHO 2003). These factors are now explored in more detail.

3.2.3.1. Patient related factors

Patient related factors include health beliefs, condition related factors and socio-demographic factors. Attitudes and beliefs about the place and value of medicines are influenced by social and cultural mores. Helman (2001) has argued that folk beliefs strongly influence the extent to which adults in all cultures accept and use

prescribed medicines. Horne and Weinman (1999) studied adherence in four different chronic illness groups (asthma, cardiac conditions, renal failure and cancer) and found that specific beliefs about the value of medicines were the strongest predictor of adherence.

Medicines are least likely to be taken as prescribed when they have a preventative rather than a curative or short term distress relieving effect (Carter et al 2003). Co-morbidities such as depression (Spiers and Kutzik 1995) and length of treatment regimen (Larrat et al 1990) can also modify adherent behaviours.

There is strong evidence that cognitive impairment and physical dependency contribute to poor adherence (Goodyer 2002). Ruscin and Semla (1996) reported that both were strong predictors for the inability to perform tasks associated with medication management. They developed a medication management assessment instrument measuring the ability of older people to undertake five specific tasks (including opening child safety bottles, removing tablets from bottles and interpreting directions). Fifty-nine people participated in the study. Seventy percent of people with normal mini mental state scores (MMSS) of over 24 were able to perform all tasks compared with 18% with abnormal scores of less than 24. Sixty-six percent of people who were physically independent were able to perform all tasks compared with 15% of patients requiring help with one or more activity of daily living. Six percent of participants were unable to read a standard 12-point type size prescription label. Gray et al (1999) examined risk for non-adherence in 147 older people receiving home health services following hospital discharge and found poor cognition was associated with under-adherence. People with a MMSS of less than 24 were 2.5 times more likely to be non-adherent with at least one medication than those with a MMSS greater than 24.

There is conflicting evidence as to whether gender and social support have an effect on adherence to prescribed medication. Gender in isolation has not been shown to have an effect on adherence, although a few small studies have indicated that women experience more problems managing medication than men. For example, one study of hospital patients reported that older women were significantly more likely to

experience problems opening medication containers than older men (Atkin et al 1994).

The main source of assistance for older people needing help with self-care activities is family members. Conn and Taylor (1992) described the way in which medication was managed by 179 recently hospitalised older people in the US and reported that nearly half received medication related assistance from an informal carer. The most common types of assistance identified were preparing medication (without prompting from the older person), preparing medication (after prompting from the older person), reminding the older person to take medication, administering medication, and checking the older person has accurately prepared the medication. Informal carers are also often involved in ordering and collecting medication, loading medication compliance devices and advising older people about medication (Gupta et al 2002; Francis et al 2002). Some studies have reported that older people living with a relative were more likely to adhere to prescribed medication than older people living alone (McElnay et al 1997; Lorenc and Branthwaite 1993) although at least one other has indicated that cohabitation has no influence on adherence (Col et al 1990).

Research has also suggested that informal carers experience a number of difficulties undertaking medication related activities for older people living at home. For example, Gupta et al (2002) conducted interviews with carers tending older relatives recently discharged from hospital and revealed concerns relating to the refusal of older people to take medication, drugs perceived to be ineffective and the lack of medical review. Likewise, Goldstein et al (1996) revealed concerns relating to system irritants. For example, respondents described having to order supplies every few days as different medicines were prescribed for varying periods of time and conversely, others explained that no matter which medicines were ordered, they were provided with a prescription which included all the medicines, which meant they had to store large quantities of medicines and that presented a danger to confused dependents.

3.2.3.2. Therapy related factors

Therapy related factors affecting adherence include regimen complexity and medication side effects. Conn et al (1991) reviewed the research regarding the importance of medication complexity and reported conflicting findings. Several studies found that four or more prescribed medicines increased the likelihood of non-adherence whilst others failed to establish a relationship. The authors suggest the lack of consistent findings may be due to inadequate conceptualisation and measurement of medication regimen complexity. In their own study, complexity was measured using a Medication Regimen Complexity Index, which assessed not only the number of medicines and the frequency of dosing but also the type of actions required to manage the prescribed regimen (for example, having to halve pills and follow additional directions such as 'take after meals'). Two groups of older people participated in the study (one group comprising 178 people recently discharged from hospital and the other 98 people who had not been hospitalised for six months or more). No significant correlation was found between adherence and medication complexity in either group.

There is evidence that older people are as likely as younger people to make rational and intentional decisions to change or stop their medication without seeking professional advice, due to perceived side effects and interactions (Lowe and Raynor 2000). Some of the most troublesome side effects reported by older people that influence decision to alter medicine regimens are urinary frequency associated with loop diuretics, constipation associated with analgesics, and sleep disturbances associated with psychotropics (Goodyer 2002).

3.2.3.3. Health care team related factors

Health care team related factors include the provision of medication education. Evidence suggests that older people are often ill informed about their medication. Studies of older people in the UK (O'Connell and Johnson 1992; Holloway 1996) and the US and Denmark (Barat et al 2001) have reported that between 40 and 60% did not know the purpose of their medication, only between 25 and 30% knew the dose, only 20% knew the consequences of poor adherence and less than 6% were aware of possible side effects. Martens (1998) studied 122 older people recently discharged from hospital and found that 89% wanted written medication information

as well as verbal medication information but only 10% had received a personalised medication schedule and only 45% had received supplementary handouts.

Health care team related factors also include multiple prescription providers. Cargill (1992) randomised 70 patients (mean age 72 years) into groups to assess the effectiveness of a teaching regimen on positive home medication taking. A number of risk factors associated with poor adherence were identified, which included multiple medicines, recent prescription changes, vision defects, and inability to perform simple calculation. The most significant variable in relation to non-adherence scores was multiple prescription providers.

3.2.3.4. System related factors

System related factors affecting medicine taking by older people include medication packaging and presentation. Several studies have found that older people have difficulty accessing medication from the packaging in which it was dispensed. Forbes et al (1990) asked 1463 people about the difficulties they encountered using bottles with child resistant closures, screw-topped containers, blister packs and foil-covered packs. Of those people who had used them, 16% reported difficulty with screw-top containers, 58% with child resistant closures, 45% with blister packs, and 69% with foil packs.

Sexton and Gokani (1997) reviewed seven studies that examined the ability of recently hospitalised older people to extract medicine from different types of packaging. These studies indicated that bottles with screw caps were the most easily accessible for between 92 and 100% of those studied, while only between 36 and 67% were able to open bottles with a child resistant closure, and between 68 and 97% could access medicines in blister packs. The difficulties were attributed to physical impairment (with declining vision and poor manual dexterity) and cognitive decline as participants struggled to comprehend the means of product release.

3.3. *Iatrogenic illness*

Adverse drug events and iatrogenic disorders are an important cause of morbidity in older people. Mannesse et al (1997) found that one in six older people admitted to

hospital experienced an adverse drug reaction and 24% had severe reactions. This section explores the main causes of adverse drug events and iatrogenic disorders.

3.3.1. Problems with drug handling

Drug treatment is made more complex by the physiological ageing process. Prescribing risks are increased by changes in the ability of the body to distribute, metabolise and eliminate medicines. These changes are responsible for greater and more prolonged drug effects in older people.

The distribution of an absorbed drug depends on organ blood flow, drug solubility and protein binding. Aging is associated with reduced lean body mass and a corresponding reduction in body water; after the age of 75 the proportion of total body fat increases by 25% and total water content decreases from 61% to 53% (Jackson 1999). The result is an increased concentration of water-soluble drugs (e.g. Digoxin) and a prolonged half-life of fat-soluble drugs (e.g. Nitrazepam).

As a drug is distributed it comes into contact with proteins, if it binds to a protein it becomes inactive and cannot exert a therapeutic effect. Serum albumin concentrations decrease with age. Compared with a young person, a greater proportion of an absorbed drug is unbound in an older person and so at the same dose will produce an enhanced pharmacological effect.

Increased pharmacological and toxic effects may also result from a reduction in liver function. After the age of 50, the metabolic capacity of the liver decreases by approximately one percent each year (Jackson 1999). A reduction in liver function will result in reduced clearance and higher plasma concentrations of drugs that would ordinarily undergo extensive liver metabolism (e.g. Propanolol).

The main change in drug handling with increasing age is related to renal function. The glomerular filtration rate declines with age (Nyengaard and Bendtsen 1992), which means that drugs dependent on the kidney for excretion (e.g. Digoxin) will have a prolonged half life and elevated plasma concentrations.

3.3.2. Multiple prescriptions

In addition to causing changes in distribution, metabolism and elimination, the aging process also increases the likelihood that an older person will need concurrent medication for more than one chronic condition. As the number of medicines increases, so does the possibility of drug interactions and adverse drug events (Hohl et al 2001).

3.3.3. Poor adherence

Older people are more susceptible to the adverse effects of non-adherence because of the physiological aging process described above. Two studies demonstrate the extent to which non-adherence contributed to adverse drug events and hospitalisation in the US. Col et al (1990) interviewed 315 consecutive admissions of older people and reported that 11% were due to non-adherence. Similarly, Grymonpre et al (1998) conducted a survey of 863 admissions of people aged over 50 and reported that 19% were drug related and of these 37% were due to non-adherence.

3.3.4. Inappropriate prescribing

Lindley et al (1992) examined 416 successive admissions to a UK hospital and found that much drug related morbidity in older people was due to inappropriate prescribing. For example, 26 admissions (6.3%) were attributed to adverse drug reactions of which 13 (50%) were due to inappropriate prescriptions (significantly higher than for appropriate drugs). Iliffe (2000) suggests inappropriate prescribing in general practice arises from limited or out-dated education in therapeutics, isolation from other professional influences, inability to focus in depth on one area of therapeutics because of the generalist nature of practice, and the need for realistic rather than rational prescribing.

Rational prescribing occurs when the prescriber knows exactly what medical problem is being treated, understands how a chosen medication works and how it will alter the identified problem, and what potential interactions are possible, either with other drugs or with other co-existent illnesses. Hospital doctors are in a good position to prescribe rationally because they usually know what condition they are treating, tend to specialise and have in-depth knowledge of a narrow range of

disorders and their treatments, and have access to medication related information from other team members and hospital pharmacists.

In general practice there is greater uncertainty about diagnoses. Prescribing is sometimes realistic in the sense that it is aimed at symptom-relief in the absence of a diagnosis and not rational in the clinical-pharmacological sense. For example, older people complaining of dizziness may have neurological, cardiovascular or psychological causes for their symptom, but distinguishing between them by clinical examination may be difficult in the primary care setting, so that general practitioners may opt to treat the most likely cause to relieve symptoms and confirm diagnosis. The potential for iatrogenic illness increases as prescribing become realist rather than rational.

3.4. Assistance with medication related activities

Older people may require assistance with one or more medication related activities. The main source of assistance is from a family member (Conn and Taylor 1992; Gupta et al 2002; Francis et al 2002). This section explores what additional assistance district nursing and home care services might give an older person.

3.4.1. Medication related activities undertaken by district nurses

Five percent of referrals to district nursing services include requests for medication related assistance (Audit Commission 1999). According to the literature, district nursing involvement in medication related activities includes prescribing medication (Luker et al 1997), monitoring adherence to medication (Ross 1991), loading medication compliance devices (Stewart et al 2001), administering eye drops (Diggory et al 1995), instructing home carers in medication related activities (Ewens 1992), administering insulin injections (Knight 1986), administering vitamin B12 injections (Middleton and Wells 1985), therapeutic monitoring (such as measuring INR⁴ levels (Cachia et al 1998)) and administering intravenous therapy (Cooper and Hodgson 1992).

⁴ An INR (international normalised ratio) is a test that measures the clotting time of blood and determines the dose of the anticoagulant drug Warfarin.

Some of these activities might be undertaken by unqualified healthcare assistants working in the district nursing team. Practice examples include the administration of insulin injections by healthcare assistants in Darlington PCT (Perry 2006). Advice issued by the Royal College of Nursing (RCN) suggests medication related activities should only be delegated to healthcare assistants when additional instruction has been provided and an assessment of knowledge and competence undertaken (RCN 1987).

3.4.2. Medication related activities undertaken by home carers

The evolution of the home help service as a major provider of personal care and an effective alternative to residential and long-term care has meant that home carers are required to undertake medication related activities for many dependent older people living at home. Research suggests it is common practice for home carers to be involved in medication related activities for older people living at home. Ashgar et al (2001) sent questionnaires to 683 home carers in Northumberland (43% were completed and returned) and found that 81% collected prescriptions, 78% reminded patients to take medication, 55% gave patients medication, 44% put medicines out to be taken later, and 19% loaded medication compliance devices.

Studies asking respondents to state whether they actually perform specific medication related activities (for example, whether they put medicines out to be taken later) risk inducing response bias from home carers uncertain about their roles. Goldstein et al (1993b) asked respondents to state whether they had been asked for assistance with specific activities rather than whether they had actually performed them. They distributed questionnaires to 3269 home carers in Derbyshire (61% were completed and returned) and found that 86% had received one or more requests to assist with medication. Seventy-four percent had been asked to assist with oral medication, 66% to assist with eye, ear and nose preparations, 66% skin preparations, 20% suppositories and 22% inhalers. Physical assistance included removing container closures, physically assisting at the point of administration, and looking for medication in the home. Cognitive assistance included reminding patients to take medication and interpreting directions on container labels.

In the absence of government guidance, defining responsibility for medication related activities between district nursing and home care services has been problematic (Davies et al 1990). No research has been undertaken that documents how decisions are made regarding what medication related activities are and are not transferred from district nursing to home care services. Nor has any research been undertaken that describes the frequency with which adverse events occur when responsibility for medication related activities is transferred from district nursing to home care services.

3.5. Conclusion

Personal experience suggested medication management for older people living at home was a high risk area of nursing practice and the potential for things to go wrong seemed to increase when responsibility for medication related activities is transferred from district nursing to home care services (see section 1.1). Improving the use of medicines by older people was a major focus of the *National Service Framework for Older People* (DH 2001b). However there is no systematic research describing the obstacles to safe medication management in domiciliary care settings. The difficulties that might predispose to adverse events when responsibility for medication related activities is transferred from district nursing to home care services are summarised below.

- | | |
|---------------------------|---|
| • Health beliefs | • Lack of review |
| • Cognitive impairment | • Difficult medication packaging |
| • Physical dependency | • Prescription inequivalencies |
| • Social isolation | • Treatment ineffectiveness |
| • Impaired drug handling | • Inadequate provision of patient education |
| • Poor adherence | • Multiple prescribers |
| • Preventative medication | • Inappropriate prescribing |
| • Regimen complexity | • Multiple medications |
| • Medication side effects | • Depression |

Box 3.1: Factors identified from the literature describing medication management that might predispose to adverse events when responsibility for medication related activities is transferred from district nursing to home care services

The following chapter considers how researchers and investigators have conceptualised the occurrence and approached the analysis of error and adverse

events in hospital settings and explores the relevance of this work to domiciliary care settings.

Chapter 4: Studying adverse events and patient safety

There has been an exponential growth in policy and research attention to patient safety in the last ten years. However a search of the research literature identified no systematic investigations of adverse events when responsibility for medication related activities was transferred from district nursing to home care services. The focus of attention tends to be on adverse events in hospital settings. The purpose of this chapter is to consider how researchers and investigators have conceptualised the occurrence and approached the analysis of error and adverse events in hospital settings and to explore the relevance of this work to the study.

4.1. Understanding error and adverse events

The safety and the human error problem can be viewed in either of two ways, using the person centred approach or the systems approach (Reason 2000). Current healthcare policy (DH 2000a) and social care policy in relation to child protection (Department of Education and Skills, DH and Home Office (DES, DH and HO) 2003) advocates a systems approach to error causation. Current social care policy in relation to older people in either residential or domiciliary care settings makes no reference to error causation. This section describes both approaches and looks at the reasons the person centred approach is increasingly recognised as ill suited to the health and social care domain.

4.1.1. Person centred approach to error

The person approach regards human error as the fault of an individual person (Leape 1997). It treats human error as a moral issue arising from aberrant mental processes such as forgetfulness, inattention, poor motivation, negligence and recklessness (Reason 2000). Associated countermeasures are directed at reducing unwanted variation in human behaviour. These include the threat of litigation and punishment, writing more procedures and the provision of additional training. The focus on individual behaviour and naming, blaming and shaming is intended to provide staff with clear incentives and biases towards safety (Reason 2000).

The person approach has been the dominant convention in healthcare and child protection (Reason 2000; Reder et al 1993). For example, medicine has traditionally emphasised the responsibility of each practitioner for his or her actions. A corollary of this basic premise is that the responsibility for any error should be assigned to the practitioner to whom the error is most clearly attached (Leape 1997). Therefore the person responsible for the amputation of the wrong leg is the surgeon and the person responsible for the administration of the wrong drug is the nurse. Likewise inquiries into child abuse deaths have typically ended once professional mistakes have been found (Munro 2005). However, it is increasingly recognised that the person centred approach is ill suited to healthcare and child protection (DH 2000a; DES, DH and HO 2003). The shortcomings of the person centred approach are now explored.

4.1.1.1. Problems with the person centred approach

The person centred approach is unfair because it assumes that culpable behaviour accounts for the majority of unsafe acts and ignores the evidence that most errors are not caused by negligence but by practitioners who are otherwise conscientious and competent (Reason 2000). It also fails to recognise that errors often happen because of defects in the working environment (Reason 2000). These issues may be illustrated by an example. Cook et al (2000) analysed two celebrated medical accidents where there had been strong censure of the practitioners involved. Analysis revealed multiple contributory factors many of which were beyond the control of individual practitioners. One of these cases is summarised below.

Celebrated first story

- A surgeon amputates the contralateral leg rather than the one intended
- The surgeon is subsequently disciplined by state licensing board

Some factors not included in the first story

- Both legs were diseased and the contralateral leg needed amputating as well
- Consent identified the contralateral leg as target of amputation
- Operating room schedule identified the contralateral leg as target of amputation
- Patient was anaesthetised and the contralateral leg was prepped and draped prior to surgeons arrival

Box 4.1: Florida wrong leg case (Cook et al 2000)

The person centred approach is unhelpful because it isolates unsafe acts from their context and makes it very difficult to uncover and eliminate recurrent error traps, which lie dormant until activated by another unlucky practitioner (Reason 2000). This problem may be illustrated by another example. Ownby (2003) described how a substantial number of medication dosing errors in intensive care units occurred during resuscitation situations when tensions were high and lines of responsibility were sometimes blurred. The simple intervention of having a nurse repeat the verbal orders reduced medication errors considerably. In the person centred approach the practitioner who administered the wrong dose would be viewed as the responsible person. To assign blame to an individual without addressing the error provoking conditions in the working environment is no assurance that the same error will not be made again by a different person and fails to address the real problem, which in this instance was team communication during a stressful event.

The person centred approach also provides staff with an incentive to cover up mistakes (Reason 2000). A retrospective review of case notes from 500 deliveries in two UK obstetric units identified 196 adverse events of which only 45 (23%) were reported by staff (Stanhope et al 1999). Questionnaires administered to 42 obstetricians and 152 midwives at the same two obstetric units revealed that 36% of respondents were reluctant to report adverse events because they believed junior staff could be unfairly blamed and 23% because they were worried about litigation (Vincent et al 1999). Adverse events often display strong similarities to events that

have occurred before and unless they are reported the lessons of experience cannot be properly learned (DH 2000a).

4.1.2. Systems approach to error

The systems approach views errors as consequences rather than causes having their origins not so much in the perversity of human nature and aberrant mental processes, but in the management failures and organisation deficiencies that create error-producing conditions in the workplace (Reason 2000). Countermeasures are based on understanding the conditions in which people work and making them less error provoking (Reason 2000). The theoretical foundations of the systems approach lie in cognitive psychology and human factors research. The antecedents of human error according to this approach are now considered.

4.1.2.1. Cognitive science and error causation

Cognitive psychology deals with how the human mind receives and interprets impressions and ideas and identifies some of the ways in which humans make mistakes (Myers 1996). Various conceptual models have been developed describing human performance and error. These make distinctions between automatic and controlled processing.

In the automatic control mode mental functioning is rapid and effortless. Leape (1994) explains how a person can leave home, enter and start their car, drive to work, park and enter the office without devoting much conscious effort to the hundreds of decisions that this complex set of actions requires. This automatic and unconscious processing is possible because motor performance is controlled by schemata or organised plans. Each schema is expert on some small recurrent aspect of the world. There are no known limits to either the number of schemata that may be stored or the duration of their retention. Schemata are activated by conscious thought or sensory inputs and contextual cues from the environment (Reason 1992). After activation they function automatically. Schemata are of great value as they allow large amounts of information to be processed quickly and economically (Reason 1988).

The attentional control mode is used for problem solving (circumstances where some immediate goal is thwarted and some other means must be found instead). Most

problem solving involves reasoning a way to a solution. This includes setting goals, initiating actions to achieve desired goals, observing the extent to which actions are successful, and modifying actions to minimise the discrepancy between the present position and the desired state (Reason 1990). Functioning in the attentional control mode is slow, effortful and difficult to sustain for more than brief periods (Reason 1988).

The generic error modelling system (GEMS) is a cognitive framework that locates common human error forms (Reason 1987). It recognises three basic human errors, skill-based slips and lapses, rule-based mistakes and knowledge-based mistakes. These are largely derived from the skill-rule-knowledge framework (Rasmussen and Jensen 1974; Rasmussen 1986), which classifies human performance into skill-based, rule-based and knowledge-based performance. Skill-based behaviour represents motor performance controlled by schemata. Any problem or departure from routine requires either a rule-based or knowledge-based solution. Rule-based performance is consciously controlled by stored rules of the 'X then Y' variety. In contrast, knowledge-based performance represents the outputs of conscious reasoning. The psychological classification of human error is now considered.

Slips and lapses

A slip is a form of human error defined as an action that was not what was intended (Norman 1981). Slips are associated with inattention and over-attention. The former represents failure to perform the necessary attentional monitoring at critical choice points and the latter occur because attentional checks are made at inappropriate points in an automatic action sequence.

Norman (1988) classifies slips under six categories, capture, description, external activation, associative activation, loss of activation, and mode errors. A capture error occurs when a frequently done activity suddenly takes charge instead of the one intended. For example, a person gets into their car to go to the shop but drives to the office instead. These slips appear whenever two different action sequences have an initial common pathway, with the intended sequence being less familiar than the one performed in error. In the description error, the intended action has much in common with other possible actions and often results in performing the right action

on the wrong object. Norman (1988) tells of a person who takes off their dirty shirt and throws it into the toilet rather than the laundry basket. If the person formed a mental description of their intended action as *throw the shirt into the opening at the top of the container*, the description would have been adequate had the toilet not been in sight. However, the proximity of the toilet to the laundry basket meant the mental description was insufficiently precise. The more wrong and right objects have in common; the more likely slips are to occur. Description errors occur most frequently when the wrong and right objects are in close physical proximity.

Automatic and unconscious processing is possible because schemata control motor performance. Schemata are activated by sensory inputs and contextual cues from the environment. However, external events can intrude into an ongoing action sequence. Norman (1988) described one such external activation error. He was once assigned a visitor room to use and decided to call his secretary to tell her the room number. He phoned from an alcove outside the room, with the room number in sight. Instead of dialling the secretary's number he dialled the room number instead. Associative activation errors result from mental associations of ideas, such as answering the phone when the doorbell rings. Loss of activation errors are temporary memory losses. For example, a person enters a room but forgets why they wanted to go there in the first place. Loss of activation errors are frequently caused by interruptions. The name mode error was derived from experience using computerised text editors that have explicit modes for entering text and giving commands. Failure to identify what mode the system is in can lead to error. Mode errors are inevitable when equipment is designed to have more possible actions than it has controls or displays.

Mistakes

Mistakes, unlike slips and lapses represent errors where actions go entirely as planned but the plan is inadequate to achieve its intended outcome (Reason 1990). Mistakes occur once a problem has been detected. Subdivisions include rule-based mistakes and knowledge-based mistakes.

Rule-based mistakes relate to problems for which the person possesses some pre-packaged solution (Reason 1988). These rules are acquired as the result of training, experience or procedures. In any given situation, a number of rules compete for the

right to represent the current state of the world. Rule selection is guided by a number of factors such as the extent to which the rule matches relevant environmental features, the number of times the rule has been applied successfully in the past, the extent to which the rule specifically describes the current situation, and the degree of support a competing rule receives from other rules.

There are two types of rule-based errors: mistakes that arise from the misapplication of a good rule and those due to the application of a bad rule (Reason 1993). A good rule is one with proven utility in particular conditions. For example, as a general rule it is a good idea to shelter under a tree when caught in the rain. Errors occur when good rules are applied to situations that share common features with previously appropriate situations but actually possess characteristics that demand different sets of actions. For example, sheltering under a tree in a thunderstorm may result in serious injury. Bad rules include wrong rules. For example, the rule that once stated babies should be laid on their stomach to prevent cot death is now considered unsafe (DH 2005b).

Knowledge-based mistakes occur when the problem solver confronts a novel situation for which they possess no pre-packaged solution (Reason 1988).

Knowledge-based functioning is slow, effortful and difficult to sustain (Reason 1990). There are a number of cognitive biases that lead to problem solving errors at the knowledge-based level such as out of sight out of mind (which gives undue weight to facts that come readily to mind), confirmation bias (which is the inclination to look for evidence that supports an earlier working hypothesis and ignore information that contradicts it) and overconfidence (which is the tendency to believe in the validity of the chosen course of action and focus attention on evidence that favours it) (Leape 1994).

Violations

Another important distinction lies between errors and violations. Unlike errors, violations are deliberate. For example, a mistake is an error precisely because the person concerned believed their action was the most appropriate way of safely achieving their goal. An action cannot be considered a mistake if the person knew there was a more acceptable alternative but deliberately choose the less satisfactory

route (Merry and McCall Smith 2001). Violations may be classified under three categories. These include routine, necessary/situational and optimising violations (Reason 1993).

Routine violations are those where it has become the norm to behave in opposition to the rule. For example, through cutting corners or a general belief that the rule is no longer applicable. Necessary or situational violations are actions that seem to offer the only possible path to getting a job done, and where the rules or procedures are seen to be inappropriate for the present situation. Optimising violations describe actions that are taken to further personal rather than strictly task related goals (for example, to alleviate boredom and inquisitiveness).

4.1.2.2. Human factors research and error causation

The Health and Safety Executive (HSE) describe human factors in the workplace as ‘the environmental, organisational and job factors and human and individual characteristics which influence behaviour at work in a way which can affect safety’ (HSE 1999: 10). Human factors might be internal to the individual (for example, personal problems and ill health) or external to the working environment. Most research on human performance and error in the workplace has been done in complex high technology industries such as aviation, nuclear power plants and offshore oil platforms. Research undertaken in these settings has made an important distinction between active and latent failures. This distinction is now explored.

Active failures

Active failures are the unsafe acts that have a direct and immediate impact. They are made by people at the sharp end of the system (such as pilots and nuclear power plant operators) and take a variety of forms including skill-based slips and lapses and rule-based and knowledge-based mistakes. Unsafe acts are preceded by reasons, plans, motives, expectations and ways of reasoning. These are labelled psychological precursors. A good example of a psychological precursor is haste, which can predispose people to make mistakes. But haste is not an autonomous phenomenon and like most precursors is elicited by environmental conditions (such as inappropriate work schedules).

Latent failures

Environmental conditions that cause the psychological precursors to unsafe acts are called latent failures. In complex high technology industrial systems these are largely under management control. They are attributed to organisational deficiencies and fallible decisions that give rise to incompatible goals, inadequate communication, poor planning, design failures, deficient training, inadequate equipment maintenance, and insufficient control and/or monitoring (Reason 1993). In some situations the latent failures stem from extraneous influences (such as climate and landscape) but the acceptance of such conditions and the insufficient compensation of their effects are still consequences of management decisions (Wagenaar et al 1994). Latent failures often lie dormant for many years without creating an accident opportunity. External triggers activate latent failures and cause them to exert negative system influences.

4.2. *Systems approach to the analysis of risk*

Cognitive psychologists and human factors experts have developed a number of practical tools and conceptual models to help specify the range of factors that predispose complex high technology industries to adverse events in particular situations. These have both proactive and reactive applications. In the proactive mode a product or process is systematically assessed to identify potential errors that may occur in relation to that product or process. In the reactive mode errors are traced back to their root causes. This section considers the application of these practical tools and conceptual models in complex high technology industries (section 4.4 will consider how they have been adapted and applied in healthcare).

4.2.1. Predicting error and adverse events

The proactive application of human factors methods includes the use of failure state profiling by the oil industry. Failure state profiling is a method of predicting the causal structure of future accidents on the basis of already visible symptoms.

Wagenaar et al (1994) described the construction of an accident prediction test for application in upstream oil operations (that is those operations between exploration of oil fields and the production of crude oil). Test items were generated using

participant observation and interview methods. Once created, they have been used to help construct and implement new and meaningful action plans.

4.2.2. Tracing error and adverse events back to their root causes

A number of conceptual models have been developed that describe the factors that predispose complex high technology industries to human error and the sequence of events that lead to an accident or catastrophic outcome. These have been used to trace errors back to their root causes. Three conceptual models are now described.

4.2.2.1. Zeebrugge-Harrisburg Syndrome (Pheasant 1988)

Pheasant (1988) developed the concept of the Zeebrugge-Harrisburg Syndrome to describe how catastrophic failures in complex high technology industries result from a combination of several adverse circumstances. The model is presented below.

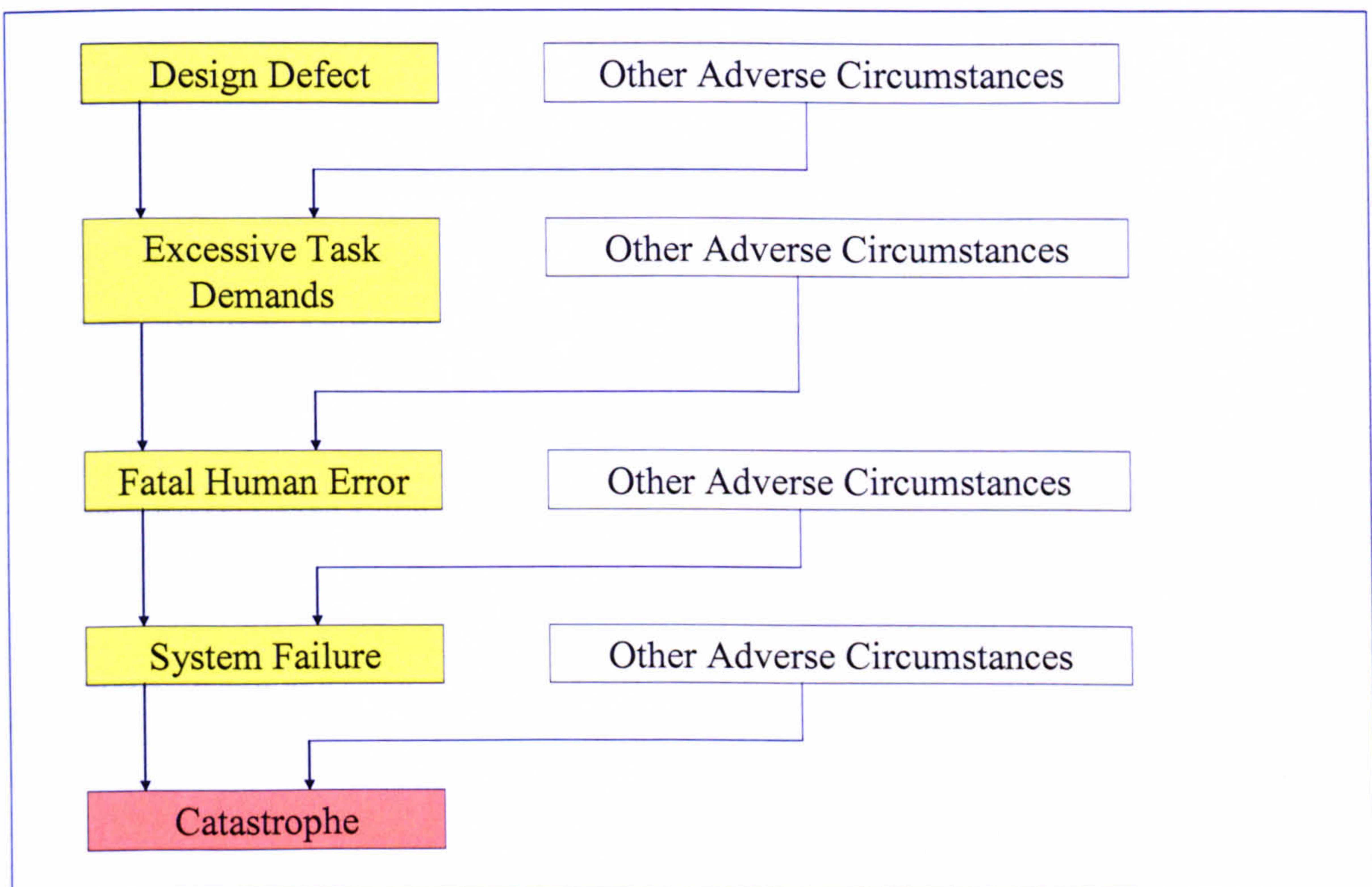


Figure 4.1: Zeebrugge-Harrisburg Syndrome (Pheasant 1988)

Pheasant (1988) classified the adverse circumstances contributing to the capsizing of the Herald of Free Enterprise. The classification included design defects, excessive task demands, fatal human error and system failure. For example, the crew were under considerable management pressure to achieve the fastest possible turnaround in port. They were required to be on board continuously for 24 hours. Excessive

working hours contributed to erratic sleeping patterns and might have been one reason the assistant bosun, who was directly responsible for closing the bow doors, was asleep in his cabin at the time of the accident. Other adverse circumstances included contingencies such as the high tide at Zeebrugge that made it difficult to match the bow doors to the loading ramp on arriving at port.

4.2.2.2. Model of Threat and Error in Aviation (Helmreich et al 1999)

Helmreich et al (1999) produced the Model of Threat and Error in Aviation to illustrate the sources of risk and processes of risk avoidance and error management in flight operations. It was developed using observational data collected during 3500 domestic and international flights. The model is presented below.

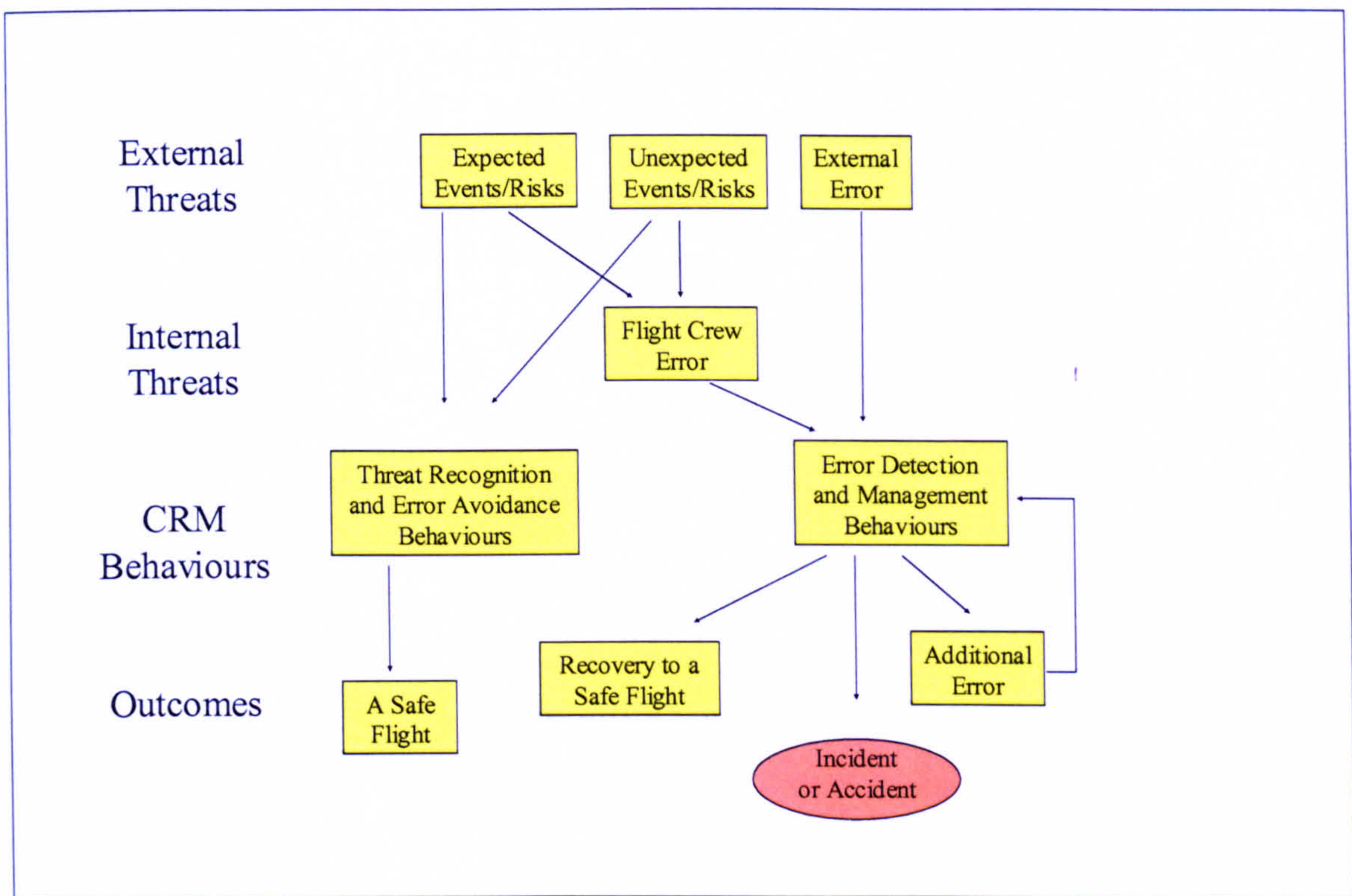


Figure 4.2: Model of Threat and Error in Aviation (Helmreich et al 1999)

According to this model, risk comes from external and internal threats. Threats are defined as factors that increase the likelihood of errors. External threats include expected and unexpected risks. Expected risks include factors such as predicted weather and airport conditions. Unexpected risks include unusual air traffic control commands and system malfunctions. Risk can also be increased by external errors made by air traffic controllers and maintenance staff.

The defences provided by crew resource management⁵ counters external threats. Internal threats are those posed by flight crew errors. These may occur in response to external threats or in the absence of any external precipitating factor. Effective crew resource management detects these errors and ensures the recovery of the aircraft to a safe flight. Failure of crew resource management may result in an additional error or an accident.

The authors suggest the Model of Threat and Error has a number of functions. These include improving trainees' understanding of the sources of risk in flight operations, demonstrating the importance of crew resource management in risk avoidance and error management, providing a template to capture contextual factors and countermeasures in accident analysis, and using the findings of these systematic investigations to develop more effective safety interventions.

4.2.2.3. Generic Organisational Accident Model (Reason 1993)

Reason (1993) developed a generic model of accident causation for complex high technology industries. The purpose of this model was to aid understanding of the relationship between the various factors involved in the genesis of an accident and to identify methods of accident prevention. The anatomy of an organisational accident is presented below.

⁵ Crew resource management (CRM) is the utilisation of all available human, informational, and equipment resources toward the effective performance of a safe and effective flight. CRM is an active process by crew members to identify significant threats to an operation, communicate them to the pilot in charge and to develop, communicate and carry out a plan to avoid or mitigate each threat (Helmreich et al 1999).

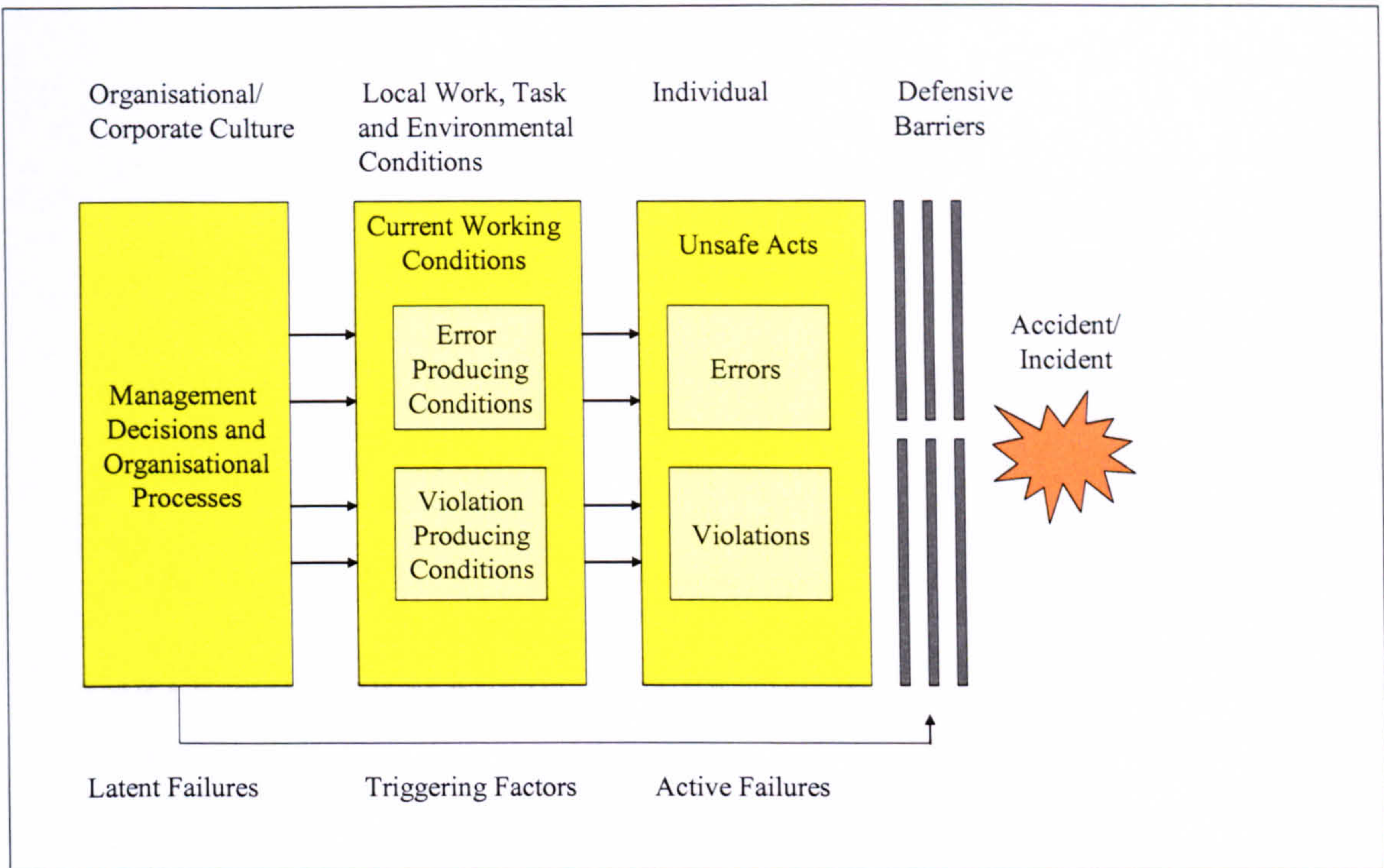


Figure 4.3: Organisational Accident Model (Reason 1993)

The direction of causality is from left to right. The accident sequence begins with the negative consequences of organisational processes. The latent failures so created are transmitted along departmental and organisational pathways to the workplace where they create the error producing conditions that influence human performance and create active failures.

Even when latent failures are activated most complex high technology industries have safeguards and system defences to protect potential victims and assets from harm. A system defence is an administrative or technical constraint that can act in two ways. It can hinder the operator from committing an active failure or it can absorb the effect of the error before it exerts a negative effect on the system.

System defences can be weak or strong and are sometimes called absolute or relative depending on their ability to absorb the effect of errors or prevent active failures. It is easier to make a technical barrier absolute, whereas active failures may slip through the cracks of administrative barriers. Well-defended systems have more than one defensive layer. The purpose of each successive layer of protection is to compensate for the breakdown in the defensive layer in front.

Ideally all defensive layers would be intact. However, they are often full of holes. Each hole is created by an active or latent failure. The size of the hole depends on the severity of the failure. The presence of holes in any one defensive layer does not normally result in a bad outcome, these usually occur when the holes in successive layers line up to permit a trajectory of accident opportunity.

The 1989 Kegworth air crash is an example of how active and latent failures combine with external triggers to penetrate or by-pass system defences (DH 2000a). The British Midland Boeing 737 crashed onto the M1 motorway after the shutdown by the crew of the wrong engine following an engine fire. The pilots were immediately criticised for acting too quickly and for failing to assimilate information from their instruments. Subsequent investigation identified a number of latent failures. These included poor cockpit and instrumentation design (in this case the aircraft's warning system failed to identify the specific nature of the engine failure), poor faultfinding protocols, and inadequate pilot training (DH 2000a).

Although the creation of latent and active failures cannot always be prevented, their adverse safety consequences can be made more visible using systematic approaches to accident investigation. Strengthening the system in light of these findings can reduce the frequency and severity of accidents. Safety recommendations following the Kegworth air crash included the amendment of regulatory requirements concerning the certification of new instrument presentations to include a standardised method of assessing the effectiveness of such displays in transmitting information to flight crew under normal and abnormal conditions (Department of Transport (DT) 1990).

4.3. Complex high technology industries and patient safety

Recently the government recognised the failure of the person centred approach to bring about any systematic learning from adverse events in healthcare and child protection and advocated a systems approach to patient safety (DH 2000a; DES, DH and HO 2003). This section considers what features these domains appear to share with complex high technology industries.

4.3.1. Similarities with complex high technology industries

Dynamic and high risk areas such as operating rooms and intensive care units are considered analogous with other complex high technology industries in which people and complex technologies interact (Orasanu and Connolly 1993; Fletcher et al 2003). For example, Helmreich and Davies (2004) identified a number of features that were common to anaesthesia, surgery and aviation. These are listed below.

- Multiple sources of concurrent information
- Shifting and ill defined goals
- Reliance on indirect or inferred indicators
- Actions having immediate and multiple consequences
- Moments of intense time stress interspersed with long periods of routine activity
- Complex and often confusing human-machine interfaces
- Multiple players with differing priorities
- High stakes
- Multiple sources of threats to safety
- Teamwork essential

Box 4.2: Similarities between anaesthesia, surgery and aviation (Helmreich and Davies 2004)

It is logical to conclude that systems approaches to understanding and analysing adverse events are equally applicable in these dynamic and high risk healthcare domains as they are in other complex high technology industries (DH 2000a). More recently the National Patient Safety Agency (NPSA) has called for a much wider appreciation of the value of the systems approach in preventing, analysing and learning from patient safety incidents in primary care (NPSA 2005). A search revealed no literature summarising the similarities between primary care and complex high technology industries, nor any literature summarising the similarities between child protection and complex high technology industries.

4.3.2. Dissimilarities with complex high technology industries

There is growing appreciation that not only does healthcare have certain properties in common with complex high technology industries but also recognition of the features that set healthcare apart from these industries. Reason (2003) identified six

characteristics he believed distinguished healthcare from other complex high technology industries. These are listed below.

- Diversity
- Activity
- Vulnerability
- Uncertainly
- Regulation
- Openness

Box 4.3: Factors distinguishing healthcare from other complex high technology industries (Reason 2003)

Reason (2003) illustrates these differences by comparing healthcare and rail transport operations. The first difference is that healthcare is more diverse than other complex systems. Healthcare has a multiplicity of goals and as many means of achieving them. In contrast the primary aim of a rail transport system is simply to move people and goods from one point to another. This process involves fewer actions and equipment types than healthcare delivery.

The second difference is that a greater amount of human activity in healthcare is devoted to coping with abnormal or emergency situations than in other complex systems. Abnormal or emergency situations are more error provoking than routine activities. The third is that patients are more vulnerable and unpredictable than commercial consumers. The fourth is that there is greater uncertainty in healthcare than in other systems and interventions are sometimes poorly evaluated. The fifth is that healthcare workers largely regulate themselves, unlike other high hazard industries that are subject to strict external regulation. Lastly, accident investigation in healthcare is often less open than in other domains.

Participants attending Phase Two of the Bristol Royal Infirmary Inquiry highlighted another characteristic that set healthcare apart from other complex high technology industries. They argued that public sector organisations had fewer risk management resources and less money than private sector organisations to invest in staff training and development (Bristol Royal Infirmary Inquiry Secretariat 2000).

4.4. Applying the systems approach to patient safety

This section considers the way that researchers and investigators have applied human factors methods from complex high technology industries to patient safety and adverse events in healthcare. Although the government has advocated a systems approach to error and adverse events in child protection (DES, DH and HO 2003) a search of the research literature revealed few examples of its application in practice.

4.4.1. Predicting error and adverse events

The proactive application of human factors methods in healthcare includes the use of Failure Mode and Effects Analysis in order to identify and prevent potential medication errors. Cohen et al (1994) describe how this approach was used to identify potential errors should prefilled syringes containing lidocaine 1g (recently removed from the market due to safety concerns) be stored on an emergency trolley next to prefilled syringes containing lidocaine 1% 100mg.

The word lidocaine and the number 1 are prominent on both syringes. During an emergency situation someone might easily misunderstand the lidocaine 1g as 1%. The likelihood that such an error would be intercepted is minimal and no defences exist to prevent the wrong product being picked up or the wrong syringe being connected and injected via an intravenous line. The consequence would be probable death.

A number of strategies were generated to reduce these risks. These included recommendations to remove the alternatives (since lidocaine 1g syringes are only used to prepare large volume containers (such as lidocaine 1g in 500mls) they should be replaced with premixed lidocaine bags), improve self-detection (prominent warnings should caution users they have a prefilled lidocaine 1g syringe in their hand) and prevent the operator from completing the series of actions (manufacturers should be encouraged to design prefilled lidocaine 1g syringes that cannot be injected into intravenous lines). No examples of the proactive application of human factors methods in primary care were identified in the research literature.

4.4.2. Tracing error and adverse events back to their root causes

A number of the conceptual models developed to describe the factors that predispose complex high technology industries to human error and the sequence of events that lead to an accident or catastrophic outcome have been adapted and applied to adverse events in healthcare settings. They have been used to analyse the causes of serious accidents and in some instances to identify methods of accident prevention. The application of these models is now explored.

4.4.2.1. Application of the Model of Threat and Error in Aviation

Noting common features between anaesthesia, surgery and aviation, a Swiss teaching hospital invited the University of Texas to help them adapt the Model of Threat and Error in Aviation (Helmreich et al 1999) to the operating room. The Model of Threat and Error in a Medical Environment is presented below.

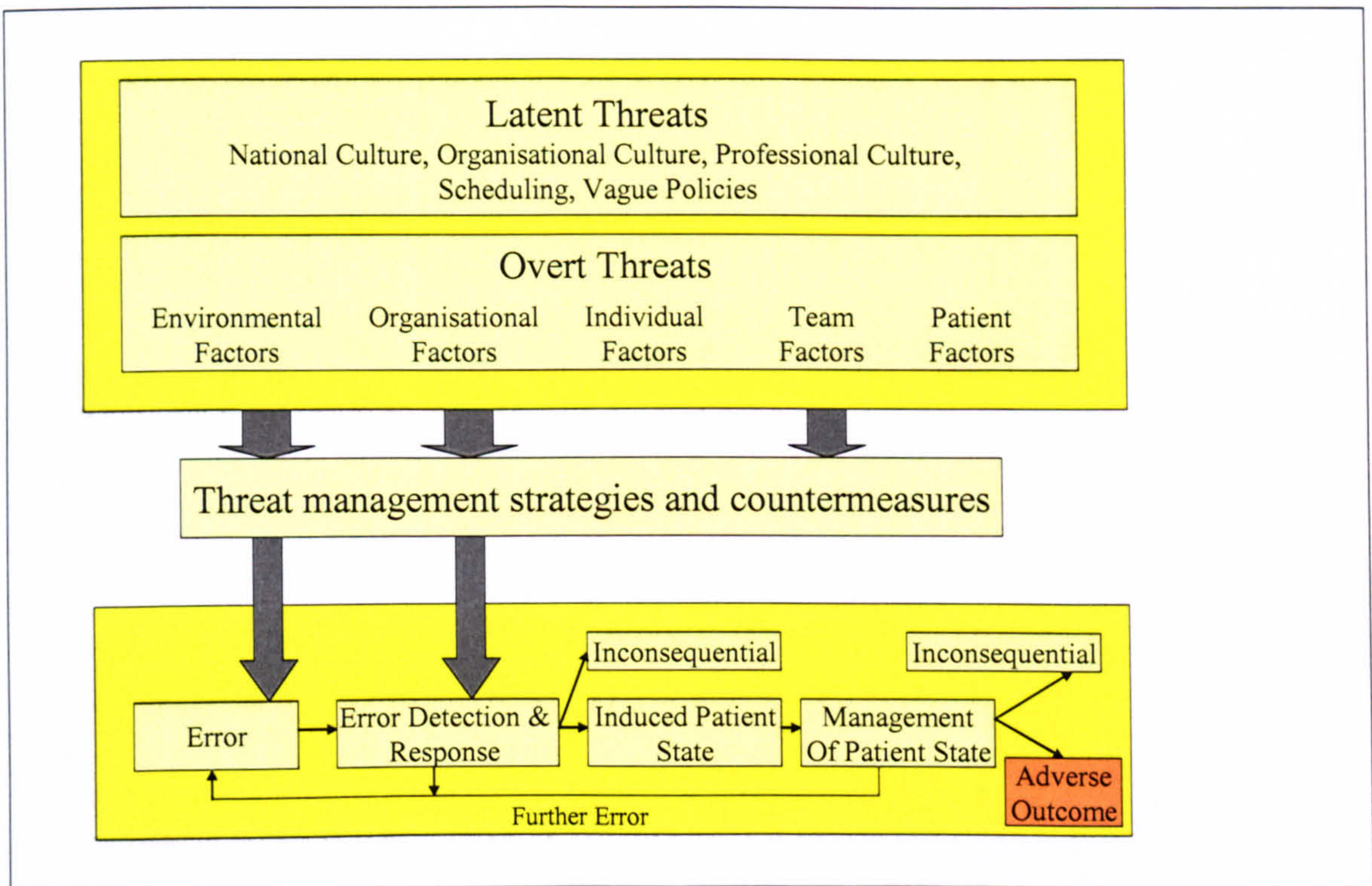


Figure 4.4: Model of Threat and Error in a Medical Environment (Helmreich 2000)

The Model of Threat and Error in a Medical Environment was developed using observational and survey data collected during elective and routine operations in a European teaching hospital (Helmreich and Schafer 1994). The main features of the model are latent threats, overt threats, human error, error management behaviour, and outcomes.

Threats are defined as factors that increase the likelihood of errors; these might be environmental (such as lighting), physician-related (fatigue), staff-related (communication), or patient-related (a difficult intubation). Latent threats are aspects of the system that predispose the commission of error or the emergence of overt threats (such as staff scheduling policies and organisational cultures). Error management behaviours are the actions taken by the healthcare team to manage error (such as effective decision making). The error sequence has five stages: human error (stage one), error detection and response (stage two), induced patient state (stage three), management of patient state (stage four), and adverse outcome (stage five). The model is recursive and describes how each error is either successfully managed to bring about an inconsequential outcome or unsuccessfully managed to precipitate further errors.

Helmreich and Musson (2000) apply the model to data gathered from the news media and court proceedings regarding a case where a young boy died during routine surgery on the eardrum. Their analysis revealed a number of errors including failure of the anaesthetist to maintain alertness, failure of the nurse to awaken the anaesthetist when she suspected he had fallen asleep, and failure of the surgeon to act after receiving an inadequate response from the anaesthetist. For example, the failure of the nurse to awaken the anaesthetist was classified as a decision error (stage one). The nurse stated that she did not disturb the anaesthetist because she feared an altercation. Complaints records revealed the anaesthetist had a history of interpersonal conflict that corroborated this fear. Failure of the nurse to awaken the anaesthetist was not detected by other members of the surgical team (stage two) and the patient remained poorly monitored (stages three and four). Analysis of the incident failed to determine how much the failure of the nurse to awaken the anaesthetist affected the fatal outcome (stage five).

Latent failures included the cultural environment within the operating room and the hierarchical structure that existed between nursing and medical personal, and deficiencies in the peer review process that failed to check the behaviour of the anaesthetist despite formal complaints lodged against him. No examples of the

application of the Model of Threat and Error in a Medical Environment in other healthcare settings were identified in the research literature.

4.4.2.2. Application of the Generic Organisational Accident Model

The Generic Organisational Accident Model (Reason 1993) describes the complex interaction between organisational processes, error-producing conditions, unsafe acts and failed defences involved in the genesis of an adverse event. The method of investigation implied by this model is firstly to examine the chain of events that led to the adverse event and to consider the actions of all those involved and secondly to look further back at the conditions in which people were working at the time of the incident and the organisational context in which it occurred (Clinical Risk Unit and ALARM 1999). Researchers and investigators have developed a number of practical tools to help gather and analyse information from an adverse event using this approach. These are called root cause analysis techniques. Two of these tools are now considered.

Man-Technique-Organisation Analysis

Man-Technique-Organisation (MTO) analysis is an accident investigation method developed by NASA. It was adopted by the American nuclear power industry and more recently by the Swedish National Board of Health and Welfare. The steps of an MTO analysis include gathering information, mapping the event, identifying active failures, identifying contributing causes and situational factors, and identifying ineffective safety features and latent failures. Ternov (1999) developed a taxonomy that covered the major causes of medical mistakes in order to aid the identification of contributing and situational causes. This was adapted from the one used in the American nuclear power industry. The taxonomy covering the major causes of medical mistakes is presented below.

Taxonomy of contributing causes	
Cause categories	Examples of problems in this category
Oral communication	<ul style="list-style-type: none"> • Oral communication from the sender is imprecise • Receiver does not acknowledge the message • Standardised vocabulary is not used • Unnecessary talk is not avoided
Written procedures	<ul style="list-style-type: none"> • Information in procedures is given in the wrong sequence • Text is difficult to understand, ambiguous or too elaborate • Readability is poor • Procedures mix target groups • Procedures written for both experienced & inexperienced users • Too many people instructed to do the same thing, & nobody does it • Available instruction is outdated or otherwise invalid • Unclear which situations the procedure should be used in • Unclear who should use procedures
Workplace design/physical environment	<ul style="list-style-type: none"> • Manoeuvre gear or display is badly designed, hard to reach or hard to read • Readability for important information is bad • Acoustical signals are inappropriately designed • Workplace design is inappropriate • Equipment is badly situated • There are too many people • Lighting is insufficient • Distracting noise is present
Working environment	<ul style="list-style-type: none"> • Insufficient time for staff to prepare for work assignments • Insufficient staff allocated to work or they are insufficiently trained for tasks • Planning of activities is not coordinated between departments • Staff members are easily distracted when performing simultaneous tasks
Task supervision	<ul style="list-style-type: none"> • Tasks are not properly defined for the operator • There is insufficient follow-up from the supervisor • The level of training necessary to perform the task is not defined • Staff performance assessments are not done
Training	<ul style="list-style-type: none"> • Training of operator is insufficient • There is insufficient repetition of training • Educational goals are missing or goals are not related to the task • No follow-up assessment of educational effect is done

Figure 4.5: Taxonomy of the major causes of medical mistakes (Ternov 1999)

A team of research psychologists in the Clinical Risk Unit at University College London have applied MTO analysis to the investigation and analysis of a number of adverse events occurring over a nine month period in a UK obstetric unit. One such event was a post partum haemorrhage (Taylor-Adams et al 1999).

Data collection involved one-to-one interviews with key members of staff. Each member of staff was asked to give a full description of the sequence of events leading to the event and their part in them. Participants were also given a list of statements relating to background factors that probed issues such as workload, supervision and communication. The checklist of background factors is presented below.

Checklist of background factors

- Were the casenotes available, legible, attributable and complete?
- Were there any language/cultural problems or misunderstandings between staff and the patient or the patient's relatives?
- Was there agreement regarding the interpretation of test results?
- Was there adequate and reliable information from all equipment?
- Were the casenotes adequately flagged to alert you to all risk factors?
- Was communication between yourself and other members of staff effective?
- Did the working environment (e.g. heat, noise) affect you?
- Did all the equipment you used work adequately and effectively?
- Did you have enough medical and nursing supplies?
- Did you have to spend time on non clinical duties?
- Was help/advice from another member of staff available at all times?
- Do you feel management showed appropriate care and concern?
- Did staff agree about who was in charge of the ward and the patient?
- Did you have enough time to spend with the patient explaining procedures, possible complications and outcomes?
- Did you have adequate supervision and/or support?
- Did you have to rely on a new (locum) doctor or (agency) midwife whom you had not worked with before?
- Were routine tests carried out and the results documented in the notes?
- Was the appropriate person consulted when necessary about the management of care?
- Were there any delays in carrying out clinical procedures?
- Were test results quickly and easily available?
- Did you feel tired, hungry or unwell?
- Did you feel appreciated and was your morale high?
- Was the patient/were the patient's relatives helpful and cooperative?
- Did you feel your opinions and competence were accepted, appreciated and unquestioned?
- Did you feel you had enough knowledge and experience to deal with the problem/complication?
- Do you feel your orientation period to the ward prepared you for this case?
- Was your training in using equipment/protocols sufficient for this case?
- Did you have to prioritise more than one case simultaneously?
- Did you have an unexpected or sudden increase in workload?

Figure 4.6: Checklist of background or performance influencing factors (Taylor-Adams et al 1999)

Items on the checklist were derived from the research literature describing medical accidents and pilot interviews with obstetric staff. Participants were asked two

further questions: whether they thought anything could have been done differently and whether they thought any improvements could be made. Casenotes were also reviewed. The investigation identified various active failures, error producing conditions and latent failures. Some of these failures are summarised below.

<p><i>Active failure</i></p> <ul style="list-style-type: none"> • The midwives did not record the time between the birth and the separation of the placenta <p><i>Error producing condition</i></p> <ul style="list-style-type: none"> • No clock was available on the ward <p><i>Latent failure</i></p> <ul style="list-style-type: none"> • The design of the environment failed to consider the need for a clock
<p><i>Active failure</i></p> <ul style="list-style-type: none"> • The midwives who delivered the placenta were unsure of its completeness <p><i>Error producing condition</i></p> <ul style="list-style-type: none"> • General lack of awareness of the actions needed when dealing with an incomplete placenta <p><i>Latent failure</i></p> <ul style="list-style-type: none"> • Lack of training and supervision
<p><i>Active failure</i></p> <ul style="list-style-type: none"> • Visitors did not leave the labour room and hindered the work of the doctor and midwife <p><i>Error producing condition</i></p> <ul style="list-style-type: none"> • Lack of assertiveness by the doctor <p><i>Latent failure</i></p> <ul style="list-style-type: none"> • Inadequate leadership and assertiveness training • Absence of a policy limiting the number of people present in the delivery room

Box 4.4: Summary of some of the failures identified in the case of a post partum haemorrhage (Taylor-Adams et al 1999)

Potential preventative actions identified included the recommendation that standard equipment in obstetric wards (such as appropriate lighting and clocks etc.) be available on demand, regular refresher training be provided to enable staff to better identify placenta abnormalities and the development of policies to limit the number of visitors allowed in the delivery room.

Protocol for the Investigation and Analysis of Clinical Incidents

A team of research psychologists at University College London developed the *Protocol for the Investigation and Analysis of Clinical Incidents* (Clinical Risk Unit

and ALARM 1999). The protocol is intended to facilitate the structured and systematic investigation and analysis of adverse events.

The protocol is underpinned by the Framework of Factors Influencing Clinical Practice (FFICP). This is an adapted and extended version of the Generic Organisational Accident Model (Reason 1993) which provides the conceptual basis for the investigation and analysis of adverse events.

Components were derived from medical publications on error and risk management and accident investigations in complex high technology industries. As such it incorporates the generic processes that influence risk and safety in all complex systems whilst at the same time recognising many features that are of particular importance in healthcare. It is intended to be a single broad framework of factors affecting clinical practice (Vincent et al 1998). The FFICP is presented below.

Framework of Factors Influencing Clinical Practice	
Factor types	Influencing contributory factors
Institutional context	<ul style="list-style-type: none"> • Government policy • Economic & regulatory context • NHS executive • Clinical negligence scheme for trusts • Regulation (General Medical Council etc)
Organisational and management factors	<ul style="list-style-type: none"> • Financial resources & constraints • Organisational structure • Policy standards & goals • Safety culture & priorities • Education & training policy • Links with external organisations
Work environmental factors	<ul style="list-style-type: none"> • Staffing levels & skills mix • Workload & shift patterns • Design, availability & maintenance of equipment • Administrative & managerial support
Team factors	<ul style="list-style-type: none"> • Verbal communication • Written communication • Supervision & seeking help • Team structure (congruence, consistency, leadership, etc)
Individual (staff) factors	<ul style="list-style-type: none"> • Knowledge & skills • Competence • Physical & mental health • Motivation
Task factors	<ul style="list-style-type: none"> • Task design & clarity of structure • Availability & use of protocols • Availability & accuracy of test results • Decision making aids • Equipment design • Defences against error
Patient factors	<ul style="list-style-type: none"> • Condition (complexity and seriousness) • Known risks associated with treatment • Language & communication • Personality & social factors

Figure 4.7: Framework of Factors Influencing Clinical Practice (Clinical Risk Unit and ALARM 1999)

Factors influencing risk and safety in clinical practice are listed on the vertical axis and include the institutional context, organisation and management factors, work environment factors, team factors, individual (staff) factors, task factors, and patient factors. These components are called major factors. On the horizontal axis, each major factor is expanded to provide a more detailed specification of the components influencing performance at that level. For example, team factors include verbal communication, written communication, supervision and seeking help, congruence/consistency, leadership and responsibility, and staff response to incidents.

The protocol and framework has been applied to domains at the dynamic, uncertain and high-risk end of healthcare such as obstetric medicine (Clinical Risk Unit and ALARM 1999; Vincent 2001) as well as in inpatient psychiatry (Vincent et al 2000) and general practice (Rogers 2002). The investigation and analysis of an incident of self-harm in a mental health environment and the case of a delayed diagnosis of septic arthritis in general practice are now described.

The first case involved a female patient admitted to a psychiatric unit following an overdose. Her father alerted staff that she was unlikely to be honest about her mental state. The patient asked to go home after three days. The staff thought she was still very depressed and asked her to stay. The following day the patient was very subdued. In the evening she was found having lacerated her wrists and neck. She was transferred to the emergency department where she was commenced on an intravenous infusion and the lacerations sutured under general anaesthetic.

One-to-one interviews were conducted with eight nurses and two senior house officers present at the time of the incident. The interview schedule was divided into four sections. The first asked staff to describe the sequence of events leading up to the incident. In the second they were given a checklist of background factors and asked to indicate which items were relevant. Items on the checklist were derived from the checklist of background factors described in figure 4.6 and additional mental health items generated in multi-disciplinary group interviews. The third explored staff opinions about the incident (for example, whether they thought it was preventable and whether they thought it was managed well). Fourthly they were

asked with the benefit of hindsight what should have been done differently and what recommendations they would make to improve the future running of the unit.

Selected care management problems and the conditions precipitating or contributing to them are summarised below.

Care management problems	Contributory factors
No risk assessment was attempted.	<p><i>Patient characteristics</i></p> <p>Nurses commented that the patient was ‘not one of their regulars’ and they did not know her well enough to interpret her mood or behaviour</p> <p><i>Team factors (communication between staff and relatives)</i></p> <p>Insufficient weight given to warnings issued by the patient’s father</p>
No one witnessed the incident itself	<p><i>Conditions of work (building and design)</i></p> <p>The patient’s bedroom was too isolated for effective observation</p> <p><i>Conditions of work (staffing levels and skills mix)</i></p> <p>The incident occurred during the shift handover when very few nurses were around to monitor the ward.</p>

Box 4.5: Factors identified as contributing to an adverse event in mental health (Vincent et al 2000)

The second case involved an older Portuguese patient who was discharged home following a total knee replacement with instructions to complete a course of antibiotics for pyrexia of unknown origin. A week after discharge a neighbour called to complain that no district nurse had visited. A nurse subsequently visited and instructed the patient to call for a doctor because the wound was moist. The patient phoned the surgery the next evening. The doctor gathered that she had been having pain in her knee and that the district nurse had advised her to call for a doctor. He visited the next day and found the knee was hot and painful. She was readmitted to hospital with a diagnosis of septic arthritis. Selected findings from the subsequent investigation are summarised below.

Contributory factor	Example
Patient factors	<ul style="list-style-type: none"> • The patient was not able to make her worries & concerns clear to the GP because of language difficulties
Individual (staff) factors	<ul style="list-style-type: none"> • The GP interpreted the patient's call as a request for a routine review at the request of the visiting district nurse
Task factors	<ul style="list-style-type: none"> • The patient was discharged on antibiotics without ascertaining the cause of pyrexia
Team factors	<ul style="list-style-type: none"> • There was no call from the orthopaedic ward to indicate a need for district nurse input • The visiting nurse did not discuss the case in detail with nursing colleagues nor with the GP
Work environment factors	<ul style="list-style-type: none"> • There was no strong culture of communication between the district nursing team and the GP
Organisational & institutional factors	<ul style="list-style-type: none"> • Measures designed to optimise bed management can compromise other aspects of the hospital admission and discharge process

Box 4.6: Factors identified as contributing to an adverse incident in general practice (Rogers 2002)

Potential preventative actions included ensuring effective methods of communication are in place between GPs and district nurses, targeting hospital-primary care communication as an area for development and evaluation, and reviewing clinical issues around the management and discharge of patients with postoperative pyrexia of unknown origin (Rogers 2002).

Vincent et al (1998) suggest the framework may have proactive as well as reactive applications. For example, it may be applied as a template for designing and validating risk assessment instruments or used to design studies that examine the impact the major factors and their components have on actual outcomes in patient care (Vincent et al 1998). No examples of its proactive application were found in the literature.

4.5. Developing a framework for domiciliary care settings

The aim of this study was to understand the circumstances in which home carer involvement in medication related activities for older people living at home might jeopardise patient safety. Exploration of the patient safety literature identified the systems approach to understanding human error and adverse events as the most appropriate theoretical framework to help investigate this issue. This approach has generated a number of conceptual models and practical tools to help specify the range of factors that predispose patients to adverse events in particular situations. These may be used proactively to identify system defences and potential hazards, and retrospectively to clarify the factors contributing to an adverse event and to consider the extent to which system defences mitigated its severity.

The FFICP (Clinical Risk Unit and ALARM 1999) has been found to be a useful taxonomy in obstetric medicine (Clinical Risk Unit and ALARM 1999; Vincent 2001), inpatient psychiatry (Vincent et al 2000) and general practice (Rogers 2002). It is anticipated that an equivalent framework specifying the range of factors that predispose older people to adverse events when responsibility for medication related activities is transferred from district nursing to home care services could have similar strengths and provide a useful means of addressing the aims of the study. At the same time the extent to which the FFICP might translate into domiciliary care settings is uncertain. This section considers the ways it might fit quite well and the ways it might not.

4.5.1. Hazards that fit in the FFICP

Preceding chapters identified a number of factors that were likely to predispose older people to adverse events when responsibility for medication related activities is transferred from district nursing to home care services. These were listed in box 2.7 (in section 2.5) and box 3.1 (in section 3.5). These factors are compatible with the major factors listed on the vertical axis of the FFICP. This suggests the FFICP might fit quite well in domiciliary care settings. These factors are presented below.

Hazards in domiciliary care settings	
Institutional Context	<ul style="list-style-type: none"> • Separation of social services functions • Unclear definitions of nursing & personal care
Organisational & Management Factors	<ul style="list-style-type: none"> • Financial constraints • Split home care packages • Inadequate home care training
Work Environmental Factors	<ul style="list-style-type: none"> • No inter service supervision mechanisms • Inadequate provision of patient education
Team Factors	<ul style="list-style-type: none"> • Poor patient information sharing • Different professional identities • Multiple prescribers
Individual (staff) Factors	<ul style="list-style-type: none"> • Inappropriate prescribing • Lack of patient review
Task Factors	<ul style="list-style-type: none"> • Codified & demarcated task splitting • Difficult medication packaging • Prescription inequivalencies • Regimen complexity (including multiple medications)
Patient Factors	<ul style="list-style-type: none"> • Health beliefs • Depression • Cognitive impairment • Physical dependency • Social isolation • Poor drug handling • Medication side effects • Treatment ineffectiveness • Preventative medication • Poor adherence

Figure 4.8: Hazards identified in domiciliary care settings that fit in the Framework of Factors Influencing Clinical Practice

4.5.2. Hazards that might not fit the FFICP

There are a number of factors that distinguish domiciliary care settings from obstetric medicine, inpatient psychiatry and general practice. Those likely to have important patient safety implications when responsibility for medication related activities is transferred from district nursing to home care services are now considered.

4.5.2.1. Charging for social care

Charging policies do not feature in the FFICP because healthcare is free at the point of need. Local authorities on the other hand are empowered to charge for social services (see section 2.1.1). Social care is mostly means tested and subsidised through government grants and local taxation. Charging policies have important patient safety implications because people may refuse essential services on the basis that they cannot afford to pay (or disagree with the principle of paying).

Chetwynd et al (1996) examined the impact of charging on people in receipt of social care. They reported that some people questioned whether they should continue receiving services but in the main people continued because they had a high degree of dependency and saw little scope for reducing or withdrawing from services that met a very real need in their lives. Nevertheless there were some examples of people withdrawing from services (including home care) because of cost.

4.5.2.2. Commercial factors

Critics argue that commercial pressures reduce standards and jeopardise safety. The profit motive has been implicated in failures in industries and services as diverse as construction, prisoner transportation and rail maintenance (BBC 1999). For example, the Health and Safety Executive (HSE) assessed the causes of 100 construction accidents and found that price competition between contractors gave an advantage to companies that were less diligent with health and safety (HSE 2003).

The FFICP does not feature commercial factors because the influence of the private sector has traditionally been relatively limited in UK healthcare provision (however the influence of the external market has increased in the last ten years and now includes the provision of some ancillary services, funding for some major capital schemes, providing elective care for NHS patients, and operating new stand alone surgery centres). In contrast local authorities are expected to make maximum use of the independent sector⁶.

⁶ The role of the independent/private sector in healthcare has increased since this study began. For example, in May 2006 it was announced that Care UK will run a 7 000 patient GP practice and 100 patient per day walk in centre under a contract with Barking and Dagenham PCT.

Commercial factors might have important patient safety implications because the competitiveness of the home care market might encourage providers to take on additional roles and responsibilities for which they are inadequately prepared rather than lose work to rival organisations (Rimmer 2001). *Improving Older Peoples Services* (Social Services Inspectorate (SSI) 2002) heard evidence about home care providers who were not delivering good quality services and found that under performing providers were almost exclusively in the independent sector. They identified problems with high staff turnovers, unreliability and poor training. The SSI linked these shortfalls to inadequate systems for monitoring and review, and to weaknesses in contracting and quality assurance (SSI 2001).

4.5.2.3. Local political decision-making

The FFICP does not feature local political decision-making because responsibility for the allocation of healthcare resources lies with appointed directors (executive and non-executive). Non-executive directors are chosen for the personal contribution they can make to the effective management of the Trust and not to represent the interests of any group. The selection process is not entirely independent and the Labour government has been criticised for failing to take the politics out of NHS board appointments (Butler 2001).

Funds for community care are not ring-fenced. Responsibility for the allocation of resources between local authority services lies with elected councillors. Local political decision-making influences local service delivery (Victor 1997). For example, local authorities with political and ethical objections to charging (see Audit Commission 2000) might choose to provide free personal care and meet the associated costs by cutting services in education and housing and/or increasing local rates. Likewise local authorities might make cuts in community care services to meet priorities in education and housing and/or meet demands for lower rates. The Laming Inquiry (2003) into the death of Victoria Climbié, revealed that from 1997 until 2001 elected members of Haringey Council allocated considerably less to children's services than the minimum expenditure recommended by the standard spending assessment (that is the minimum expenditure assessed by government as necessary for children's services).

4.5.2.4. Preparation of home carers

The FFICP was derived in settings where frontline workers are highly qualified and rigorously trained (for example, doctors receive their primary medical qualification after approximately five years and the vast majority then undertake postgraduate training). In contrast home carers are largely unqualified and until recently received limited formal training (Kett 1998; Bell 2001) and might have insufficient knowledge and skills to meet the demands made upon them.

4.5.2.5. Personal control in the home

The patient has ultimate authority in the home (Fairhurst 1997). It is private territory and the possessions within it are symbols of self-identity and self-expression (Dant 1988). The metaphysical and psychological dimensions of the home are likely to furnish the occupant with the confidence to exercise their authority and challenge the dominance of district nursing and home care personnel. In contrast there is no private space in secondary care settings, a process of institutionalisation inhibits self-identity and self-expression and authority is exercised through a strict medical and nursing hierarchy (Twigg 1997).

Research has explored patient autonomy in different birthing environments and findings suggest that home birth women have significantly higher levels of choice and control over the management of labour than hospital birth women (Hodnett et al 1989). Likewise, Morison et al (1998) described how birthing parents rather than the attending midwife controlled and manipulated light, ventilation and room temperature during home births.

4.5.2.6. Extra system contingencies

The Zeebrugge-Harrisburg Syndrome (Pheasant 1988) and the Model of Threat and Error in Aviation (Helmreich et al 1999) recognised that neither maritime transport systems nor aviation operate in closed systems. For example, the former recognised that maritime operations are susceptible to extra system contingencies such as tidal movements. Likewise flight operations are susceptible to weather patterns. Both models recognised the contribution of these external factors in accident causation and outcome. External factors do not feature in the FFICP because hospitals are closed

settings. Domiciliary care settings are on the other hand less bounded. The extra system contingencies likely to affect domiciliary care settings are now considered.

Material and physical dimensions of the home

District nurses and home carers have limited control over the material and physical dimensions of the home. Independent inquiries have identified the role accommodation played in a number of community mental health tragedies. For example, the inquiry into the care and treatment of Raymond Sinclair (who was convicted of killing his mother) found that overcrowding was one factor contributing to the tragedy (Lingham et al 1996). Sinclair lived with his mother and brother in a small one-bedroom flat. The inquiry described how he and his brother alternated between sleeping on a sofa and on two armchairs pushed together.

The material and physical dimensions that might influence medication management for older people living at home include the presence or absence of safe medication storage facilities and the ease or difficulty with which district nursing and home care services are able to access or enter private property.

Local environment

Home carers and district nurses visit a number of patients each day and they must walk or drive between assignments. The local environment possesses certain physical and geographical features that are likely to affect the delivery of care. For example, there are accounts of day centre transport services being affected by inclement weather in rural areas (Gibson and Whittington 1995) and home care provision being affected by controlled parking zones in urban areas (Harrison 2001). Physical and geographical features that might influence medication management for older people living at home include those affecting the accessibility of local pharmacy services.

Local labour market factors

Problems recruiting and retaining home carers have a long history (see section 2.1.2.1). Hunter (1999) described how competition from the Bluewater shopping centre made attracting people to work in home care in southeast London especially difficult and Brown (1999) described how small labour markets made home care

recruitment difficult in rural areas. Staff shortages might contribute to poor continuity of care.

4.5.2.7. Lone working with minimal supervision

Care in domiciliary settings takes place behind closed doors with minimal supervision. District nurses and home carers work on a one-to-one basis with the patient. Lone workers cannot be subject to constant supervision and bad practice is difficult to detect. An extreme example is the case of Harold Shipman whose victims were mostly killed at home when no one other than the doctor was present (Shipman Inquiry 2002). The best estimate is that he killed 236 patients over 20 years without anyone noticing (Baker 2001).

Independent inquiries have identified the absence of effective supervision for staff working in isolation in a number of mental health tragedies. For example, Andrew Robinson killed an occupational therapist whilst he was undergoing inpatient psychiatric treatment. The subsequent inquiry highlighted a number of worrisome features in relation to the care he received prior to his admission to hospital. For example, his most recent community psychiatric nurse had discharged him from her caseload because he was refusing his depot medication. The inquiry judged this to be a serious error of judgement that could have been avoided if the nurse had not been functioning with little or no supervision (Blom-Cooper Inquiry 1995).

Investigative journalists have recently highlighted the inadequate supervision of people employed to care for vulnerable older people living alone. For example, an assistant producer on the BBC Panorama programme worked undercover as a home carer for three months and described incidents where she witnessed colleagues roughly handling patients and charging patients for care they did not receive (BBC 2003). Likewise an article in the Observer newspaper recounted various allegations against independent sector home carers including theft and neglect (Doward 2004).

4.5.2.8. Application of high technology devices

Technology plays a significant role in hospital settings. Far fewer high technology devices are used in domiciliary care settings. Those that are used include machines to nebulise medicines for long term chest conditions, oxygen concentrators,

hydraulic bath chairs, electronic profiling beds and syringe drivers for subcutaneous infusions. Although there is no evidence to suggest that medical devices used in domiciliary care settings are subject to fewer maintenance and servicing procedures than those in hospital settings, it seems reasonable to assume that more practical barriers to checking equipment exist off site than on. There is also greater likelihood that everyday items will be adapted to support health and social care activities in domiciliary settings than hospital settings. For example, Sexton and Gokani (1997) described one study where one third of the sample of older people used a knife or a tin-opener to gain access to medication stored in child resistant containers.

4.5.2.9. Family circumstances

Families are ancillary participants in hospital settings. However the main source of assistance for older people living at home is a spouse, daughter or son (Tinker 1996). The latest General Household Survey found that 26% of carers gave assistance with washing and dressing and 22% administered medication (National Statistics 2002).

The participation of family and friends in care provision is likely to affect patient safety. For example, some studies have reported that older people living with a relative were more likely to adhere to prescribed medication than older people living alone (see section 3.2.3.1). At the same time their participation might have a negative effect since the medication role has been found to be an onerous one that contributes to carer stress (Goldstein et al 1993; Goldstein and Rivers 1996) and might consequently contribute to an adverse event.

4.5.2.10. Regulation

Statutory regulation exists to ensure standards of practice by regulated practitioners and to protect the public against the risk of poor practice (DH 2004a). It works by setting agreed standards of practice and competence, by registering those who are competent to practice and by restricting the use of specified titles to those who are registered. It can also apply sanctions such as removing from the register any practitioner whose fitness to practice is impaired. The General Medical Council (GMC) registers doctors, the Nursing and Midwifery Council (NMC) registers nurses and the General Social Care Council (GSCC) registers social workers. Home carers

have not yet been invited to join the Social Care Register and no timescale has been set for their registration.

4.5.2.11. Accountability

Accountability consists of an individual giving an account of his or her actions and being held to account for those actions (Stewart 1984). Professional accountability is primarily concerned with responsibility for losses (Alaszewski et al 1998). There is a difference between professionals who are self-employed and sell or contract to provide patient care and those who are employed by organisations and provide patient care on behalf of those organisations.

Self-employed professionals (such as general practitioners who retain the status of independent contractors) are personally accountable for their actions and can therefore be personally held to account for them. They must have their own medical insurance and can be sued when patients are harmed as a result of their negligence. Accountability in the medical profession tends to be to patients via the courts rather than to the employing authority. The medical profession is also accountable to the General Medical Council (which provides a licence to practice). The ultimate sanctions for negligence include litigation and suspension from the GMC register. It might also include criminal proceedings.

Employed professionals (such as nurses and social workers) draw their primary identity and authority from their status as employees of specific organisations. They are expected to operate within the framework of organisational policies and if serious patient harm occurs then (as long as they can demonstrate they were implementing organisational policy) it is the organisation that will be held responsible. Employed professionals are accountable to their employing organisation. The nursing profession is also accountable to the Nursing and Midwifery Council and social workers to the General Social Care Council. The ultimate sanctions for negligence include dismissal by the employing organisation and suspension from either the NMC or GSCC register. It might also include criminal proceedings.

Home carers are not professionals and cannot be held professionally accountable for their actions. They are however expected to operate within the framework of

organisational policies. The ultimate sanction for failure to follow organisation policies would be dismissal by the employing organisation. It might also include criminal proceedings.

4.5.2.12. Attitudes to information sharing

Issues of confidentiality and privacy are central to the provision of health and social care. Potential conflict between protecting the confidentiality and privacy of the individual patient and realising the benefits to others and to society of allowing access to information mean that healthcare professionals are sometimes unsure whether sensitive patient information should be shared with social care professionals and vice versa. Independent inquiries in a number of community mental health tragedies have vividly explained why it is crucial to disclose patient information to agencies such as housing associations and day centres on a need to know basis. For example, Kim Kirkman suffered from psychopathy and was held in a secure hospital following a series of burglaries and assaults. After 17 years he received a conditional discharge and was offered and accepted the tenancy on a housing association flat. Within six months he was charged with the murder of a neighbour. The subsequent inquiry found that staff had not communicated important information about Kirkman to the housing association for fear of breaching medical confidentiality and fear of the application being rejected (Kirkman Inquiry 1991)

4.6. Conclusion

Examination of the patient safety literature suggests the systems approach is the most appropriate theoretical framework to understand human error and adverse events. This approach has generated a number of conceptual models and practical tools to help investigate and analyse human error and adverse events in healthcare. The FFICP has been found to be a useful taxonomy in obstetric medicine, in-patient psychiatry and general practice.

It is anticipated that a similar framework specifying the range of factors that predispose to adverse events when responsibility for medication related activities are transferred from district nursing to home care services could provide a useful means of addressing the aims of the study. At the same time the extent to which the FFICP might translate into domiciliary care settings is uncertain. Preliminary consideration

indicated that it might fit quite well in some ways. However a number of domains of risk were identified that distinguished domiciliary care settings from the settings in which the FFICP was derived, and has so far been applied. These are listed below.

- Charging for social care
- Commercial factors
- Local political decision making
- Preparation of home cares
- Personal control in the home
- Extra system contingencies
- Lone working with minimal supervision
- Application of high technology devices
- Family circumstances
- Regulation
- Accountability
- Attitudes to information sharing

Box 4.7: Factors that distinguish domiciliary care settings from hospital settings

Exploration of consonance between the domains of risk identified in domiciliary care settings and those identified in hospital settings could enable a greater understanding of the extent to which the FFICP has wider applicability. The following chapter provides an account of the study methodology.

Chapter 5: Study methods

The aim of this study was to better understand the circumstances in which home carer involvement in medication related activities for older people living at home might jeopardise patient safety and to identify strategies to diminish the risk of errors and adverse events. The objectives were threefold. The first objective was to identify what medication related activities are transferred from district nursing to home care services. The second objective was to develop a taxonomic model that specified the range of factors that predispose older people living at home to adverse events when medication related activities are transferred from district nursing to home care services. The third objective was to use this model to consider the implications for risk minimisation in a changing UK policy environment. The purpose of this chapter is to provide a theoretical and practical account of the study methodology and a contextual description of the study sites and respondents.

5.1. Study design

This section discusses the key aspects of the study design including data collection methods, approach to sample selection and the chosen focus and location of the study.

5.1.1. Data collection methods

In choosing the data collection methods, consideration was given to the approaches used in other studies whose aim it was to understand human error and adverse events in healthcare settings. Observational approaches have been used successfully in this field. The strength of observational methods is that they provide direct access to what people do rather than what they say they do. They also allow the researcher to record the mundane and unremarkable features of everyday life that respondents might not have felt were worth commenting on and the context within which they occur (Green and Thorogood 2004).

MacKenzie et al (1993) used video data and interviews to analyse group decision-making processes when patients arrived in the emergency department at the

University of Maryland Medical Centre. They observed participants make a number of knowledge-based errors (such as incorrect drug administration or dosage) in stressful, time-pressured situations. However, at interview the same participants reported primarily procedural-type errors (such as not preoxygenating the patient before intubation) in parallel situations. These findings demonstrate how accounts of behaviour are not always related to what people actually do. Observational methods have been used to analyse team behaviour in other safety critical situations. For example, Helmreich (2000) described how observational and survey data were used to detect behaviours that increased the risk of human error in the operating room. These included interpersonal conflict and failures in communication, leadership, planning and vigilance.

Despite these strengths, observational methods were deemed inappropriate in the present study. The reasons were twofold. The first was because some of the features anticipated as having important safety implications in this context (such as local labour market factors (see section 4.5.2.6)) are not amenable to observation. This meant a framework generated through observation would be incomplete. The second was because medication related activities for older people living at home do not (unlike operations) constitute tightly delineated and observable events in terms of time or space. Activities for a single patient occur at different times (for example, the daily administration of medication at breakfast, midday, evening meal and bedtime, the weekly loading of a medication compliance device and the monthly collection of repeat prescriptions) in different settings (including the home, the chemists and the surgery) and observing these activities with sufficient frequency to collect meaningful data would be impracticable.

Interview approaches have also been used successfully in this field, especially in the context of understanding a single event. The strength of interview approaches is that they can explore what is not amenable to observation. They offer the possibility of investigating underlying motives and the reasoning behind actions as well as eliciting the factors that do not directly affect human error but nevertheless predispose patients to adverse events. A team of research psychologists in the Clinical Risk Unit at University College London used this approach to analyse a series of single incidents that occurred in one inner London maternity unit over a period of nine

months (Vincent and Bark 1995; Stanhope et al 1997; Taylor Adams et al 1999). The people concerned were all interviewed individually within 48 hours of each incident. They usually included at least one obstetric doctor and one midwife. One such incident was described in detail in section 4.3.3.2. Meurier (2000) also used interviews to analyse single incidents. He invited 20 hospital nurses to produce a critical incident of an error they had made in their professional practice. Five nurses were approached for an in-depth interview relating to their incident.

The decision was made not to use interview-based analysis of a single incident in the present study because it would not generate a framework applicable to a range of different types of incidents. At the same time an assumption was made that analysing a series of incidents seemed likely to be impractical. This approach is feasible in hospital settings where adverse events occur in approximately 10% of all hospital admissions (Vincent et al 2001). The team in the Clinical Risk Unit at University College London could therefore anticipate with some certainty that a number of adverse events would occur over a period of nine months on any maternity unit. In comparison there is no evidence about the frequency with which adverse events occur in domiciliary care settings when medication related activities are transferred from district nursing to home care services (see section 3.4.2). Hence it could not be anticipated with any certainty that adverse events would occur often enough for interview-based analyses of many incidents to be a practical approach to data collection.

The interview approach has also been used to explore attitudes and beliefs about human error and adverse events. For example, Hand and Barber (2000) interviewed 17 hospital nurses and explored their feelings in relation to the causes of medication errors in general rather than in relation to a single incident. A decision was made to use this approach in the present study, as it would not require respondents to have had direct involvement in an incident. Rather, it would draw on their perceptions of risk whether these were shaped by direct involvement in an incident, peripheral involvement in an incident, or general awareness of the factors that create difficulties and expose patients to harm. At the same time, information could be drawn from a range of different types of events if respondents could recall them.

Three interview structures were considered. The first was semi-structured interviews with predetermined topic areas based on the factors identified from the literature that might predispose older people to adverse events when responsibility for medication related activities is transferred from district nursing to home care services. These factors were summarised in box 2.7 (section 2.5) and box 3.1 (section 3.5). The strength of this approach would have been that by focusing on what is already thought to be important it would have helped confirm whether the obstacles, risks and difficulties identified from the literature do indeed jeopardise patient safety in domiciliary care settings. The disadvantage of this approach would have been that respondents would have had to fit their responses into the categories presented. This might have distorted their perceptions and experiences. Furthermore no previously undocumented safety barriers, hazards or domains of risk would have been identified.

Semi-structured interviews with predetermined topic areas based on the components described in the FFICP were also considered. This approach would have been subject to the same limitations described above. Furthermore there were a priori grounds for believing that some of the components would not be relevant in domiciliary care settings. The third interview structure considered was open-ended interviews in which greater attention is paid to the respondent's concerns. A decision was made to use this approach since it would enable the system defences, hazards and domains of risk to be defined, not by the literature or experts in hospital settings but by the respondents themselves.

5.1.2. Approach to sample selection

There were multiple categories of people with potentially relevant experience. These included general practitioners and community pharmacists as well as patients and informal carers, nurses and home care staff. General practitioners might encounter home carers and discuss medication related issues during surgery appointments or observe medication related problems during home visits. Similar opportunities might have arisen when community pharmacists delivered medication or when home carers visited the pharmacy to collect prescriptions. One advantage of interviewing general practitioners and community pharmacists would have been that because of their

detachment from direct responsibility for medication administration they could have provided a more detached and impartial view than district nurses or home carers. However, encounters between general practitioners and home carers and community pharmacists and home carers are limited and it was assumed that few would have sufficient everyday experience or wide-ranging enough experience to provide more than patchy information describing the circumstances in which home carer involvement in medication related activities might jeopardise patient safety. This meant the framework would have been incomplete. For that reason a decision was made not to interview general practitioners or community pharmacists.

There are strong pressures to include patients as research participants in applied healthcare research. Current government policy has placed the patient at the centre of all NHS activities including research and development (DH 2000c). The advantage of including patients in the present study would have been to capture the lived experience of those people that actually receive assistance with medication related activities. However, although patients would have been in a position to provide a very detailed account of certain aspects of their own situation, there were many other aspects (especially those in relation to the organisation and management of district nursing and home care provision) that they could not illuminate. This meant that a framework based on patient interviews would have been incomplete. At the same time it was felt that talking to patients speculatively about the factors that are likely to jeopardise their safety might provoke apprehension and fear amongst those who were vulnerable. For these reasons a decision was made not to interview patients.

Personal experience suggested district nursing and home care personnel had extensive and directly relevant experience of the issues under investigation. It also suggested they had sufficient everyday experience to provide detailed information relating to the circumstances in which home carer involvement in medication related activities might jeopardise patient safety. The aim was to interview staff that would encompass a reasonably comprehensive range of experiences of district nurses and home carers and that this would include home care coordinators and home carers, and district nurses and community staff nurses.

Home care coordinators and home carers were expected to give different perspectives on the issues under investigation as would district nurse team leaders and community staff nurses. Home care coordinators are responsible for the organisation and delivery of care to a group of patients. They hold a patient caseload and manage a team of home carers. Their responsibilities include administrative tasks (such as programming and allocating work), personnel management (such as recruitment and supervision) and undertaking risk assessments (such as moving and handling, infection control and hazardous substances). Home carers on the other hand provide direct hands on care but have no managerial responsibilities. District nurse team leaders are registered nurses who have undergone additional post registration training in order to achieve a recognised district nursing qualification. They hold a patient caseload and manage a team of community staff nurses. They are also qualified to prescribe treatments from the Nurse Prescribing Formulary. Community staff nurses are registered nurses. They provide direct hands on care but have limited managerial responsibility. An assumption was made that home care coordinators and district nurse team leaders would provide a perspective from the higher echelons of participating organisations and home carers and community staff nurses from the front line. The decision was therefore made to identify a sample of respondents from staff groups at both levels.

The independent home sector provides 56% of home care contact hours in England and Wales (DH/National Statistics 2000: table 1.1). The decision was made to include both local authority and independent sector home care personnel. This was based on an assumption that commercial factors such as the competitiveness of the home care market might predispose to adverse events (see section 4.5.2.2). The intended categories of respondents are illustrated below.

Local authority home care coordinators	Independent sector home care coordinators	District nurse team leaders
Local authority home carers	Independent sector home carers	Community staff nurses

Figure 5.1: Intended categories of respondents

The decision to focus the study on district nursing and home care personnel was not without disadvantages. In particular, one significant limitation was that neither group was likely to be wholly impartial. Both might under-report hazards and adverse events in order to portray themselves in a positive light. The researcher sought to minimise such distortions by making great efforts to design an unthreatening questionnaire schedule (see section 5.2.4).

5.1.3. Location

The Directory of Community Nursing 1998/99 (PMH 1999) listed all the community health trusts and local authorities in England. There were several methodological choices to consider regarding the focus and location of the study. The first was whether to undertake a survey whereby respondents were dispersed over a wide geographical area. The value of talking to people in a diversity of situations would have been to capture a wide variety of system defences, hazards and domains of risk in order to comprehensively populate the developing framework. However, distributing the research effort across a wide geographical area would not have afforded the opportunity to consider in detail, particular local contextual factors that may be highly pertinent when seeking to understand the circumstances in which home carer involvement in medication related activities might jeopardise patient safety. The absence of contextual details would preclude a commentary describing the applicability of the framework in different settings according to local

circumstances and conditions. Furthermore, a dispersed approach would have involved excessive travel that was impractical for the researcher to resource. For these reasons a decision was made not to use a wide geographical survey.

The second methodological choice was whether to focus on a single case study site. What a single case study could have done that a wider survey could not was study events in detail. Collecting data from multiple persons in one study site would have provided a more complete, contextual portrayal of the circumstances in which home carer involvement in medication related activities might jeopardise patient safety. Moreover, a single site would have placed fewer travelling demands on the researcher. However, restricting the focus of the study to a single site would have provided little scope to capture the system defences, hazards and domains of risk that might be location specific and not particular to the site under investigation. Furthermore restricting the focus to a single site would have provided little scope to determine how relevant the framework was in other settings. For these reasons a decision was made not to use a single case study site.

Instead it was decided to undertake the study in two highly contrasting study sites. The advantages of this approach were threefold. The first was that it would retain the strengths of the single case study site (that is provide a complete, holistic and contextual portrayal of the circumstances in which home carer involvement in medication related activities might jeopardise patient safety). The second was that it would increase the likelihood of capturing system defences, hazards and domains of risk that might be location specific and thus more extensively populate the framework. The third was that it would enable some explanation of the extent of consistency and variation in hazard occurrence, which would help determine whether the framework was likely to be relevant in other settings and which of its components were likely to be affected by regional and local circumstances.

5.2. Study methods

This section explains the selection of study sites and respondents, the design of the interview questionnaire and the conduct of the interviews. It also describes the collection of data describing the respondents and study sites.

5.2.1. Selecting study sites

The selection of study sites was based on both theoretical and practical considerations. Theoretically the sites were chosen on the basis that they demonstrated variation in some of the features that were predicted to have important patient safety implications in domiciliary care settings (see section 4.5.2). The selection criteria are described below. The first column lists the features that broadly guided the selection of study sites and the second the measures that determined whether or not variation existed.

Sources of variation	
Geographical features	<ul style="list-style-type: none">• Population density• Transport provision
Labour market factors	<ul style="list-style-type: none">• Unemployment
Family circumstances (patterns of informal care provision)	<ul style="list-style-type: none">• Household size• People with caring responsibilities

Table 5.1: Theoretical criteria guiding the selection of study sites

Data describing geographical features, labour market factor and family circumstances were gathered from census material. Practically, the sites were chosen according to whether they were easy to travel to and around. Considerations of convenience only came into play when deciding between equally suitable alternatives.

One study site was situated in inner London and comprised an entire London borough and its corresponding one half of a community health trust (the community health trust served two London boroughs in total). The researcher lived in the London borough under investigation. The other site was situated in the East Midlands and comprised one borough council and two district councils and one entire community health trust. Demographic information suggested the borough council was predominantly urban (but with some outlying rural settlements) and the two district councils were predominantly rural (but with some urban centres). The researcher had previously lived in a neighbouring borough and had access to transport and local accommodation. After the site was sampled local healthcare provision was reconfigured and a new primary care trust was created to serve the two

district councils. To ensure anonymity the inner London study site will be known as Site A and the East Midlands study site as Site B (the borough council in Site B will be known as BC1 and the district councils in Site B as DC1 and DC2). The ways in which the study sites varied according to the stipulated theoretical criteria are described in section 5.7.

5.2.2. Anticipated number and distribution of respondents

The aim was not to achieve a representative sample but to interview staff that would encompass a reasonably comprehensive range of experiences of district nurses and home carers in Site A and Site B. It is suggested that little new is learnt in qualitative research after interviews have been conducted with 12 – 26 people in any one category (Luborsky and Rubinstein 1995). In this research there were six intended categories of respondents (see figure 5.1). The aim was to interview a sufficiency in each category as to obtain a meaningful and manageable amount of data. It was estimated that 60 open-ended interviews would be conducted. Roughly equivalent numbers of home care and district nursing personnel

The researcher sought to sample respondents from the front line as well as the higher echelons of participating organisations and from the independent home care sector as well as the local authority sector. The estimated number and distribution of respondents is described below.

Anticipated distribution of respondents			
	Site A	Site B	Total
Home care personnel			
Local authority home care coordinators	4	4	8
Local authority home carers	4	4	8
Independent home care coordinators	4	4	8
Independent home carers	4	4	8
Sub total	16	16	32
District nursing personnel			
District nurse team leaders	7	7	14
Community staff nurses	7	7	14
Sub total	14	14	28
Total	30	30	60

Table 5.2: Anticipated number and distribution of home care and district nursing respondents

In the event, the reconfiguration of healthcare provision in Site B (see section 5.2.1) meant the number and distribution of district nurse respondents had to be reassessed. Fewer nurses were sampled from the primary care trust because it was a relatively small organisation and it was felt that interviewing any more than four nurses would be excessively burdensome on their time and resources. The anticipated number and distribution of district nursing respondents in Site B is described below.

Anticipated distribution of respondents			
	Community health trust	Primary care trust	Total
District nurse team leaders	5	2	7
Community staff nurses	5	2	7
Total	10	4	14

Table 5.3: Anticipated number and distribution of district nurse respondents in Site B

Hardy (1998) reported that 86% of independent sector home care providers in England and Wales were from the private for profit sectors. The researcher sought to sample respondents from both the private for profit and not for profit sector. It was thought that perceptions and experiences might be influenced by the presence or absence of commercial pressures (see section 4.5.2.2). The researcher also sought to sample respondents from different local authority home care and district nursing teams within the study areas, since it was thought that perceptions and experiences might be influenced by local variations in practice.

5.2.3. Selecting the study respondents

5.2.3.1. Local authority home care respondents

Permission to approach local authority home care personnel was sought by writing to the Assistant Chief Social Services Officer in Site A and the Director of Social Care in Site B. The letter described the researcher's background and experience, the purpose of the investigation, the methods to be used and a commitment to confidentiality and anonymity. The Director of Social Care in Site B posed a number of questions in order to determine whether the research would offer practical solutions (not just definitions of problems) and whether support had been secured from its corresponding health trust. Relevant assurances were given and permission was granted to liaise with the relevant service managers in each study site.

There were three mainstream teams in Site A. They were centrally administered from the borough council offices. Teams were organised geographically. The principle service manager provided a list of coordinators (team leaders ($n = 3$), assistants ($n = 5$) and an out of hours coordinator). A list of home carers was not requested because it would not have been possible to identify those home carers who did or did not have sufficient medication related experience with older people to meet the sampling criteria.

Five coordinators from three teams were approached in the first instance. They received study information sheets (appendix 2) and a covering letter. The letter described the researcher's background and experience, the purpose of the investigation, the methods to be used and a commitment to confidentiality and anonymity. It also explained that participation was entirely voluntary.

Follow-up telephone calls were made after two weeks. One of those approached was on indefinite sick leave. Another said she was too busy to take part. She also reported that the department was undergoing massive reorganisation (20% of home carers were being asked to take voluntary redundancy) and said it was unlikely that her colleagues would agree to take part in any study during such turbulent times. Three agreed to participate but one later cancelled and refused to reschedule. An

attempt to recruit further coordinators was deferred until the reorganisation of the department was complete. Recruitment resumed after four months, at which point one coordinator and the outgoing principal service manager agreed to participate.

The researcher did not want to approach home carers arbitrarily because not all were expected to meet the sampling criteria. Therefore coordinators were asked at interview to approach home carers with experience undertaking medication related activities for one or more patients on a regular basis. This form of sampling is similar to the snowball approach, whereby initial contact is made with a small group of people relevant to the topic of interest that is then used to establish contact with others.

Two coordinators agreed to approach a number of home carers. There were approximately 40 home carers in each team. Follow-up telephone calls were made at two weeks. One coordinator deferred approaching anyone until after the reorganisation (and after four months said no one was interested in taking part). The other provided the contact details of two home carers. Each was sent study information sheets with a covering letter which asked them to contact the researcher at their convenience (no attempt was made to telephone them at work because they spent very little time in the borough council office). Both agreed to participate.

It was recognised that this approach to sampling could undermine informed consent. That is to say home carers might have believed participation was an implicit part of their duties, which might have prevented them from refusing to participate. In order to ensure the study complied with established ethical principles, when the researcher spoke to the home carers she told them there was absolutely no obligation to participate and that their nominating manager would not be informed of their decision to participate or not (informed consent is discussed in more detail in section 5.3.1).

The researcher was keen to engage another home carer but attempts to do so were unsuccessful. For example, the outgoing principal service manager was encouraged to approach an additional home carer but left without doing so. The incoming principal home care manager was approached but was too busy to engage with the

investigation. In total six people from three teams were interviewed. The selection of local authority home care respondents is summarised in figure 5.4. The distribution of respondents is illustrated below (the shaded areas represent people interviewed).

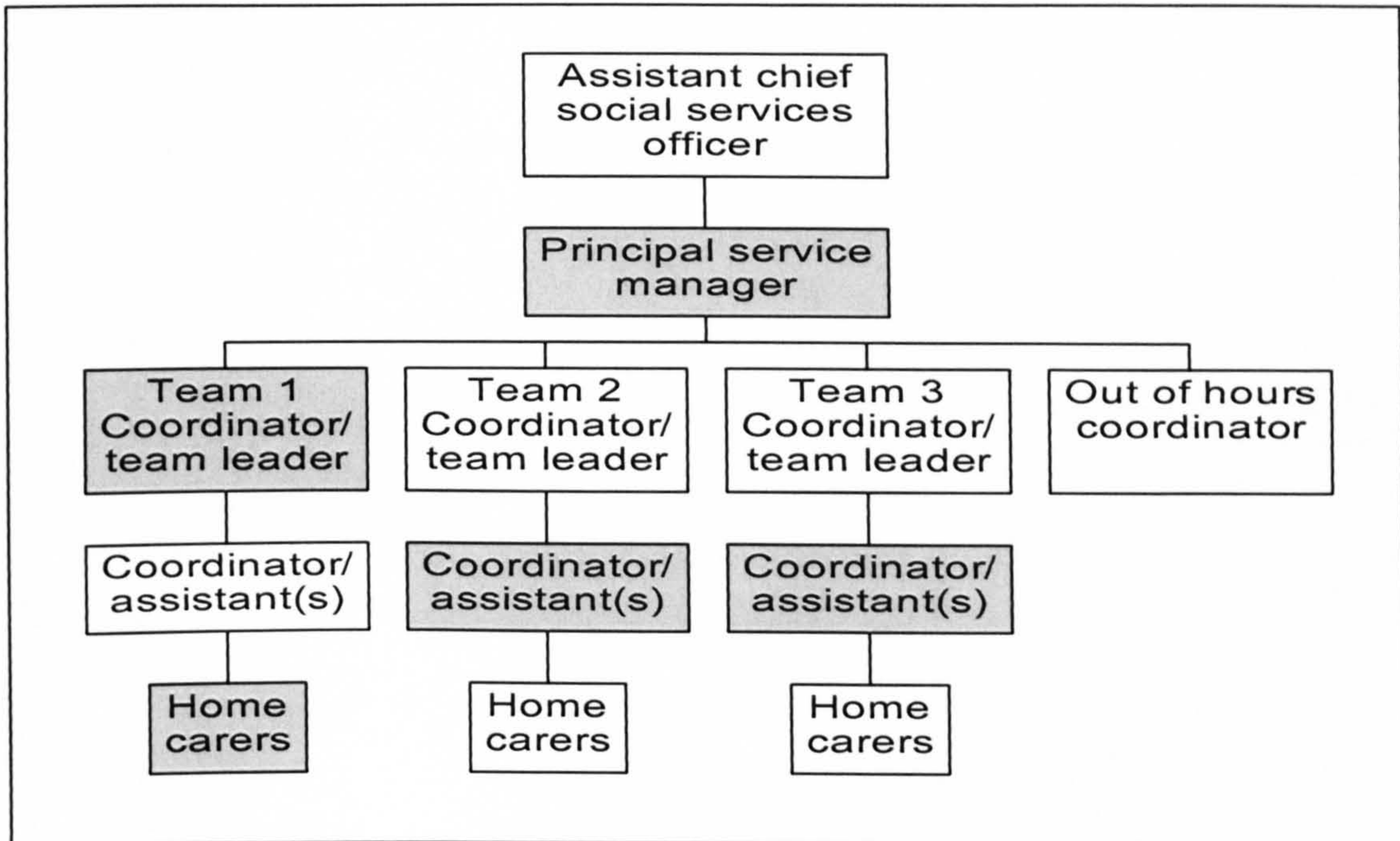


Figure 5.2: Local authority organisation and distribution of respondents (Site A)

There were five mainstream teams in Site B and a mixed/specialist team that included early intervention and fast response home carers who visited people in crisis for a period of up to six weeks. They were administered from different sites (in six local authority residential care homes). Mainstream teams were organised geographically. A list of home care coordinators was requested but the principal service manager suggested the researcher recruit coordinators at a forthcoming meeting for team leaders. Four volunteers were recruited. To ensure representation from both urban and rural areas, each was asked prior to recruitment to describe the areas in which their patients lived. Likewise they were asked whether they worked in a mainstream team or the mixed/specialist team.

At interview coordinators were asked to approach home carers with relevant experience to participate in the research. All agreed to approach a number of home carers. There were approximately 60 home carers in each team. They also explained

that there was at least one assistant coordinators or supervisor in each team. Four carers and two assistant coordinators were recruited using this approach. No further respondents were deemed necessary. In total ten people from four teams were interviewed. Two teams covered predominantly urban areas and two predominantly rural areas. The selection of local authority home care respondents is summarised in figure 5.5. The distribution of respondents is illustrated below (the shaded areas represent people interviewed).

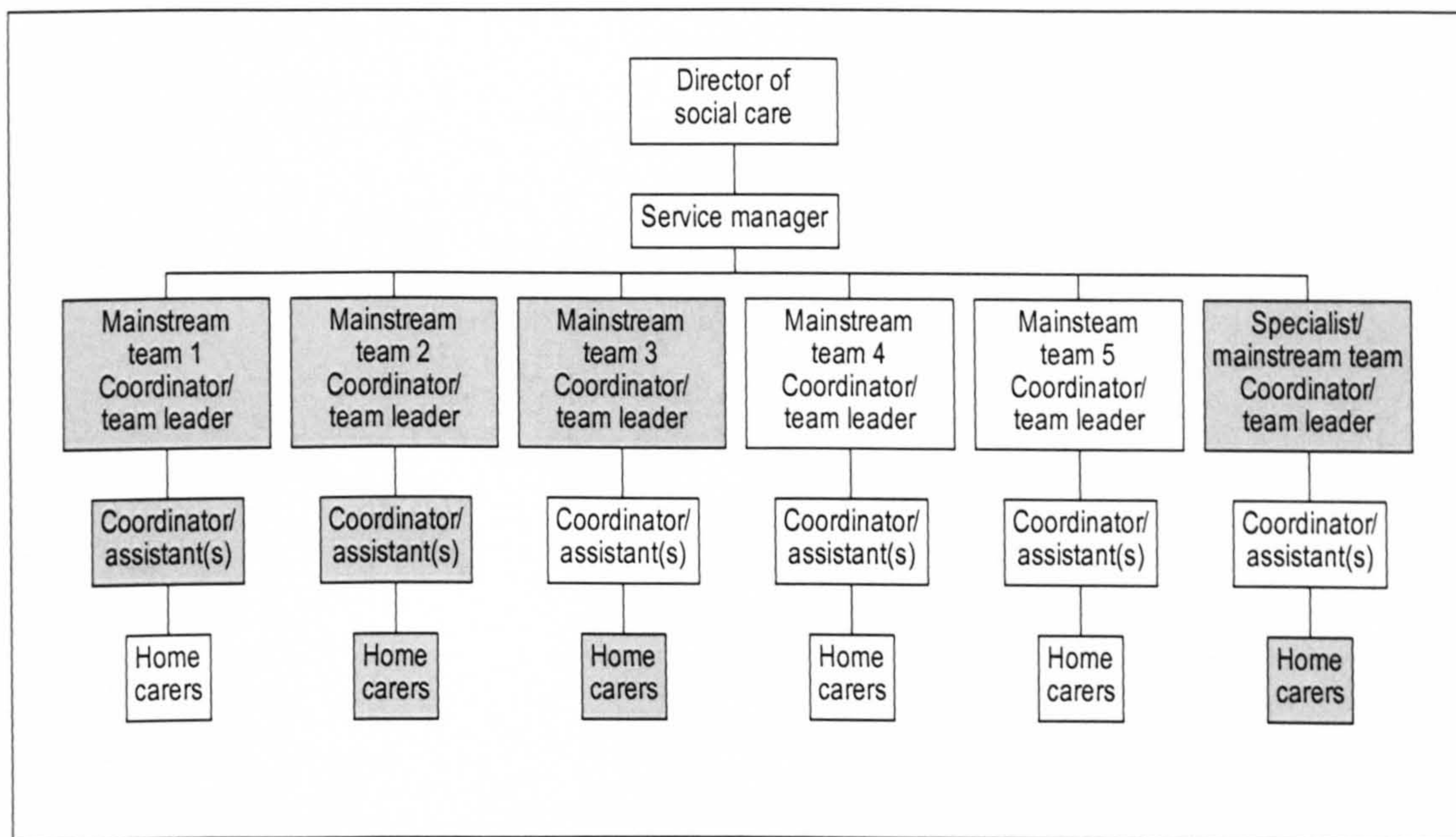


Figure 5.3: Local authority organisation and distribution of respondents (Site B)

Site A Local authority home care respondents		
<p>Organisation of local authority home care provision:</p> <ul style="list-style-type: none"> • Provision organised in three teams • Each team was managed by a home care coordinator/team leader and at least one assistant coordinator • Each team comprised approximately 40 home carers <p>Anticipated number and distribution of respondents:</p> <ul style="list-style-type: none"> • At least one coordinator from each team • At least one home carer from each team 		
	<i>Approach to sampling</i>	<i>Actual sample</i>
Coordinator	A list of coordinators was requested and supplied by the service manager. All coordinators were expected to have sufficient medication related experience to meet the sampling criteria. Alternative coordinators were approached from the list provided until three agreed to participate and were interviewed accordingly.	Interviews were conducted with three coordinators from three teams. The principle service manager was also interviewed.
Home Carer	A list of home carers was not requested because it would not have been possible to identify those home carers who had sufficient medication related experience to meet the sampling criteria. Coordinators were instead asked to identify appropriate home carers and ask them to consider taking part in the study.	Interviews were conducted with two home carers from the same team.

Figure 5.4: Selection of local authority home care respondents in Site A

Site B

Local authority home care respondents

<p>Organisation of local authority home care provision:</p> <ul style="list-style-type: none"> • Mainstream provision was organised in five teams and there was one mixed/specialist team • Each team was managed by a home care coordinator/team leader and at least one assistant home care coordinator • Each team comprised approximately 60 home carers <p>Anticipated number and distribution of respondents:</p> <ul style="list-style-type: none"> • Three coordinators from three mainstream teams covering urban and rural areas • One coordinator from the mixed/specialist team • Three home carers from the mainstream teams covering urban and rural areas • One home carer from the mixed/specialist team 		
	<i>Approach to sampling</i>	<i>Actual sample</i>
Coordinators	<p>A list of coordinators was requested but the service manager suggested the researcher recruit coordinators at the next team leader meeting. All coordinators were expected to have sufficient medication related experience to meet the sampling criteria.</p>	<p>Interviews were conducted with three coordinators from three mainstream teams (two covering predominantly urban areas and one covering predominantly rural areas) and one coordinator from the mixed/specialist team.</p>
Home carers	<p>A list of home carers was not requested because it would not have been possible to identify those home carers who had sufficient medication related experience to meet the sampling criteria. Coordinators were instead asked to identify appropriate home carers and ask them to consider taking part in the study. Coordinators also identified assistant coordinators.</p>	<p>Interviews were conducted with two assistant coordinators from two mainstream teams (both covering predominately urban areas), three home carers from two mainstream teams (one covering a predominately urban area and one a predominantly rural area) and one home carer from the mixed/specialist team</p>

Figure 5.5: Selection of local authority home care respondents in Site B

5.2.3.2. Independent sector respondents

A list of home care organisations was obtained from the local authority Community Care Division in Site A and from the local authority Commissioning, Planning and Policy Department in Site B. Nine approved organisations (and branch managers) were listed in Site A. Approved providers were subject to bi-annual announced and unannounced visits by the social services inspectorate. Eight were private for profit organisations and one was a not for profit organisation. Private for profit organisations were identified by the presence of PLC/Ltd in their name. Twelve approved organisations (and branch managers or business owners/partners) were listed in Site B. All were from the private for profit sector. There were also nine additional providers from whom care could be purchased when approved providers were unable to meet the demand for care. One was a not for profit organisation. Eight providers listed in Site B were situated outside the administrative districts under investigation and excluded from the sampling frame.

Five organisations in Site A were approached in the first instance. It was estimated that four home care organisations would generate eight interviews. Study information sheets and a covering letter were sent to branch managers. In addition to explaining the purpose of the investigation, the methods to be used and the commitment to confidentiality and anonymity, the letter also cited the endorsement of the United Kingdom Home Care Association and British Association of Domiciliary Care Officers. Support for the investigation was sought and granted from both organisations prior to data collection. Follow-up telephone calls were made after two weeks. Two organisations were excluded at follow-up either because they had no local authority patients or they only undertook domestic work. Three organisations agreed to take part. One further organisation was subsequently approached and agreed to participate. The selection of independent sector home care organisations is summarised in figure 5.8.

Each organisation differed in structure. The branch managers in two organisations were also the sole coordinators in those organisations, whilst the branch managers in the other two organisations did not hold a patient caseload. The branch managers

who were sole coordinators were invited to take part in an interview and both agreed to participate. The branch managers who did not hold a patient caseload were asked to nominate a coordinator. One branch manager provided the contact details of two coordinators and the other the contact details of one coordinator. Each was sent study information sheets and a covering letter. Follow-up telephone calls were made after two weeks and all agreed to participate.

Coordinators were asked to approach home carers with relevant experience to participate in the investigation. Two coordinators agreed to approach a number of home carers. Each nominated one home carer. Study information sheets were sent out with a covering letter asking them to contact the researcher at their convenience. Both telephoned and agreed to participate. One said she had a colleague who was interested in taking part. The colleague then contacted the researcher and volunteered to participate.

One coordinator suggested the researcher attend the next meeting for senior home carers. This took place the following month. Four home carers were present. Two had no experience undertaking medication related activities. One of the others agreed to participate. In total nine people from four independent sector organisations were interviewed. The selection of independent sector home care respondents is summarised in figure 5.9. To ensure anonymity the organisations will be known as AA, AB, AC and AD. Three were private for profit organisations (AA, AB and AD) and one was not for profit (AC). The distribution of independent sector home care respondents is illustrated below.

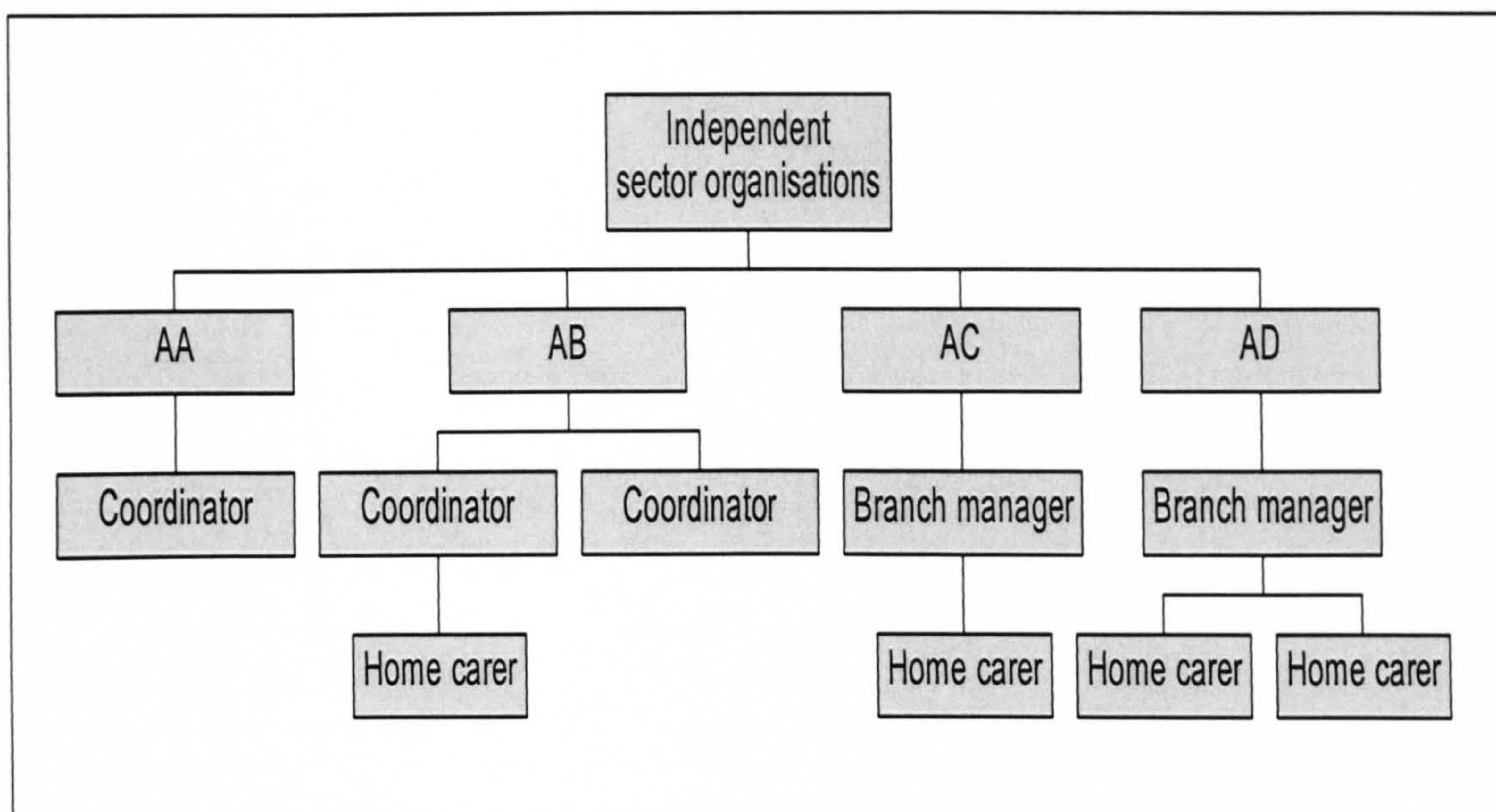


Figure 5.6: Distribution of independent sector home care respondents (Site A)

Five organisations in Site B were approached in the first instance. Organisations were sampled according to whether they were private for profit or not for profit. They were not sampled according to whether they served urban or rural areas. This was because independent sector organisations were not organised geographically. Three agreed to take part and two refused (saying they were too busy). One organisation from the additional provider list was approached subsequently and agreed to participate. The selection of independent sector home care organisations is summarised in figure 5.10.

Branch managers all held patient caseloads and all agreed to take part. Each was asked to approach home carers with relevant experience to participate in the research. One nominated three home carers and all agreed to participate. The researcher was keen to engage home carers from at least one other organisation but attempts to do so were unsuccessful (according to the branch managers no one was interested in taking part). In total seven people from four independent sector organisations were interviewed. The selection of independent sector home care respondents is summarised in figure 5.11. The organisations will be known as BA, BB, BC and BD. Three were private for profit organisations (BA, BB and BC) and one was not for profit (BD). The distribution of independent sector home care respondents is illustrated below.

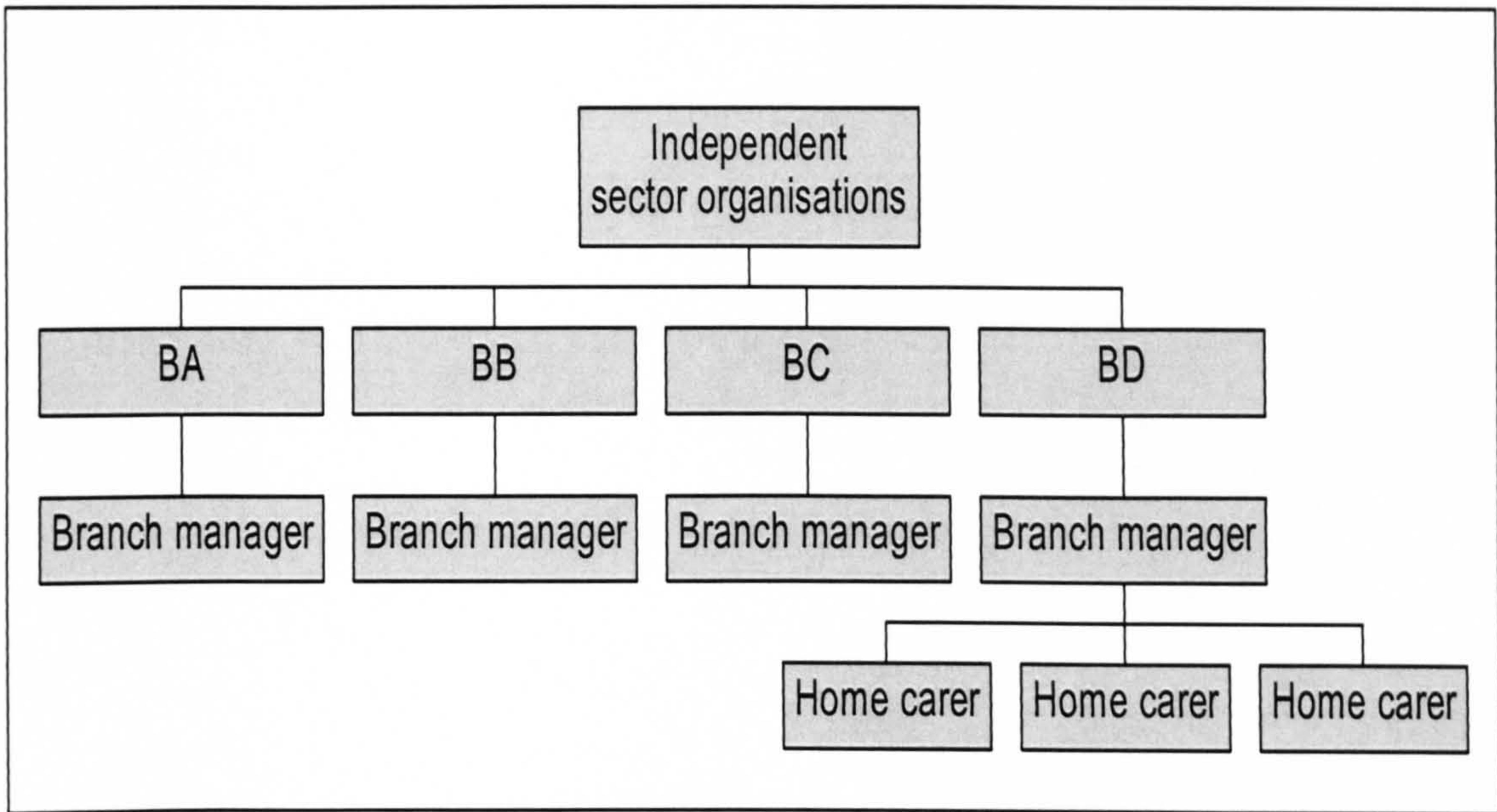


Figure 5.7: Distribution of independent sector home care respondents (Site B)

Site A	
Independent sector home care organisations	
<p>Organisation of independent sector home care:</p> <ul style="list-style-type: none"> • Home care was commissioned from nine approved organisations (including eight private for profit organisations and one not for profit organisation) • These were often branches of larger organisations <p>Anticipated number and distribution of organisations:</p> <ul style="list-style-type: none"> • Three organisations from the private for profit sector • One organisation from the not for profit sector 	
<i>Sampling category</i>	<i>Approach to sampling</i>
Private for profit organisations	A list of approved organisations was requested and supplied by the social services commissioning department. Alternate private for profit organisations were approached from the list until three agreed to participate. The not for profit organisation was approached and agreed to participate.
Not for profit organisations	Three private for profit organisations took part in the study. One not for profit organisation took part in the study.

Figure 5.8: Selection of independent sector home care organisations in Site A

Site A Independent sector home care respondents		
<i>Sampling category</i>	<i>Approach to sampling</i>	<i>Actual sample</i>
<p>Organisation of independent sector home care organisations/branches:</p> <ul style="list-style-type: none"> • Each organisation/branch was managed by a branch manager • Each organisation/branch was organised in teams • Some organisations/branches had contracts with more than one social services department • Teams were organised by social services department area or patient group • Each team was managed by a home care coordinator and in some instances an assistant coordinator • When a contract was held with only one social services department the branch manager was usually the sole home care coordinator <p>Anticipated number and distribution of respondents:</p> <ul style="list-style-type: none"> • The home care coordinator with responsibility for Site A from each of the four participating organisations • One home carer working in Site A from each of the four participating organisations 		
Coordinators	<p>The branch manager was asked to supply the details of the coordinator responsible for personal care provision for older people in Site A. All coordinators were expected to have sufficient medication related experience to meet the sampling criteria.</p> <p>A list of home carers was not requested because it would not have been possible to identify those home carers who had sufficient medication related experience to meet the sampling criteria. The coordinator responsible for Site A was instead asked to identify an appropriate home carer and ask them to consider taking part in the study.</p>	Interviews were conducted with five coordinators from four organisations.
Home carers		Interviews were conducted with four home carers from three organisations.

Figure 5.9: Selection of independent sector home care respondents in Site A

Site B	
Independent sector home care organisations	
<p>Organisation of independent sector home care:</p> <ul style="list-style-type: none"> • Home care was commissioned from twelve approved organisations (all private for profit organisations) and nine additional organisations (including eight private for profit organisations and one not for profit organisation) <p>Anticipated number and distribution of organisations:</p> <ul style="list-style-type: none"> • Three organisations from the private for profit sector • One organisation from the not for profit sector 	
<i>Sampling category</i>	<i>Approach to sampling</i>
Private for profit organisations	A list of approved and additional organisations was requested and supplied by the social services commissioning department. Alternate private for profit organisations were approached from the list until three agreed to participate. The not for profit organisation was approached and agreed to participate.
Not for profit organisations	Three private for profit organisations took part in the study. One not for profit organisation took part in the study.

Figure 5.10: Selection of independent sector home care organisations in Site B

Site B	
Independent sector home care respondents	
<p>Organisation of independent sector home care organisations:</p> <ul style="list-style-type: none"> • Each organisation was managed by a branch manager who was also the sole home care coordinator <p>Anticipated number and distribution of respondents:</p> <ul style="list-style-type: none"> • One home care coordinator from each of the four participating organisations • One home carer from each of the four participating organisations 	
<i>Sampling category</i>	<i>Approach to sampling</i>
Coordinators	<p>The branch manager was asked to participate in the study. All coordinators were expected to have sufficient medication related experience to meet the sampling criteria.</p>
Home carers	<p>A list of home carers was not requested because it would not have been possible to identify those home carers who had sufficient medication related experience to meet the sampling criteria. The coordinator was instead asked to identify an appropriate home carer and ask them to consider taking part in the study.</p>
	<i>Actual sample</i>
	<p>Interviews were conducted with four coordinators from all four organisations.</p>
	<p>Interviews were conducted with three home carers from one organisation.</p>

Figure 5.11: Selection of independent sector home care respondents in Site B

5.2.3.3. District nurse respondents

Permission to approach district nurse respondents was sought by writing to the Directors of Nursing in each study site. In addition to describing the researcher's background and explaining the purpose of the investigation, the methods to be used and the commitment to confidentiality and anonymity, the letter also cited approval from the local research ethics committees (see section 5.3.2). Site A granted permission without requesting any additional information. The community health trust in Site B requested a copy of the research proposal and the primary care trust posed a number of questions in order to determine whether the researcher needed chaperoning and whether the trust was expected to meet any expenses. After permission was granted the researcher was instructed to liaise with the relevant service managers.

District nursing provision in Site A was organised in two localities (north and south). One service manager administered the north locality and another service manager the south locality. An assumption was made that each locality might work in different ways. For that reason a decision was made to sample personnel from both localities.

There were 16 teams (nine in the north locality and seven in the south locality). There was also a night team that covered the entire community health trust. Teams were organised geographically and worked in alignment with an average of three GP practices in specified electoral wards (range 1 - 6). The purpose of this type of organisation was to facilitate closer working relationships with GP practices whilst at the same time minimising travelling distances and maintaining alignment with the community care assessors and care managers in the local community care centres. Teams were paired with at least one other and were administered from the same site (usually a health centre). There were eight sites in total. The service managers provided a list of district nurse team leaders (n = 16).

A decision was made not to recruit district nurses from the night team since it was assumed that they would have limited contact with home carers. Eight team leaders were approached in the first instance. They received study information sheets and a

covering letter. Follow-up telephone calls were made after two weeks. Team leaders were often out of office and difficult to contact. Seven agreed to participate. There was a lapse of approximately one month between first approaches and agreement to participate. The team leader who declined to participate said she was too busy. A virus affecting the human resources computers meant a list of community staff nurses could not be generated but service managers reported approximately five community staff nurses in each team. Team leaders were asked to approach community staff nurses (in particular nurses from those teams and sites from which no team leader had been recruited) and ask them to consider participating in the investigation.

All eight team leaders agreed to approach community staff nurses. The contact details of nine community staff nurses were passed to the researcher who sent out study information sheets and a covering letter. Follow-up telephone calls were made after two weeks. Nurses were often out of office and difficult to contact. When contact was made the researcher informed the nurses that there was no obligation to participate and that no one would be informed of their decision. All nine agreed to participate. The service manager in the south locality also agreed to take part. No further respondents were deemed necessary. In total 17 people were interviewed. The selection of district nursing respondents is summarised in figure 5.14. The distribution across localities, sites and teams is illustrated below.

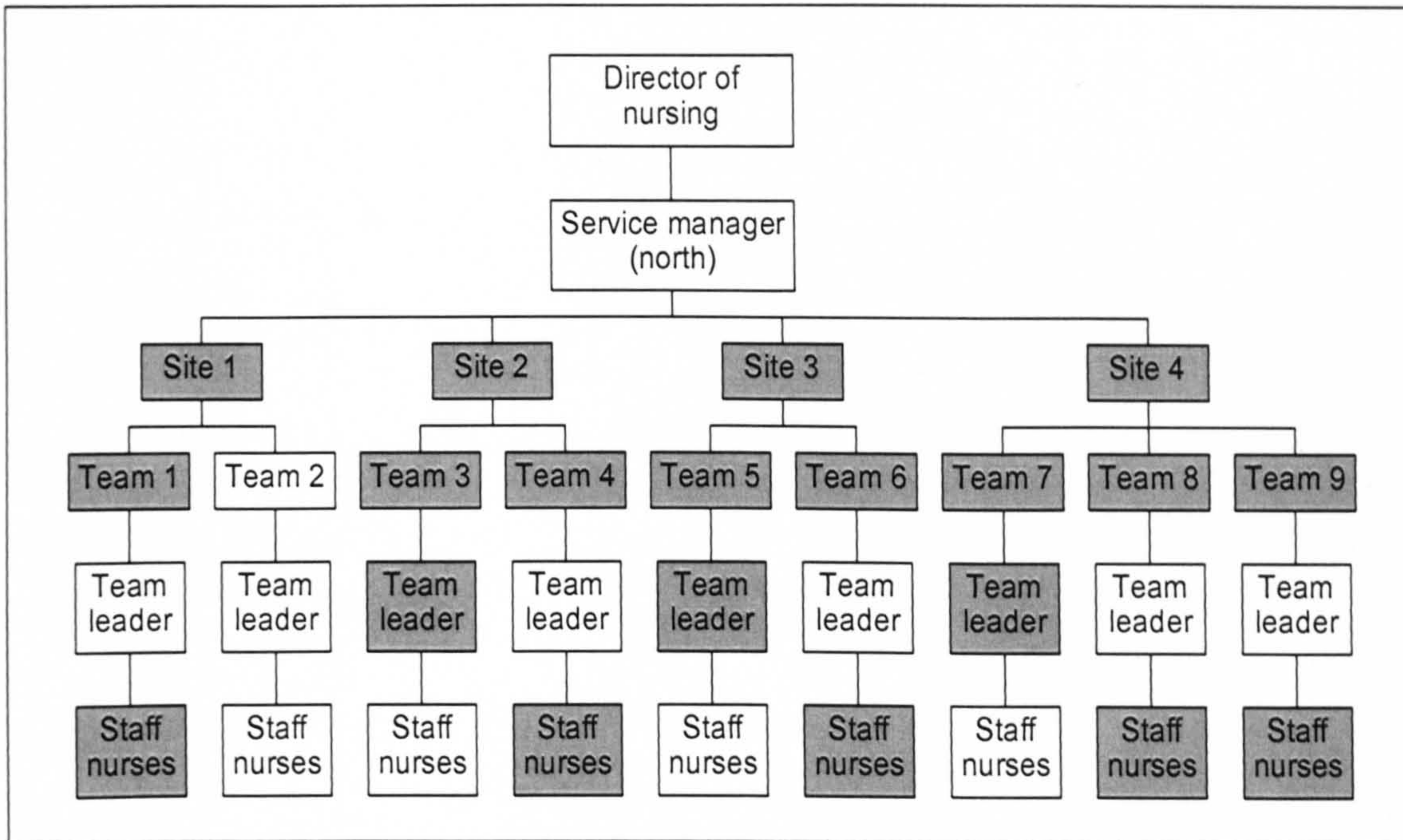


Figure 5.12: District nursing organisation and distribution of respondents (Site A (north locality))

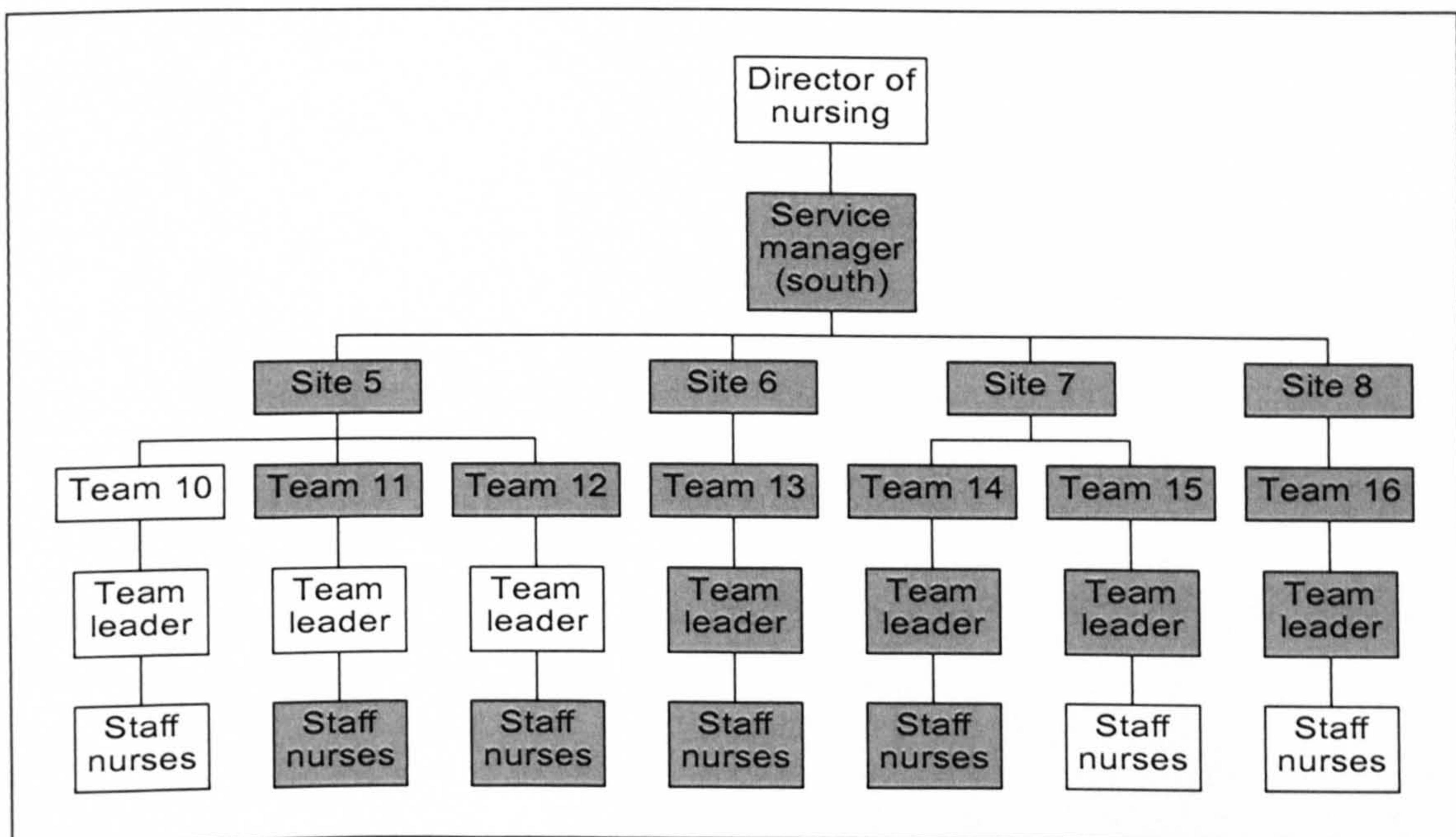


Figure 5.13: District nursing organisation and distribution of respondents (Site A (south locality))

There were 18 district nursing teams in the community health trust in Site B. Each team was attached to (and administered from) a specific GP practice. GP practices did not routinely restrict patient registration to people living in specified electoral wards and there was no limit to the geographical dispersal of patients that attached

district nurses would visit. The service manager provided an inventory of all team leaders (n = 23). The service manager explained that there were approximately two community staff nurses in each team but a list of community staff nurses was not forthcoming. The service manager agreed that eight people could be interviewed in total.

One team leader was approached in the first instance. At interview she was asked to identify from the inventory of team leaders who worked in urban areas, rural areas, and mixed urban/rural areas, and to describe the amount of clinical work undertaken by district nurse team leaders. Her responses guided subsequent sampling decisions. The first decision was to sample respondents from urban areas, rural areas, and mixed urban/rural areas. The second decision was to sample fewer community staff nurses than intended because district nurse team leaders (due to the small size of their teams) had few managerial responsibilities and largely undertook the same sort of work as community staff nurses. Qualified district nurse team leaders made up 25% of total staffing in Site B compared with 18% in Site A.

Seven district nurse team leaders from seven teams were approached in the first instance. They received study information sheets and a covering letter. All agreed to participate but one later cancelled and refused to reschedule. One further team leader was approached and agreed to participate. One community staff nurse was put forward by her team leader and agreed to participate. No further respondents were deemed necessary. In total eight people from seven teams were interviewed. The selection of district nursing respondents is summarised in figure 5.15. Four teams covered predominantly urban areas, one a predominantly rural area, and two, mixed urban/rural areas.

There were seven district nursing teams in the primary care trust in Site B. Each team was attached to (and administered from) a specific GP practice. The service manager agreed that four nurses could be interviewed. Each team comprised approximately two team leaders and one community staff nurse. An assumption was made that all team leaders would visit patients in predominantly rural areas (since the primary care trust covered only district councils) and no attempt was made to find out prior to recruitment where patients lived. A list of team leaders was requested

but the service manager said she would recruit volunteers at the next nursing forum. Four team leaders from four different teams volunteered to take part and their contact details were passed to the researcher who sent out study information sheets and covering letters. Follow up telephone calls were made after two weeks. All four agreed to participate. Only three were interviewed. The fourth was not approached because no new insights had emerged in the preceding interviews. Respondents confirmed at interview that most of their patients lived in rural areas. The selection of district nursing respondents is summarised in figure 5.15.

Site A		
District nursing respondents		
<p>Organisation of district nursing provision:</p> <ul style="list-style-type: none"> • District nursing provision organised in two localities (north and south) • Nine teams in the north locality and seven in the south • Each team managed by a district nurse team leader • Each team comprised approximately five community staff nurses <p>Anticipated number and distribution of respondents:</p> <ul style="list-style-type: none"> • Seven team leaders from a range of different teams in each locality • Seven staff nurses from a range of different teams in each locality 		
	<i>Approach to sampling</i>	<i>Actual sample</i>
Team Leaders	A list of team leaders was requested and supplied by the service managers. All team leaders were expected to have sufficient medication related experience to meet the sampling criteria. Alternate team leaders were approached from the list until seven agreed to participate and were interviewed accordingly.	Interviews were conducted with three team leaders from three teams in the north locality and with four team leaders from four teams in the south locality. The service manager for the south locality was also interviewed.
Staff Nurses	A list of staff nurses was requested but a virus affecting the human resources staff database meant one could not be generated. Team leaders were instead asked to ask a number of nurses to consider taking part in the study. All staff nurses were expected to have sufficient medication related experience to meet the sampling criteria.	Interviews were conducted with five staff nurses from five teams in the north locality and with four staff nurses from four teams in the south locality.

Figure 5.14: Selection of district nursing respondents in Site A

Site B1		
District nursing respondents		
<p>Organisation of district nursing provision:</p> <ul style="list-style-type: none"> • Provision was organised in 18 teams covering urban and rural areas • Each team was managed by a district nurse team leader • Each team consisted of approximately two community staff nurses <p>Anticipated number and distribution of respondents:</p> <ul style="list-style-type: none"> • Five team leaders from a range of teams covering urban and rural areas • Five staff nurses from a range of teams covering urban and rural areas 	<p><i>Approach to sampling</i></p>	<p><i>Actual sample</i></p>
<p>Team Leaders</p>	<p>A list of team leaders was requested and supplied by the service manager. The service manager agreed that eight nurses could be interviewed. All team leaders were expected to have sufficient medication related experience to meet the sampling criteria. The first team leader on the list was approached and agreed to participate. Prior to interview she explained that team leaders and staff nurses undertook the same volume of clinical work. This meant a decision was made to interview seven team leaders and only one staff nurse. She also identified teams covering urban areas and teams covering rural areas. The list of team leaders was subsequently arranged geographically. Alternate team leaders were approached from the rearranged list until seven agreed and were interviewed accordingly.</p>	<p>Interviews were conducted with seven team leaders from seven different teams (four covering predominantly rural areas, and two covering mixed urban/rural areas) and one community staff nurse from a team covering a predominantly urban area.</p>
Site B2		
District nursing respondents		
<p>Organisation of district nursing provision:</p> <ul style="list-style-type: none"> • Provision was organised in seven teams covering predominately rural areas • Each team was managed by approximately two district nurse team leaders • Each team consisted of approximately one community staff nurse <p>Anticipated number and distribution of respondents:</p> <ul style="list-style-type: none"> • Two team leaders from two different teams • Two staff nurses from two different teams 	<p><i>Approach to sampling</i></p>	<p><i>Actual sample</i></p>
<p>Team Leaders</p>	<p>A list of team leaders was requested but the service manager said she would recruit team leaders on my behalf at the next district nursing forum. There was an expectation that team leaders and staff nurses would undertake the same volume of clinical work and a decision was made not to sample staff nurses.</p>	<p>Interviews were conducted with three team leaders from three different teams.</p>

Figure 5.15: Selection of district nursing respondents in Site B

5.2.3.4. Additional respondents

The potential contribution of additional categories of respondents was reviewed as the study progressed. For example, a number of home carers described in interviews how they often undertook medication related activities for patients with dementia and/or depression who received input from community psychiatric nurses as well as district nurses. To explore in more detail some of the safety issues introduced by these respondents (especially in relation to patient factors) a decision was made to interview a community psychiatric nurse. There were three multidisciplinary old age psychiatry teams in Site A with two nurses in each. The first nurse approached agreed to participate and was interviewed accordingly.

Another category of respondent introduced was community care assessors. A number of district nurses in Site B described the difficulties they believed community care assessors experienced arranging packages of care for patients living in remote or outlying locations. At the same time a number of independent sector coordinators described the difficulties they experienced when they were expected to undertake activities not listed on the care plan. To explore commissioning difficulties and the way that care plans were formulated in more detail, a decision was made to interview a community care assessor. There were two care management teams in Site B. The principal care manager was approached and agreed to advertise the study at the next care management meeting. Two managers from two different teams volunteered to participate and were interviewed accordingly.

A group interview was also held with members of the early intervention team in Site B. The early intervention team was a joint initiative between the general hospital, the local authority, the community health trust and primary care trust. It worked in conjunction with the specialist home care team and combined the skills of district nurses, occupational therapists, physiotherapists and housing professionals to prevent avoidable admission to hospital and residential care. The purpose of the interview was to explore whether integrated provision had any influence on patient safety when specialist home carers undertook medication related activities. None of these

additional interviews provided significant new insights and so will not be reported further.

5.2.4. Designing the interview schedule

An interview guide was devised for each of the categories of respondents (home carers, home care coordinators and district nurses). The guide was not a tightly delineated set of questions to be asked verbatim as written. Rather it was a list of things to be sure to cover when talking to the person being interviewed. Questions focused on three topic areas including roles and responsibilities in medication management, accident opportunities and adverse events, and working relationships with health and social care colleagues. The questions are listed below.

Questions to home carers		Questions to home care managers		Questions to district nurses	
Q1HC	What help do you give older people with medication?	Q1CC	What medication related help do you ask home carers to give older people?	Q1DN	What medication related help do you ask home carers to give older people?
Q2HC	What helps you get it right when you're helping older people with medication?	Q2CC	What do you think helps home carers get it right when they are helping older people with medication?	Q2DN	What do you think helps home carers get it right when they are helping older people with medication?
Q3HC	What problems do you experience when trying to help older people with medication?	Q3CC	What problems do you think home carers experience when they are asked to help older people with medication?	Q3DN	What problems do you think home carers experience when they are asked to help older people with medication?
Q4HC	What worries or concerns do you have when trying to help older people with medication?	Q4CC	What problems have you experienced when home carers have been asked to help older people with medication?	Q4DN	What problems have you experienced when home carers have been asked to help older people with medication?
Q5HC	What kind of mistakes can get made when home carers are asked to help older people with medication?	Q5CC	What worries or concerns do you think home carers have when trying to help older people with medication?	Q5DN	What worries or concerns do you think home carers have when trying to help older people with medication?
Q6HC	What contact do you have with district nurses and other members of the healthcare team?	Q6CC	What worries or concerns do you have when home carers are trying to help older people with medication?	Q6DN	What worries or concerns do you have when home carers are asked to help older people with medication?
Q7HC	How would you describe your relationship with district nurses and other members of the healthcare team?	Q7CC	What kind of mistakes can get made when home carers are asked to help older people with medication?	Q7DN	What kind of mistakes can get made when home carers are asked to help older people with medication?
		Q8CC	What contact do home carers have with district nurses and other members of the healthcare team?	Q8DN	What contact do you have with home carers and home care coordinators?
		Q9CC	What contact do you have with district nurses and other members of the healthcare team?		
		Q10CC	How would you describe the relationship between home carers and district nurses and other members of the healthcare team?	Q9DN	How would you describe your relationship with home carers and home care coordinators?
		Q11CC	How would you describe your relationship with district nurses and other members of the healthcare team?		

Figure 5.16: Interview guide

The opening question explored what medication related activities were transferred from district nurses to home carers. It was logical that this area be addressed first because it defined the focus of the study. At the same time it was considered quite a general and relatively easy question to answer. The intention was to build rapport with respondents before moving on to more sensitive topics. Questions were framed so respondents would not feel threatened or intimidated. For example, they were never asked whether they themselves had made a medication error. The questions had a general orientation but follow-up questions steered respondents to describe particular examples from their everyday practice. Questions that steered home care respondents are listed below.

Q1HC	Can you tell me about one of the older people you are helping?
Q3HC	Can you tell me about how one of these problems affected the help you gave an older person?
Q4HC	Can you tell me about an incident that has worried or concerned you?
Q7HC	Can you tell me about an occasion when you worked especially well with district nurses or other members of the health care team?

Box 5.1: Questions steering home care respondents to describe specific incidents

The interview guides were piloted in face-to-face interviews with one local authority home care coordinator, one local authority home carer, one independent sector coordinator, one independent sector home carer, one district nurse team leader and two community staff nurses. Respondents were drawn from the London borough (and its one half of a community health trust) neighbouring Site A. The pilot interviews confirmed that the questions were open, neutral and unambiguous. They also revealed that some respondents were sometimes unable to bring to mind any medication related difficulties. To promote discussion on this topic area a vignette technique was adopted. Vignettes are concrete examples of people and their behaviours which respondents can offer comment or opinion (Hazel 1995). Hesitant respondents were presented with the following scenario (home care respondents received a version which omitted the use of medical terminology):

Mrs Brown constantly had swollen legs and despite being on quite a high dose of diuretics she kept being admitted to hospital with heart failure. At home, she had twice-daily home carers who prompted her medication from a medication compliance device. The district nurses did a fortnightly monitoring visit. During the last hospital admission, a neighbour reported having found lots of tablets down the side of Mrs Brown's chair.

Box 5.2: Vignette presented to hesitant respondents

It was anticipated that the scenario would help focus respondents and jog them to recall difficulties relating to the transfer of medication related activities from district nurses to home carers. In practice it was used only twice.

5.2.5. Conducting the interviews

Interviews were conducted at times convenient for respondents. This was usually in the afternoon for home care personnel and at lunchtime for nurses. In the spirit of reciprocity a sandwich was offered to those people who were interviewed at lunchtime. Many nurses in Site A cancelled their appointments at short notice (but all agreed to reschedule). The most common reason was an important meeting to attend. Either unforeseen patient related problems or transport difficulties also meant they were nearly always 20 minutes late. There were no notable scheduling difficulties with nurses in Site B or home care respondents in either study site.

Interviews with local authority personnel were conducted in their administrative centres. Nurses were interviewed in the health centres in which they were based. Quiet interview rooms were booked in advance. A number of district nurse team leaders chose to be interviewed at their desks but none were conducted in the presence of another person and none were interrupted. Interviews with independent sector home care personnel were conducted in branch offices. Two had no access to a quiet interview room. Respondents declined the offer of an alternative venue. As a result two interviews with branch managers were conducted in open plan offices in the presence of an office assistant. It is important to consider how the presence of another person might affect what the respondent reveals. On both occasions the office assistants were attending to other business (such as answering telephone calls and typing) and did not appear to be listening to the interview.

The researcher described her background and interest in the area under investigation before the interview commenced. The purpose and nature of the study was also described and respondents were assured they would remain anonymous and their responses would be treated in the strictest confidence. Respondents were told there were no right or wrong answers. The tentative and exploratory nature of open-ended interviews means that respondents cannot always be fully pre-informed about the direction of the discussion. Respondents were informed that if they did not like the way the discussion was going they could refuse to answer any questions and were free to leave at any time. Answers to questions posed by the respondents themselves were deferred until the end of the interview. No one refused to answer any questions and no one left early.

Respondents were asked to consent to the interviews being audio-recorded so the flow of discussions was not broken up by note taking. Three home care respondents refused. Two were local authority personnel in Site A. One said the massive departmental reorganisation and subsequent redundancies meant she had to be wary. When people refused the researcher made bullet point notes during the interview and afterwards used the recording equipment to recount the interview in as much detail as possible. When respondents consented to the interview being audio-recorded, the equipment was placed as unobtrusively as possible. A number of respondents provided relevant information after the equipment had been turned off. Written reconstructions of subsequent discussions were made as soon as possible whilst recollections were still reliable. The tapes were transcribed and subsequently deleted. One district nurse team leader requested a copy of the transcription and this was provided.

Each respondent had unique experiences and stories to tell. The interview schedule guided rather than controlled the interview. Questions were asked in no particular order and their wording reflected the vocabulary used by individual respondents. The aim was to get people to open up and express themselves at their own pace and in their own terms.

Interviews with home care personnel lasted between 20 – 75 minutes in Site A and between 20 – 55 minutes in Site B. One local authority coordinator and two

independent sector coordinators said that they were very busy and restricted the interview to 20 minutes. Interviews with district nurses never appeared hurried and lasted between 25 – 60 minutes in Site A and between 20 – 85 minutes in Site B. Field notes were made after each interview. These described the general atmosphere of the interview and the ease or difficulty of exploring particular subjects. The researcher also considered the extent to which her approach had been flexible in areas such as varying the order of questions, following up leads and clearing up inconsistencies in answers. A selection of interview transcripts was given to the research supervisor who confirmed the emphasis on areas of inquiry had varied between interviews. The process of reflection and self evaluation continued in regular supervision sessions.

5.2.6. Gathering descriptive data

5.2.6.1. Describing the respondents

Additional information was sought in order to describe respondents' employment history, relevant experience, accreditation and training. The information was intended to provide the background to the investigation; demonstrate variation that might exist between personnel in each study site; provide the context within which system defences, hazards and domains of risk that were location specific might be explained; and enable some sort of assessment as to whether the sample was typical or not of the wider workforce by comparing them against a national profile of home care and district nursing personnel. Self-administered questionnaires were developed for each of the categories of respondents (appendices 3 – 6) with the exception of service managers and additional respondents.

The researcher planned to post the questionnaires to respondents and ask that they be completed and returned at interview. The pilot interviews suggested this plan would not work, since two out of seven respondents failed to return their questionnaires at interview. Subsequently a decision was made to give respondents who did not return their questionnaires at interview another copy together with a stamped addressed envelope. Ninety-four percent of questionnaires were returned. The proportion of questionnaires returned by each category of respondent is described below (the

number in brackets indicates the number of respondents in each category interviewed).

Questionnaires returned			
	Site A	Site B	Total
Local authority sector			
Home care coordinators	2 (3)	6 (6)	8 (9)
Home carers	2 (2)	4 (4)	6 (6)
Independent sector			
Home care coordinators	4 (5)	4 (4)	8 (9)
Home carers	4 (4)	3 (3)	7 (7)
District nurses			
District nurse team	6 (7)	10 (10)	16 (17)
leaders	9 (9)	1 (1)	10 (10)
Community staff nurses			
Total	27 (30)	28 (28)	55 (58)

Table 5.4: Questionnaires returned by home care and district nursing respondents

5.2.6.2. Describing the study sites and their services

Having chosen the study sites, additional information was sought in order to describe their social and demographic characteristics. Information was also sought on staff vacancies, the proportion of patients receiving visits from district nursing and home care services, the substance of home care medication policies, and the recorded occurrence of adverse medication related events. The information was intended to provide the background to the investigation and the context within which safety barriers, hazards and domains of risk that were location specific might be explained. Social and demographic data were gathered from census material. Data describing vacancy rates and the proportion of patients receiving visits from both home carers and district nurses were gathered from self-administered questionnaires (only home care coordinators and district nurse team leaders were asked to provide this information).

In order to list and compare what activities each organisation authorised home carers to undertake, local authority and independent sector providers were asked to supply copies of their medication policies. The request was made in writing to service managers and branch managers. Both local authority providers and six out of eight

independent sector providers supplied medication policies. AC did not have a medication policy and BC failed to provide a copy. The substance of these policies is examined in section 6.3.1.

In order to measure and compare the volume of medication related incidents and complaints, attempts were made to search incident reports and complaints records held by the social services departments and community health trusts in each study site. The intention was to identify incidents relating to a five-year period (January 1995 to January 2000). Agreement to access records held by social services departments was sought from the Assistant Chief Social Services Officer in Site A and the Director of Social Care in Site B. Both refused permission, citing concerns relating to the Data Protection Act 1998 (Conditions for Processing Sensitive Data (Schedule 3)). Blinded records were requested but neither was able to release an information officer to undertake such a search. Permission to access records held by community health trusts was sought from the Director of Nursing in Site A and the Medical Director in Site B. They too expressed concern about patient identifiable information becoming available but agreed to provide blinded records. An information officer within each trust conducted the searches but no relevant incidents or complaints were identified. The primary care trust in Site B did not have an incident database.

5.3. *Ethical practice*

This section explains the steps that were taken to treat respondents with care, sensitivity and respect. It describes the efforts that were made to ensure respondents were not harmed as a result of their involvement in the study. It also describes how ethical approval was obtained and discusses issues surrounding the remuneration of home care respondents.

5.3.1. Ethical principles

Key ethical principles governing research are that respondents should give their informed consent to participate and to data being used in the ways that the researcher described and that they should not be harmed as a result of their involvement.

Informed consent was obtained from all respondents. Efforts were made to ensure they had sufficient information and sufficient time to weigh up the benefits and risks

of participation. For example, they were given study information at least seven days prior to interview and everyone had the opportunity to ask questions at recruitment and again immediately before the interview commenced.

Certain benefits and risks may be incurred when an individual participates in a research study. Potential benefits include a sense of purpose, empowerment, healing and providing a voice for the disenfranchised (Hutchinson et al 1994). The potential risks of participating include psychological and emotional distress, which results from self-disclosure, fear of interacting with strangers, fear of repercussions, loss of privacy, and anger at the type of questions being asked (Polit and Hunglar 1995). These risks were minimised by careful phrasing of the interview questions (see section 5.2.4) and ensuring the confidentiality and anonymity of respondents, organisations and study sites. This included the secure storage of data and the use of identity tags and pseudonyms.

Although every attempt was made to ensure confidentiality, it was acknowledged that in certain circumstances the requirement to report might over-ride any confidentiality agreement between the researcher and the respondent. A decision was made that should an issue of serious concern arise during an interview (such as an admission of abuse), the respondent would be reminded that confidentiality was assured only to the extent allowed by law and that the researcher had a professional responsibility under the United Kingdom Central Council for Nursing, Midwifery and Health Visiting (UKCC) to act in such a manner as to promote and safeguard the interest and well-being of patients (UCC 1992). Consequently the audiotape would be turned off and the respondent told of the researcher's responsibility to report their concerns to an appropriate person. In the event no such circumstances arose.

5.3.2. Ethical approval

Approval to conduct the research was obtained from the community health trust ethical committees in both study sites. Local authority research ethical committees existed in neither study site. The Association of Directors of Social Services (ADSS) Research Group require that projects involving four or more social service departments be submitted to ensure they are worthwhile and are carried out to an

acceptable standard (ADSS 1996). Since the research involved only two social services departments their approval was not required. Data collection was undertaken prior to the requirement that no health or social care research commence without obtaining a favourable opinion on its ethical principles (DH 2004b).

5.3.3. Payment of expenses to respondents

It was assumed that interviews with local authority and district nursing personnel would be conducted during their normal working hours and that interviews with independent sector home carers (who are usually only paid for direct patient care) would be conducted during their leisure time. Independent sector home carers were offered expenses in the form of a voucher. The amount was calculated as the sum of approximately one hour's pay and a return bus fare to the interview location. Respondents were made aware of the availability of expenses before they agreed to take part. The voucher was handed to them in a sealed envelope on their arrival at the interview. Concerns have been raised that offering research respondents payment undermines the principle of voluntary consent but the voucher in this study was intended as reimbursement for time and travel not as a financial incentive to participation. Respondents were informed that no conditions were attached to their accepting the voucher and they were free to terminate the interview at any time.

5.4. *Data analysis*

In total 64 interviews were undertaken. These generated a considerable amount of raw data in the form of full interview transcripts and written accounts. Approaches to qualitative data analysis include grounded theory (Glaser and Strauss 1967) and the framework approach (Ritchie and Spencer 1994).

Grounded theory is both a strategy for doing research and a particular style of analysing data from that research. One of the major premises of this approach is that data is collected as free as possible from predetermined theory, either in the form of assumptions held by the researcher or in the form of a conceptual framework to guide the research (Thomas 2006). Grounded theory was not suitable in the present study because the researcher held a number of a priori assumptions relating to the factors that might predispose to adverse events (see box 2.7 (section 2.5) and box 3.1

(section 3.5)) and the factors distinguishing domiciliary care settings from hospital settings (see box 4.7 (section 4.6)).

Data were sifted and interpreted using the framework approach to qualitative data analysis. This approach is particularly well suited to qualitative research where there are a priori assumptions since it allows the analytical process to be informed by issues designated in advance as well as emergent concepts (Pope et al 2000; Lacey and Luff 2001). Key features of the framework approach are listed below.

- **Grounded or generative:** it is heavily based in, and driven by, the original accounts and observations of the people it is about
- **Dynamic:** it is open to change, addition and amendment throughout the analytic process
- **Systematic:** it allows methodical treatment of all similar units of analysis
- **Comprehensive:** it allows a full, and not partial or selective, review of the material collected
- **Enables easy retrieval:** it allows access to, and retrieval of the original textual material
- **Allows between and within-case analysis:** it enables comparisons between and association within, cases to be made
- **Accessible to others:** the analytic process, and the interpretations derived from it, can be viewed and judged by people other than the primary analyst

Box 5.3: Key features of the framework approach (Ritchie and Spencer 1994)

The transcription process was followed by five stages of analysis. The first stage involved familiarisation with the transcribed data and the identification of emerging issues in relation to what medication related activities were transferred from district nursing to home care services and the range of factors that predisposed older people to adverse events when these activities were undertaken by home carers.

Familiarisation involved getting immersed in the data. The volume of material meant it was not possible to review everything at this first stage and a selection of interview transcripts and material was instead selected to represent a range of respondents. Transcripts were read and reread and research notes were taken describing recurrent themes and issues that emerged as important to the respondents themselves.

- Familiarisation
- Identification of a thematic framework
- Indexing
- Charting
- Mapping and interpretation

Box 5.4: Five stages of framework analysis (Ritchie and Spencer 1994)

The second stage involved developing an initial coding framework from the recurrent themes and issues hitherto identified. An index of themes and sub themes was drawn up. A common coding framework was applied to a selection of interview data from all categories of respondents in both study sites. The third stage involved the systematic application of the coding framework to all the remaining data. Transcripts were read and coding references recorded on the margins of each transcript. .

The initial coding framework underwent modification and refinement as it became clear that many of the initial codes relating to the major domains of risk in health and social care for older people living at home were interchangeable with those identified in the FFICP and could be relabelled to match the latter (at the same time some of the sub themes were not interchangeable with those identified in the FFICP and remained coded as before). The approach to coding adopted was not mutually exclusive and allowed a single unit of data to be coded in more than one category. The coding framework and a selection of interview transcripts were given to the research supervisor who invited the researcher to defend the way she had indexed units of data and encouraged her to consider alternative interpretations.

A series of thematic charts were then devised. Two charts referred to medication related activities transferred from district nursing to home care services (one pertinent to each study site) and two to the medication related activities undertaken by district nurses when patients were in receipt of both district nursing and home care services. Fourteen charts referred to potential system defences (one pertinent to each major systems defence and each study site) and 14 to potential hazards. The thematic charts are listed below.

Site A		Site B	
1A	Institutional related system defences	1B	Institutional related system defences
2A	Organisation and management related system defences	2B	Organisation and management related system defences
3A	Work environment related system defences	3B	Work environment related system defences
4A	Team related system defences	4B	Team related system defences
5A	Staff related system defences	5B	Staff related system defences
6A	Task related system defences	6B	Task related system defences
7A	Patient related system defences	7B	Patient related system defences
8A	Institutional related hazards	8B	Institutional related hazards
9A	Organisation and management related hazards	9B	Organisation and management related hazards
10A	Work environment related hazards	10B	Work environment related hazards
11A	Team related hazards	11B	Team related hazards
12A	Staff related hazards	12B	Staff related hazards
13A	Task related hazards	13B	Task related hazards
14A	Patient related hazards	14B	Patient related hazards
15A	Medication related activities transferred from district nursing to home care services	15B	Medication related activities transferred from district nursing to home care services
16A	Medication related activities undertaken by district nurses when patients were in receipt of both district nursing and home care services	16B	Medication related activities undertaken by district nurses when patients were in receipt of both district nursing and home care services

Table 5.5: Thematic charts

Charts were stored in spreadsheet format using Microsoft Excel. The columns in each chart represented the sub themes and the rows the individual respondents. The indexed data from each transcript were summarised and entered into the appropriate cell. The page of the transcript was noted to aid easy retrieval of the original data. The charts were ordered so that local authority home care personnel were listed first, independent sector personnel second and district nursing personnel third. An extract illustrating the kind of entries recorded in one of the thematic charts is presented below.

Chart 12 B		
Patient related hazards (Site B)		
Respondent	Theme: condition factors	Theme: treatment factors
HMN.2	Sub theme: cognitive problems <i>A confused patient consumed three days worth of medication from the medication compliance device (4)</i> Sub theme: depression <i>A patient intentionally overdosed because he was depressed (7)</i>	Sub theme: treatment effectiveness <i>A patient with Parkinson's overdosed on her medication because her legs were stiff (3)</i>

Figure 5.17: Example of thematic chart entries

When the indexed data from each transcript had been summarised and entered into the thematic charts, the units of data contained in each cell were reviewed in order to confirm whether they actually belonged in that category and/or chart or whether they belonged in a different category and/or chart. A selection of thematic charts was also given to the research supervisor who invited the researcher to defend the way she had charted units of data and encouraged her to consider alternative interpretations.

The final stage involved attaching meaning and significance to the dataset as a whole. The level of interpretation undertaken was guided by the original research objectives and by the themes and associations emerging from the data. These are listed below.

Medication related issues and objectives
<ul style="list-style-type: none"> • To analyse the variety of medication related activities undertaken by district nurses and home carers • To consider what factors determined home carer involvement in medication related activities • To examine whether any variation existed in the activities undertaken by respondents in the two different study sites and home care sectors
Patient safety related issues and objectives
<ul style="list-style-type: none"> • To analyse the range of factors that respondents identified as predisposing to adverse events when responsibility for medication related activities was transferred from district nursing to home care services • To identify any factors that were perceived as enhancing patient safety • To examine how far the factors identified were generic to both study sites and both home care sectors.

Box 5.5: Issues and objectives guiding the interpretation of the dataset

The charts were grouped according to whether they were medication related or patient safety related. Those that were patient safety related were then grouped according to the seven major factor types listed in the Framework of Factors Influencing Clinical Practice. These are summarised below.

Institutional context group			
1A	Institutional related system defences	1B	Institutional related system defences
8A	Institutional related hazards	8B	Institutional related hazards
Organisation and management factors group			
2A	Organisation and management related system defences	2B	Organisation and management related system defences
9A	Organisation and management related hazards	9B	Organisation and management related hazards
Work environment factors group			
3A	Work environment related system defences	3B	Work environment related system defences
10A	Work environment related hazards	10B	Work environment related hazards
Team factors group			
4A	Team related system defences	4B	Team related system defences
11A	Team related hazards	11B	Team related hazards
Staff factors group			
5A	Staff related system defences	5B	Staff related system defences
12A	Staff related hazards	12B	Staff related hazards
Task factors group			
6A	Task related system defences	6B	Task related system defences
13A	Task related hazards	13B	Task related hazards
Patient factors group			
7A	Patient related system defences	7B	Patient related system defences
14A	Patient related hazards	14B	Patient related hazards

Table 5.6: Thematic chart groupings

Groups were analysed sequentially. Matching each system defences chart with the relevant hazards chart (for example, chart 1A and 8A) facilitated analysis of the factors that enhanced patient safety as well as the factors that jeopardised patient safety. Matching each study site chart (for example, matching chart 1A and 1B) allowed perceptions, accounts and experiences to be compared and contrasted across respondent categories and across study sites.

Visual representations were sketched to aid the development of interpretations (see appendix 7). Having identified the key dimensions affecting patient safety, a framework was developed that specified the range of factors that predisposed older people living at home to adverse events when medication related activities are transferred from district nursing to home care services.

5.5. Critique of methods

The methods used in the present study had a number of weaknesses. Potential sources of sampling bias included gatekeeper bias and refusals to participate. Gatekeeper bias was a potential problem for the reason that coordinators had complete control over access to home carer respondents. This was largely unavoidable because not all home carers were expected to meet the sampling criteria. Coordinators were asked to identify home carers according to whether they had medication related experience with one or more patient on a regular basis. However they could have identified home carers according to their own additional criteria and excluded those whose care might fall short of acceptable standards, and who might express dissatisfaction with their terms and conditions of employment.

Practical reality also meant that district nurses controlled access to community staff nurses in Site A. This was because there was no list of community staff nurses. The service manager also controlled access to district nurses in the primary care trust in Site B. This was because she insisted on recruiting district nurses herself rather than supplying the researcher with a list of district nurses.

Refusals to participate was a potential problem for the reason that only two local authority home carers were recruited in Site A and no private for profit home carers were recruited in Site B. Recruitment of local authority home carers in Site A was adversely effected by the reorganisation of the department. Data collection was postponed for ten weeks but interest in the study appeared to have waned and attempts to recruit additional respondents were unsuccessful. The study demonstrated the problems recruiting respondents during periods of job insecurity. The impact this had on the data collected was difficult to assess.

The reason why no private for profit home carers were recruited in Site B was unclear. Coordinators said no one was interested in taking part. On reflection the approach to recruitment was probably inadequate. Attempts could instead have been made to attend and publicise the study at monthly home care team meetings. Failure to recruit private for profit home carers in Site B meant the data collected might not have reflected the extent to which commercial pressure influenced patient safety.

It would also have been interesting to interview not only district nursing and home care personnel but also general practitioners and community pharmacists (see section 5.1.2). Time limitations prevented the researcher approaching other categories of respondents. However it is important not to minimise the findings by focusing on what was not learnt because of who was not recruited. In the absence of their perspectives, it might equally be postulated that they might not have altered the picture at all.

5.6. *Reflexivity and reducing researcher bias*

In qualitative research the researcher is the research instrument and the researcher influences data collection and data analysis. In the present study, the researcher was concerned that her nursing background (and the history of poor communication and collaboration between district nursing and home care services (see section 2.4.2)) might affect her relationship with home care respondents. For example, home carers might not have wanted to talk honestly about suboptimal relationships with district nurses. This might have produced biased responses.

A decision had to be made about how the researcher would present herself to respondents as this would influence how successful and credible the study would turn out to be. One option was to attempt to deny or disguise her nursing background. This option was rejected because it was likely to be unsuccessful (practitioner knowledge is often so ingrained that displays of knowledge which will betray the identity cannot be controlled (Reed 1995)) and also unethical since it would undermine the principal of informed consent. The researcher therefore decided to disclose her nursing background in the study information sheet and to focus on earning the trust of respondents.

Lincoln and Guba (1985) suggest that trust is earned by assuring respondents confidences will not be used against them, that pledges of anonymity will be honoured and that hidden agendas are not being served. The researcher made appropriate assurances. For example, to demonstrate the absence of hidden agendas she described how the study was being undertaken as part of a student project and the study information sheets (appendix 2) were printed on university headed paper

(which was expected to be looked upon as a neutral institution). Rapport was also considered central to earning trust. The researcher tried to create rapport by establishing links with her life and the lives of respondents. This was especially easy in Site B where respondents often asked why it was selected as a location for the study and when they learnt the researcher had lived locally, conversations effortlessly followed about schools attended and so forth.

The extent to which the researcher was able to gain the trust of respondents was reviewed as the study progressed. Although it was difficult recruiting local authority home carers in Site A and independent sector home carers in Site B, those who were recruited appeared to talk frankly about suboptimal relationships with district nurses and other potentially sensitive topics. There was no significant variation in the average length of interviews with the different categories of respondents, which suggested roughly similar levels of rapport with home care and district nursing personnel (interviews last approximately 39 minutes with home care personnel and 38 minutes with district nursing personnel). However, one coordinator and two home carers refused permission to audio-record the interviews, which suggested concerns relating to trust were not wholly overcome.

5.7. Characteristics of study sites

Data were gathered describing the study sites (see section 5.2.6.2). The study sites differed considerably in relation to the features that were expected to have important patient safety implications. These included geographical features, labour market factors and family circumstances. There was also variation in relation to ethnicity and levels of deprivation. These features are now considered.

5.7.1. Demographic characteristics

The most recent census found that 175 797 people lived in Site A and 345 589 people lived in Site B (2001 Census Key Statistics Tables: Table KS01). The population in both study sites was largely made up of people of working age and the proportion of people aged 60 years and over was slightly less than the national average. This is illustrated below.

Age structure			
	Site A	Site B	England and Wales
% Under 16	18.4	21.2	20.2
% Age 16 – 59	67.9	60.5	59
% Age 60 – 74	9.2	11.8	13.3
% Age 75 +	4.5	6.3	7.6
Average age	34.7	37.8	38.6

Table 5.7: Age structure

Source: 2001 Census Key Statistics Tables (KS02)

Site A was one of the most cosmopolitan areas in the country. The largest non-white groups were Black African, Black Caribbean and Bangladeshi groups that individually accounted for between 2.4 – 5.9% of the population (2001 Census Key Statistics Tables: Table KS06). There were also large Cypriot and Irish communities and newly arrived refugees and asylum seekers. The main languages spoken (other than English) were Turkish, Bengali, Chinese, Greek and Gujarati (Fordham Research Ltd 1999). Site B was less ethnically diverse than the rest of England and Wales. Most non-white groups lived in the urban centres. The largest non-white groups were Black Caribbean and Indian groups which individually accounted for between 0.4 – 1.7% of the population (2001 Census Key Statistics Tables: Table KS06). The proportion of white and non-white groups is illustrated below.

Ethnic group			
	Site A	Site B	England and Wales
% White ¹	75	94.4	90.9
% Non-white ²	25	5.5	9.1

Table 5.8: Ethnic group

¹ Including White British, White Irish, and White Other

² Including Mixed: White and Black Caribbean, Mixed: White and Black African, Mixed: White and Asian, Mixed Other, Asian or Asian British: Pakistani, Asian or Asian British: Bangladeshi, Asian Other, Black or Black British: Black Caribbean, Black or Black British: Black African, Black or Black British Other, Chinese, and Other Ethnic Group

Source: 2001 Census Key Statistics Tables (KS06)

5.7.2. Geographical features

Site A covered 1 000 hectares (2001 Census Area Statistics Tables: Table UV02).

Site B covered 138 037 hectares and was a mix of urban centres and significant rural

areas (2001 Census Area Statistics Tables: Table UV02). Site A was one of the smallest London boroughs and had the second highest population density in England and Wales. This is illustrated below.

Population density				
	Site A	Site B		England and Wales
		BC1	DC1/2	
Persons per hectare (1 000 kilometres square)	118.3	24.1	1.2	2.4

Table 5.9: Population density

Source: 2001 Census Area Statistics Tables (UV02)

Site A was congested with traffic that passed through to the City and the West End as well as traffic that served the needs of local people and businesses. Site B experienced few congestion problems. This is illustrated below.

Traffic congestion			
	London	East Midlands	England
Average daily motor vehicle flow (all roads) ¹	5500	3200	3600
Average trunk road speed (mph) (am peak) ²	19.8	49.9	45.1

Table 5.10: Traffic congestion

¹ Average daily flow is annual traffic divided by road length x366

Source: Department of Transport, Local Government and the Regions (DTLGR): Table 4.4¹ and Table 4.5²

Parking was also heavily restricted in Site A. Large areas were controlled parking zones (including residential street parking control, red route control and estate parking control).

5.7.3. Social characteristics

Site A was ranked as one of the most deprived boroughs in England (Department of Environment, Transport and Regions (DETR) 1998). It ranked particularly highly in terms of the proportion of people living in wards ranked within the 10% most deprived in the country, the proportion of economically active residents who were unemployed and the proportion of people who were poor. The urban centres in Site B were less deprived than Site A but far less privileged than their rural neighbours.

The district councils were amongst the most prosperous in the country. This is illustrated below.

Deprivation			
	Site A	Site B	
		BC1	DC1/2
Deprivation ranking	10/354	169/354	310/354

Table 5.11: Deprivation ranking

Source: Department of Environment, Transport and Regions 1998

5.7.4. Local labour market factors

The key local labour market indicator was unemployment. Unemployment was highest in Site A (2001 Census Key Statistics Tables: Table KS09a). There were low unemployment and good levels of economic growth in Site B. This is illustrated below.

Economic activity			
	Site A	Site B	England and Wales
% Economically active residents unemployed	5.8	2.4	3.4

Table 5.12: Economic activity

Source: 2001 Census Key Statistics Tables (KS09a)

5.7.5. Family circumstances

Key indicators in this category were household size and the proportion of people with caring responsibilities. Households were smallest in Site A (National Statistics 2001). This is illustrated below.

Household composition			
	Site A	Site B	England and Wales
Average household size ¹	2.09	2.43	2.36
% Households containing one person ²	44	25.6	30

Table 5.13: Household composition

Source: 2001 Census Key Statistics Tables (KS19¹ and S51²)

London had a lower proportion of people with caring responsibilities than Site B.

This is illustrated below.

Adult carers			
	London	East Midlands	England and Wales
% Adults providing unpaid care	11	16	16

Table 5.14: Percentage of adults who were carers

Source: 2001 Census Key Statistics Tables (KS08)

5.8. Characteristics of respondents

Data were gathered describing respondents (see section 5.2.6.1). The respondents differed considerably in relation to employment history, relevant experience, accreditation and training. These differences are now discussed.

5.8.1. Home care respondents

5.8.1.1. Time in post

Respondents in Site B had been in post longer than respondents in Site A. For example, ten respondents in Site B had been in post five years or more compared to four in Site A. Local authority respondents had been in post longer than respondents in the independent sector. For example, 11 local authority respondents had been in post five years or more compared to three independent sector respondents. This information is summarised below.

Years in post						
	Site A		Site B		Both sites	
	Range	Average	Range	Average	Range	Average
Local authority sector						
Home care coordinators	1 ½ - 8	5	2 - 14	6	1 ½ - 14	5 ½
Home carers	5 - 10	7 ½	2 - 15	7	2 - 15	7 ½
Total	1 ½ - 10	6	2 - 15	7	1 ½ - 15	6 ½
Independent sector						
Home care coordinators	½ - 5	2	1 - 7	4	½ - 7	2 ½
Home carers	1 - 4	2 ½	1 - 5	3	1 - 5	2 ½
Total	½ - 5	2	1 - 7	3	½ - 7	2 ½
Both sectors						
Home care coordinators	½ - 8	3	1 - 14	5	½ - 14	4
Home carers	1 - 10	4	1 - 15	6	1 - 15	5
Total	½ - 10	3 ½	1 - 15	5 ½	½ - 15	4 ½

Table 5.14: Number of years home care respondents had been in post

5.8.1.2. Experience

Local authority respondents had been working in home care longer than independent sector respondents. For example, 11 local authority respondents had been working in home care for five years or more compared to eight independent sector respondents. This information is summarised below.

Years in home care						
	Site A		Site B		Both sites	
	Range	Average	Range	Average	Range	Average
Local authority sector						
Home care coordinators	1 ½ - 9	5	2 - 28	11 ½	1 ½ - 28	10
Home carers	5 - 10	7 ½	2 - 15	7 ½	2 - 15	7 ½
Total	1 ½ - 10	4	2 - 28	9 ½	1 ½ - 28	8 ½
Independent sector						
Home care coordinators	5 - 16	10 ½	1 - 15	7 ½	1 - 16	9
Home carers	2 - 9	4 ½	1 - 5	3	1 - 9	4
Total	2 - 16	7 ½	1 - 15	5 ½	1 - 16	6 ½
Both sectors						
Home care coordinators	1 ½ - 16	8 ½	1 - 28	10	1 - 28	9 ½
Home carers	2 - 10	5 ½	1 - 15	6	1 - 15	5 ½
Total	1 ½ - 16	7	1 - 28	8	1 - 28	7.5

Table 5.16: Number of years home care respondents had been in home care

None of the home carers had worked in home care prior to their present appointment, although many had experience working in other areas of health and social care. For example, three had worked in nursing homes, three had cared for a relative or friend, two had worked in a day nursery, and one had worked in a day centre for people with mental health problems. Another was a third year student nurse. For those without any caring experience, previous employment included shop assistant, factory worker and laundry attendant.

5.8.1.3. Preparation

Three local authority home carer respondents held relevant qualifications (such as NVQ Care (Level 2)) compared to one independent sector home carer. None of the local authority home carers in Site A or any of the independent sector home carers in Site B held relevant qualifications.

Both local authority home carer respondents in Site A had attended medication training and two local authority home carers in Site B. None of the independent sector home carers in Site A had attended medication training. Two independent sector home carers in Site B had attended medication training. Four local authority

home carers had attended medication training compared to two independent sector home carers.

5.8.1.4. Accreditation

None of the home carers in Site A were registered with the National Register for Carers and Care Workers (NRC). One local authority and one independent sector home carer in Site B was registered with the NRC. Two out of the four independent sector organisations participating in Site A and all four participating in Site B were members of the UKHCA. No data were available profiling the local authority and independent sector workforce nationally.

5.8.2. District nursing respondents

District nurse team leaders and community staff nurses were not asked questions regarding experience, accreditation and training since they were all qualified nurses registered with the UKCC. They were only asked about time in post. Respondents in Site B had been in post longer than respondents in Site A. For example, eight respondents in Site B had been in post five years or more compared to four in Site A. No data was available profiling the workforce nationally. This information is summarised below.

Years in post						
	Site A		Site B		Both sites	
	Range	Average	Range	Average	Range	Average
All district nurse respondents	≤ ½ - 26	4 ½	≤ ½ - 31	9 ½	≤ ½ - 31	7

Table 5.17: Number of years district nurse respondents had been in post

5.9. Characteristics of service providers

Data were gathered describing service providers (see section 5.2.6.2). Service provision differed considerably across study sites in relation to participation in the mixed economy of care. There was also variation in relation to home care and district nursing service vacancy rates. Other differences included the contract types by which local authority and independent sector providers employed home carers. These areas of variation are now discussed.

5.9.1. Home care provision

5.9.1.1. Service arrangement

The independent sector was commissioned to provide 83% of contact hours in Site A and 68% in Site B (DH/National Statistics 2000: Table 1.1). Social services departments in both study sites had spot contracts with independent providers. A survey of independent sector providers in England found that 69% were solely in receipt of spot contracts (Hardy 1998).

5.9.1.2. Administration and organisation

In Site A the local authority home care department provided care Monday – Friday between 08:00 – 17:00 (all evening and weekend work was undertaken by the independent sector). Home carers mostly worked flexible hours within a guaranteed minimum hours contract. They were expected to make telephone contact with coordinators each day but their presence in the administration office was only required approximately monthly (for team meetings and supervision sessions). The workforce was traditionally relatively stable but respondents described how many experienced and long serving members of staff had taken early retirement and voluntary redundancy during recent workforce reorganisation. Respondents estimated the vacancy rate was approximately 20%.

In Site B the local authority home care department provided care seven days a week between 07:00 – 22:30. Home carers mostly worked flexible hours within a guaranteed minimum hours contract. They were expected to make telephone contact with home care coordinators each day but their presence in administration offices was only required approximately monthly. Home care coordinators considered their teams relatively stable. Respondents estimated the vacancy rate was approximately 12%.

In both study sites the independent sector home carers were employed on zero hours or casual contracts. They were expected to make telephone contact with home care coordinators each day but their presence in the administration offices was only required monthly. When local authorities spot purchased additional hours the staff were asked to work extra hours.

5.9.2. District nursing provision

5.9.2.1. Administration and organisation

In Site A the district nursing service provided care seven days a week. The daytime teams worked from 08:30 – 17:00 and the night team worked from 17:30 – 08:30. Team leaders required that community staff nurses be present in the administration offices at 08:30 and 14:00. Findings from the self-administered questionnaires suggested that approximately 45% of older patients on the district nursing caseload were in receipt of home care. Half of all participating teams had at least one community staff nurse vacancy (vacancies were covered by agency staff). National data suggests the vacancy rate in Site A was far greater than the national average.

Vacancies			
	Site A	Site B	England and Wales
Vacancy rate (%)	12.5	1.4	1.3

Table 5.18: District nursing vacancy rates

Source: Vacancies Survey, March 2000, Table 3 (DH2000d)

In Site B the district nursing service provided care seven days a week between 08:30 – 17:00. There was no night provision. Team leaders required that community staff nurses be present in the administration offices at 08:30 and 14:00. Findings from the self-administered questionnaires suggested that approximately 47% of older patients on the district nursing caseload were in receipt of home care. One fifth of participating teams had at least one community staff nurse vacancy (vacancies were covered by bank staff). National data suggest the vacancy rate in Site B was comparable to the national average.

5.9.3. Joint provision

The first performance indicators for social services were introduced by the Department of Health in 1999. Four indicators were developed at the interface between social services and the NHS. These measured the extent to which social services worked with the NHS to avoid unnecessary admissions of older people to hospital and delayed hospital discharges, and to maximise the health status and

independence of the older people they supported. Site A scored poorly in all categories except delayed hospital discharge. Site B scored well in all categories except delayed hospital discharge. These findings are illustrated below.

Measures of effective joint provision			
	Site A	Site B	England and Wales
Emergency admissions of people over 75 years	276.4	233.1	268
Delayed hospital discharges of people over 75 years	1.4	1.8	1.7
Hospital admissions for falls and hypothermia of people over 75 years	31	20	24
Admissions of people aged over 75 years in receipt of home care to residential care homes	143	101	135

Table 5.19: Measures of effective joint provision (numbers per 1 000 head of population aged 75 years and over)

Source: 1998-1999 PAF Indicator (DH 1999a): KS1 Data Item

5.10. Presentation of findings

The study findings are presented in two chapters. The first describes the study findings in relation to the variety of medication related activities undertaken by home care and district nursing respondents and examines the factors that determined their involvement in these activities. The second explores the study findings in relation to the range of factors that predisposed to adverse events when responsibility for medication related activities was transferred from district nursing to home care services and the factors that enhanced patient safety.

Chapter 6: Medication related activities undertaken

The purpose of this chapter is to analyse and report the variety of medication related activities undertaken by district nursing and home care respondents in the present study and to consider what factors determined their involvement in these activities. It is also to examine whether any variation existed in the activities undertaken by respondents in the two different study sites and home care sectors.

6.1. Medication related activities undertaken by home carers

Home care respondents were involved in many different medication related activities. The catalogue of activities reportedly undertaken is more comprehensive than previously documented (see section 3.4.2). Most were activities that a physically and mentally able person living at home would undertake independently with minimal or no nursing intervention.

6.1.1. Identifying and reporting previously undiagnosed symptoms

Patients frequently described new symptoms to home carers before they informed anyone else. Respondents also observed and identified previously undiagnosed symptoms. An example is:

A lady ... She'd had a fall ... and took the skin off her arm. The district nurse has been dressing it but it has been weeping quite a bit. The bandage slipped down and I could see that it was getting quite red and it's been weeping a lot. The district nurse was dressing it twice a week, but in the meantime I felt it needed extra, because you could definitely see that it was getting a bit nasty so I asked her to come again and she redressed it and gave her some antibiotics. Local authority home carer in Site B (5: 1)

The most commonly identified conditions were constipation, skin disorders and earwax impaction. These were observed whilst home carers assisted with toileting

and bathing. Several district nurse respondents described occasions when they had been alerted to previously undiagnosed symptoms. An example is:

It will be quite often that carers will come to us and say 'this patient has got blocked ears can you come and syringe them'. So we look at the patient with the carer and say that they are going to need eardrops. District nurse in Site A (4: 7)

Respondents always reported previously undiagnosed symptoms to district nurses and/or general practitioners. Some also applied non-pharmaceutical solutions such as dietary modification to relieve constipation.

6.1.2. Facilitating the self-administration of medication

6.1.2.1. Clarifying the regimen

Patients were sometimes uncertain about how medicines should be used. Several respondents spoke about how they interpreted directions or clarified regimens with prescribers. An example is:

I've got a lady ... she's got a septic toe ... the doctor prescribed Flucloxacillin in the first place ... now after a couple of days she didn't feel any better. She self medicates. When I went on the Tuesday morning she said the doctor had been out and given her Cephalexin but she didn't know whether to carry on with both or to knock one off. So I had to ring through to the surgery and find out. Local authority home carer in Site B (1: 8)

6.1.2.2. Teaching self care techniques

Patients were encouraged to maximise their level of independence. Respondents were reluctant to undertake activities that patients could be taught to undertake themselves. One cited an occasion when a patient was shown how to administer her own eye drops:

Well the patient was doing her own eye drops but she fractured her wrist and went into hospital. She used to do them two handed, so we were going in there to do them and one of the carers said to me 'I can do my own one handed' and she showed

me how she did it, so I said 'see if you can teach this lady to do it' and she did.

Local authority coordinator in Site B (2: 17)

6.1.2.3. Removing container closures or packaging

Patients with impaired vision and/or poor manual dexterity encountered problems accessing medication supplied in screw-topped containers, blister packs and foil-covered packs. Respondents removed container closures and opened medication packaging. An example is:

I help open a packet of Fybogel ... I don't empty the sachet into a glass, I just rip the top off to help her and then she pours it into the glass and adds the water.

Independent home carer in Site B (2: 3)

Respondents also prepared doses to be taken later in the day or week. They put medication out (in saucers, eggcups and bowls) and sometimes loaded medication compliance devices. An example is:

Co-Proxamol, I've taken that out of the packet before. There's this one lady and she takes it throughout the night. She's completely all there. She's bed ridden and her fingers aren't very good. She says 'pop some of those out for me' and then she has them later in the night. Local authority home carer in Site B (1: 14)

6.1.2.4. Reminding patients to take medication

Patients were sometimes inclined to forget to take medication. Verbal prompting was the most frequently cited of all medication related activities undertaken by home carers. Respondents reminded patients to take their medication at the prescribed dosing time. An example is:

One lady is getting rather paranoid ... the district nurses go in the morning and give her half a Risperidol... the other half is left in this pink pot and we see that she takes it in the evening ... I get her a glass of water and I say 'Maggie here you are' and she says 'Oh have I got to take that lovie' and I say 'Yes Maggie' and she does. Independent home carer in Site A (2: 1)

6.1.2.5. Encouraging patients to take medication

Patients were occasionally reluctant to take prescribed medication. For example, they were sometimes unwilling to complete courses of prescribed antibiotics because they started to feel better within a few days of treatment. Respondents encouraged patients to take their medication as prescribed. An example is:

There is one I go to in the morning who has a catheter in ... she doesn't like antibiotics but she always have an infection, so she supposed to take the antibiotic. She didn't take it for three days, the fourth day she wouldn't take it and she felt ill ... So I say to her 'It don't work like that, you have to start to take your medication, you have to take it continuously for seven days, you don't stop'. Independent home carer in Site A (4: 6)

6.1.3. Administering medication

Respondents administered oral medication (tablets and liquid formulations), skin preparations, eye drops and enemas. Most commonly they administered solid oral doses. Sometimes they administered from medication compliance devices and at other times from standard packaging. The preferred method was administration from a medication compliance device. Medication compliance devices were loaded by a district nurse, community pharmacist or family member. An example is:

Well there is this chap, what happens is he has them all in a [medication compliance device] ...his daughter fills up ... he had a chest infection which made him a little confused, so we have been going there to make sure he has his medication ... so what I do in the morning is open the box, tip them into his hand and say 'here are your tablets Albert' and he will take them. Local authority home carer in Site B (5: 3)

The second most commonly administered medication was skin preparations. Eye drops and enemas were administered relatively infrequently. Respondents said they usually only ever administered long term eye drops (that is drops to treat chronic conditions such as glaucoma) and very rarely post operative eye drops (that is drops

prescribed to promote healing following surgery). Only two home carers administered rectal medication.

6.1.4. Monitoring adherence

Patients were sometimes non-adherent to medication regimens. Respondents were vigilant to changes that indicated lapses in adherence. An example is:

He's 76 this year... he's schizophrenic ... a schizophrenic that's not controlled with medication can get a bit up in the air and go off a little bit and that's what happened to him... I just sort of put two and two together and worked out that he wasn't remembering his medication. Local authority home carer in Site B (6: 3)

Failures in self-administration were also identified when doses were discovered dropped under furniture and hidden in clothing. Several district nurse respondents described occasions when they had been alerted to poor adherence. An example is:

The lady I'm thinking about... we would see her now and again for the odd leg wound. It was the home carer who contacted us and suggested that we set up a [medication compliance device]. She didn't feel she was taking the right amount at the right time. I think with the home carer was going in twice a day, she came to realise the extent of the problem more than we did seeing her only every few months. District nurse team leader in the primary care trust in Site B (2: 5)

6.1.5. Monitoring iatrogenic and treatment effects

Drug treatment is made more complex by the physiological aging process and iatrogenic disorders are an important cause of morbidity in older people. Several respondents identified adverse drug events. An example is:

She's been on painkillers for her arthritis and they affected her brain. She was hallucinating and seeing flying dogs. I had to call the doctor... so the doctor took her off them and she was fine. Local authority home carer in Site B (4: 8)

Respondents monitored whether symptoms were relieved by treatment. Persistent symptoms were reported to district nurses and/or general practitioners. An example is:

She'll be 94 years... at the moment she's got this skin complaint. It started off as eczema. All round her back and her face. They put her on steroid tablets. But they didn't work ... it got worse. It spread down her arms and legs. So I rang the district nurses and they came out and they put a prescription in for steroid cream.
Local authority home carer in Site B (4: 3)

6.1.6. Controlling stocks

6.1.6.1. Ordering repeat prescriptions

Several respondents arranged repeat prescriptions. These were delivered by hand or sent electronically to the chemist. An example is:

He's a schizophrenic... I send thorough the prescription for him because he's not capable of doing that... I send the green repeat prescription request form with a stamped addressed envelope... The prescription comes to his house and I take it to the chemist. Local authority home carer in Site B (6: 2)

6.1.6.2. Carrying medication and arranging safe storage

Most respondents collected and/or delivered medication. They stopped at the chemist whilst out shopping and between visiting patients. An example is:

We have to give her medication because she suffers with dementia... she has a [medication compliance device]... chemist normally drops them into the patients but I prefer to pick her one up because she is confused and might take them all. I don't want to take any chances so I pick them up from the chemist myself. Local authority home carer in Site A (2: 2)

Several also arranged safe storage to prevent accidental or intentional overdose. This involved keeping medication out of sight and out of reach. An example is:

We had one lady and we locked her medication up and her daughter hid the keys... but she used to say 'my medication is locked up and the keys are on the top of the bathroom cabinet'... she then started tampering so we moved the key into a box with a combination lock. Local authority coordinator in Site B (3: 14)

6.1.7. Accompanying patients to medical consultations

Patients sometimes needed to be accompanied to medical consultations.

Respondents attended medical consultations, helped articulate symptoms and carried out subsequent instructions. An example is:

I've taken her to her regular appointments with the consultant at the general hospital for the last two years. He's got her on new tablets for the trigeminal and he wants to wean her off the old ones. I will wean her off the Gabapentin with his advice. Independent home carer in Site B (5: 3)

6.2. Medication related activities undertaken by nurses

Only a proportion of patients were in receipt of both district nursing and home care services. Analysis revealed four patterns of district nursing involvement in medication related activities when patients were in receipt of both district nursing and home care services. These patterns are specified below. This section describes the medication related activities reportedly undertaken by district nurse respondents when patients were in receipt of both district nursing and home care services.

- The home care service undertake at least one medication related activity and the district nursing service is also involved in some medication related activity such as therapeutic monitoring or loading a medication compliance device
- The home care service undertake at least one medication related activity and the district nursing service visits to attend to a health need (such as a leg ulcer dressing) but is not involved in any medication related activity
- The home care service undertake at least one medication related activity and the district nursing service visits to attend to a health need and is also involved in some medication related activity
- The home care service undertake at least one medication related activity and the district nursing service visits someone else in the same household

Box 6.1: District nursing involvement in medication related activities for patients in receipt of home care services

6.2.1. Facilitating the self-administration of medication

6.2.1.1. Clarifying the regimen

The previous section described how home carers interpreted directions or clarified regimens when patients were uncertain about how medicines should be used.

Several district nurse respondents were involved in checking patient medication records on EMIS computing systems. An example is:

We had a gentleman whose medication kept changing so it was my responsibility to liaise with the doctor to find out what he should be taking. I delivered the medication with a list of what and when he should take it. The carers were to prompt him from the original packaging. Community staff nurse in Site A (6: 13)

6.2.1.2. Teaching self care techniques

The previous section described how home carers encouraged patients to maximise their level of independence and demonstrated relatively straight-forward activities such as the self-administration of eye drops. District nurse respondents taught patients to undertake more complex activities such as the self-administration of insulin using cartridge injection devices.

6.2.1.3. Putting medication out to be taken later

The previous section described how home carers sometimes loaded medication compliance devices when patients with impaired vision and/or poor manual dexterity experienced problems accessing medication from standard packaging. District nurse respondents were reluctant to load these devices. They complained it was excessively time consuming and that errors might occur when medication was transferred from one container to another. Nevertheless several respondents were obliged to load these devices because no suitable alternatives were available. An example is:

We have a chap who has a very complex tablet regimen. I had to load a [medication compliance device] for him... We found a chemist who would do it...

but then they decided that there was a small charge. The patient was reluctant to pay. It was only £1 a week but he just wasn't having... so we had to continue to load the [medication compliance device]. District nurse team leader in the community care trust in Site B (1: 3)

Patients with impaired vision and/or poor manual dexterity sometimes encountered problems withdrawing prescribed doses of insulin from the original vial. Several nurses preloaded syringes so that patients could self-administer insulin later in the day or week. An example is:

Every week we draw up the patient's insulin. She has different doses morning and evening. We have a system where the prefilled syringes are kept in different labelled compartments in the fridge. The home carer passes the patient the syringe and she injects herself. District nurse team leader in Site A (6: 7)

6.2.2. Administering medication

District nurse respondents administered oral medication (tablets and liquid formulations), inhalers, skin preparations, eye drops, enemas, injections and intravenous medication. They also administered medication via enteral feeding routes.

6.2.3. Monitoring iatrogenic and treatment effects

The previous section described how home carers monitored drug effects by way of patient reports and visual observation. District nurse respondents monitored drug effects by way of patient reports, visual observation and biological assays. They were asked to take venous blood samples for INR, glucose and glycosylated haemoglobin levels. Laboratories forwarded results to general practitioners who asked district nurses to modify anticoagulant and hypoglycaemic regimens as necessary.

6.2.4. Monitoring the use of medication compliance devices

When nurses loaded or arranged medication compliance devices they visited patients with some regularity to ensure doses were being administered correctly. They also

monitored in case prescribers altered regimens without informing the pharmacist responsible for loading the device. An example is:

We should be going in once a month to see that [pharmacist filled medication compliance devices] are running smoothly. When I reassess them I try and meet up with the carer and check with them and the patient that it has been running smoothly. I also check the last [device] to make sure that they haven't left any doses. I found one patient kept leaving off his evening dose. It was only Senna and he told his carer he no longer needed a laxative. It was useful for me to go in and see that because it meant I could tell the GP and pharmacist not to put them in there. District nurse team leader in Site A (4: 3)

6.2.5. Instructing home carers

District nurse respondents instructed home carers how to undertake medication related activities. This was sometimes planned but often opportunistic. It occurred on a one-to-one basis and took place in the home. Most frequently they taught home carers how to administer medication from a medication compliance device and how to instil eye drops.

6.3. Negotiating responsibilities

There were certain medication related activities that both district nursing and home care respondents undertook. The overlap between district nursing and home care services in relation to responsibility for medication related activities is illustrated below.

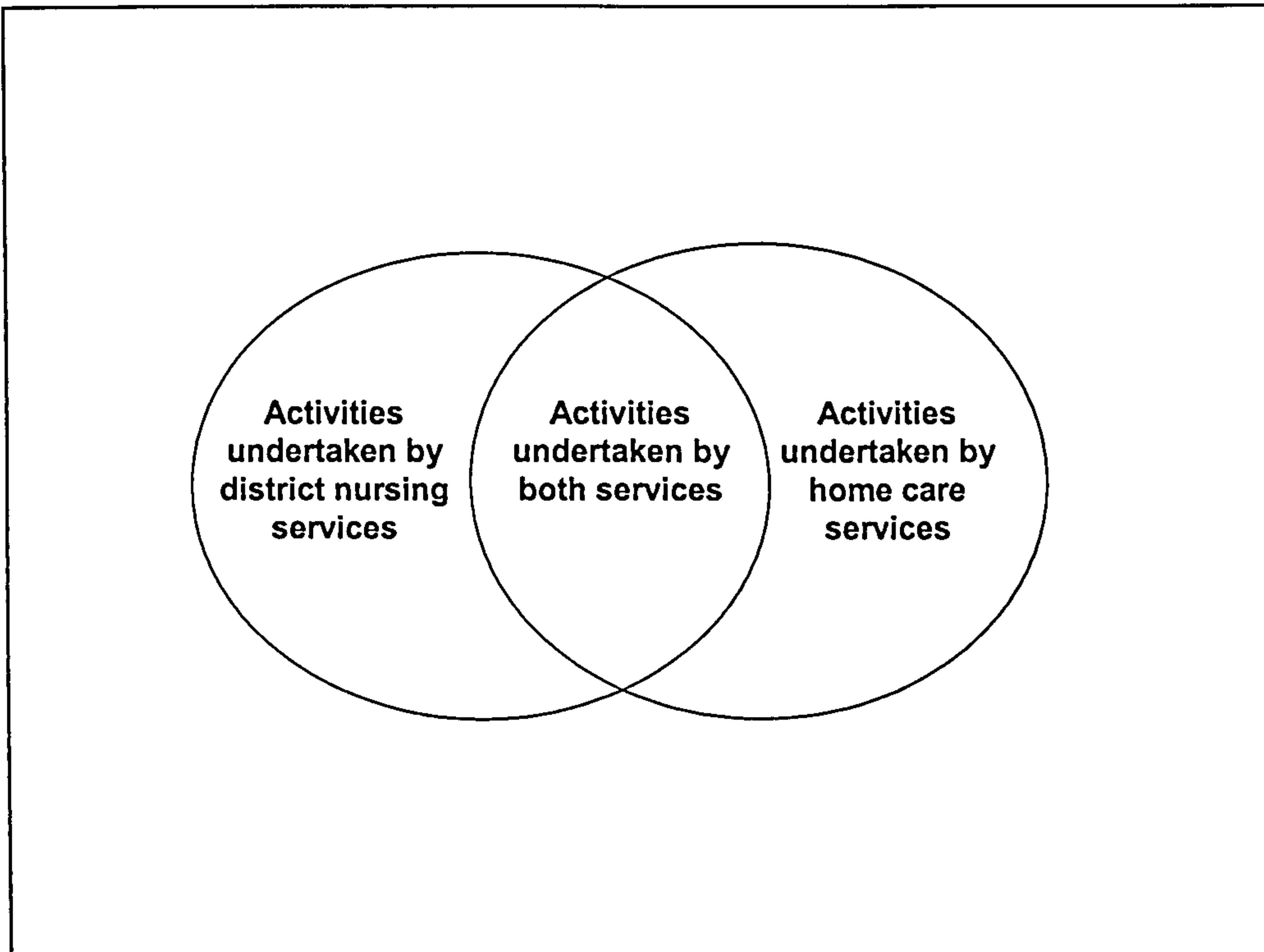


Figure 6.1: Overlap between district nursing and home care services in relation to responsibility for medication related activities

The activity where there was most overlap was medication administration. Responsibility for medication administration was negotiated at a local level. The factors that influenced whether or not responsibility for medication administration was transferred from district nursing to home care services are now considered.

6.3.1. Medication related policies

Local medication related policies set standards for safe practice. The guidelines issued by home care providers in relation to medication administration are summarised below.

	Home care providers											Providers allowing	Providers prohibiting	Providers omitting to mention
	Local authority		Independent sector providers											
	A	B	AA	AB	AD	BA	BB	BD						
• Solid oral doses from standard packaging	P	A	P	A	A	P	A	A	A	A	5	3	0	
• Solid oral doses from a medication compliance device	A	A	A	A	A	A	A	A	A	A	8	0	0	
• Liquid medication	A	A	A	A	A	A**	A	A	A	A	8	0	0	
• Inhalers				A****							1	0	7	
• Controlled drugs	P		A***	A*****		P	P				2	3	3	
• Skin preparations	A*	A		A		A			A		5	0	3	
• Routine eye and ear drops	A	A**		A**		A**					4	0	4	
• Post surgery eye drops	P	A				A					2	1	5	
• Rectal medications	P	A	A	P		P	P		A		3	4	1	

Table 6.1: Types of medication that home carers were allowed (A) or prohibited (P) by home care policies from administering

* Only dry skin preparations and barrier creams

** Only following instruction from a doctor or nurse

*** Only solid oral doses (liquid controlled drugs must be measured out in advance by a nurse)

**** Only when single measured dose devices are prescribed (e.g. rotocap inhalers)

***** But only when loaded into a medication compliance device

The local authority in Site A issued the strictest and most comprehensive guidelines. These prohibited home carers administering solid oral doses in standard packaging, potent liquids, controlled drugs, rectal medication, potent skin preparations and eye drops linked to recent surgery.

6.3.2. Failures in home care provision

District nursing services usually only administered solid oral doses and inhalers when administration by home care providers repeatedly failed and a long-term solution needed to be negotiated with the care manager or home care coordinator.

An example is:

She has been in and out of hospital recently. Her regular home carer moved and it seems her care has collapsed. The carers are meant to prompt from her [medication compliance device] and she also has inhalers. We have been visiting daily to ensure she uses her inhalers because people haven't been giving them and she is meant to be using them for chest problems. Community staff nurse in Site A (3: 3).

6.3.3. Stability/predictability

District nurses respondents were reluctant to transfer responsibility for administering non-oral anti-inflammatory and antibiotic preparations. For example, several would not transfer responsibility for administering creams to treat inflamed eczema or eye drops to promote healing after cataract surgery. They argued that patients receiving this type of treatment were likely to be unstable and unpredictable, that is their response to treatment could not be anticipated with any certainty, thus requiring continuous reassessment and care planning (see section 2.3.6).

At the same time district nursing respondents were anxious to transfer responsibility for administering creams to treat dry skin complaints and drops to treat long-term eye conditions because patients receiving this type of treatment were likely to be stable and predictable, that is their health or disease was in a steady state and likely to remain so if the correct care and treatment regimen continued (see section 2.3.6). An example is:

We had one gentleman. He had the removal of a tumour from the brain. He also had a cataract operation done. He's on long term Dexamethazone just for the pressure at the back of the eye. He'll be on this for the rest of his life. So once the postoperative cataract was done fine, after a month, we got the home carers involved and it's working beautifully. Community staff nurse in Site A (4: 8)

6.3.4. Mode of delivery

District nurse respondents were unsure whether or not to transfer responsibility for liquid formulations. Several expressed concern that errors might occur when measuring doses. An example is:

I don't know whether I'd be happy with home carers giving liquid medication, I'd be concerned about whether they'd pour it out accurately. District nurse team leader in the community health trust in Site B (1: 2)

Consequently they classified liquid formulations according to whether dosing accuracy was deemed essential or desired and responsibility was not transferred when dosing accuracy was deemed essential. An example is:

I don't think they should actually measure out Oramorph because of the problems you could come into if it was an incorrect dose. Things like Lactulose they would measure because the odd 5mls more or less would not make that much difference. District nurse team leader in the primary care trust in Site B (2: 9)

6.3.5. Patient preference

District nurse respondents occasionally retained responsibility for medication administration when patients were apprehensive about the transfer of responsibility to home carers and did not want the district nurses to withdraw their support. An example is:

When [patients] go onto [pharmacist filled medication compliance devices] we go in to monitor the home carers... very often the patient is used to the district

nurse [visiting] and they do not - hook or by crook - want to lose us. So occasionally they will say the carer dropped a tablet or something so that we keep going in.

Community staff nurse in Site A (4: 3)

6.3.6. Home carer motivation

Motivation affected the apparent willingness of individual home carers to assume responsibility for certain types of medication administration. For example, several respondents described occasions when home carers were unable to administer enemas and eye drops because they were easily disgusted. An example is:

I've taken a few girls in [to show them how to give an enema] and they cannot do it because they don't have the stomach for it. Independent coordinator in Site B (5:12)

Other home carers were keen to undertake activities that were once the responsibility of qualified nurses. Several respondents indicated a certain prestige attached to undertaking these activities. An example is:

Those home carers who were administering were very confident and say it as a responsible task they wanted to take on, a feather in their cap really, stretching them a bit more. Local authority coordinator in Site B (1: 6)

Most home carers assumed responsibility for medication related activities on pragmatic grounds. They administered medication because it saved nursing time. An example is:

Not all teams do eye drops. We ensure that the [home carers] have been shown how to insert an eye drop by the district nurse and then they can do it. It's personal preference whether you do them and how you feel about it. But if we are going in there to get somebody up, get them their lunch, get them their tea and help them to bed and they need eye drops four times a day, it seems mad to expect both a nurse and a carer to both go when one person could do that job so simply when they are already there. Local authority coordinator in Site B (4: 7)

6.3.7. Training provided by district nurses

District nurse respondents only transferred responsibility for the instillation of eye drops linked to recent surgery when they knew the home carer personally and were satisfied they were sensible and reliable and possessed good communication skills.

An example is:

It depends on the carer; it really depends on what knowledge I have of the carer. If I know the carer and I am familiar with their work and their credibility then perhaps yes I will [transfer responsibility for certain activities]. District nurse team leader in the community care trust in Site B (5:8)

Suitable home carers were (with the agreement of their coordinators) given one-to-one training. The district nurse demonstrated the procedure and then observed the carers undertake it him or herself under supervision (written instructions were also provided). The nurse assessed their competence and emphasised the importance of communicating patient changes.

6.4. Variation between study sites

The only variation between study sites was in relation to the number of respondents loading medication compliance devices and carrying medication. Fewer respondents in Site A loaded medication compliance devices. This was because the local health authority remunerated community pharmacists loading medication compliance devices for older people in receipt of home care. Fewer respondents in Site B collected and delivered medication. This was because there were good informal support networks in place. An example is:

We are a dispensing surgery... the pharmacist prepares a box of medicines for various patients [living in a neighbouring village] every Friday. The box gets delivered to a nominated person in the village and the milkman collects the medicines for the various patients on the Saturday morning and he delivers them.

District nurse team leader in the community health trust in Site B (5: 2)

6.5. Conclusion

This chapter has identified the variety of medication related activities reportedly undertaken by district nursing and home care respondents and what factors determined their involvement in these activities. The next chapter specifies the range of factors that predisposed to adverse events when responsibility for medication related activities was transferred from district nursing to home care services.

Chapter 7: Domains of risk and patient safety in medication management in domiciliary care

This chapter is divided into four sections. The first section analyses the factors that respondents identified as predisposing older people to adverse events and as enhancing safety when responsibility for medication related activities was transferred from district nursing to home care services. The extent to which these factors were generic to both study sites and both home care sectors is examined in the second section. The third section appraises the finding in relation to the factors identified in earlier chapters as likely to predispose to adverse events. The fourth section uses the study findings to create a taxonomic model specifying the range of factors that predispose to errors and adverse events in this area of care.

7.1. Factors influencing medication management

This section analyses the factors that respondents identified as predisposing older people to adverse events and as enhancing patient safety when responsibility for medication related activities was transferred from district nursing to home care services. It is organised around the seven major factor types listed in the FFICP.

7.1.1. Patient factors

This section explores patient factors. Five contributory factors were identified. These were condition factors, personal factors, treatment factors, staff-patient relationship and patient choice. These are now explored.

7.1.1.1. Condition factors

Respondents reported that a large number of older people in receipt of home care services had mental health problems. Most notable were depression and dementia. Their effect on patient safety is now considered.

Depression

Respondents cited incidents when patients intentionally overdosed on prescribed medication. An example is:

There was a lady who was depressed and had been given a whole load of tablets in [a medication compliance device] when she came out of hospital... The home carer called me out because she was worried about the lady and I'd seen her when she came out of hospital... I went round... she certainly wasn't the person I'd seen a couple of days before... I knew she'd taken all the tablets because there was none left... I just had to call an ambulance and get her taken to hospital. She was depressed... her husband hadn't long died and I think it affected her more than people thought at the time. Local authority coordinator in Site A (S: 14)

Although diagnoses of depression preceded most of these incidents, respondents could not recall whether any harm minimisation strategies had been developed or put into effect beforehand. On one occasion the patient died.

Dementia

Patients with dementia were vulnerable to adverse medication events because they were unable to direct their own care and did not understand the purpose and/or importance of prescribed medication. They were especially vulnerable when new recruits or peripatetic home carers were on duty. One home care respondent recalled an incident that occurred when she was working a relief shift. The patient in question had short-term memory loss and issued her with the wrong medication related instructions:

I visited a chap, both him and his wife both take quite a lot of tablets and he said to me 'could you bring my tablets through they are in a little pot on the kitchen table'. So I went and got the tablets, they were already ready, his wife apparently every night sat down and put them all in a little pot for him... So I went and got the pot and I brought it to him and he had his cup of tea and he had his tablets... His wife came down the stairs having had her wash and went into the kitchen and said 'oh he'd had his tablets already, they were my tablets'. Local authority home carer in Site B (5: 7)

Home care respondents described how adverse events were avoided when staffing continuity allowed them to familiarise themselves with their cognitively impaired

patients. One respondent explained how over time she learnt to be extra vigilant when administering medication to one particular patient:

I've got a chap with mental health problems. You have to watch he doesn't put his tablets in his pocket... you watch him like a hawk until he swallows them... He sneaks anything into his pockets... like teabags and teaspoons all go into his cardigan pockets. Local authority home carer in Site B (1: 5)

As well as not being able to direct their own care, patients with dementia were not able to recognise failures in their care or voice concerns regarding home carer performance:

A colleague had a call from the district nurse saying the home care communication book had been signed but no one had actually been to the client [that is the carer had signed the book on a previous visit so that it would look like she had made two visits and not just the one]... the district nurse caught them out... It's not very good because I think the client was due medication... It's a bit scary really because some clients can't tell you that nobody has been or the carer says that they have and who do you believe if the person has dementia? Community care assessor in Site B (2: 9)

7.1.1.2. Personal factors

Factors related to the character of the patient or their private life included personality factors, social and family circumstances and adult protection issues. Their effect on patient safety is now explored.

Personality

District nurse respondents claimed home carers sometimes avoided accessing difficult or unpleasant patients. These were patients with complex needs and/or patients who were rude, miserable or mean spirited. One described an occasion when care was so haphazard that the patient eventually became unwell and required hospitalisation:

There's a gentleman round the corner ... we got him a [medication compliance device] ... carers should have been going in washing him, preparing something to eat and prompting medication ... he takes an awful long time to get to the door ... several times a carer has gone to the door and knocked and gone away ... we didn't have problems getting in ... eventually he was admitted to hospital for dehydration and malnutrition ... I think part of the problem was of his own making in that he wasn't pleasant to people ... he is quite objectionable ... but the carers should have learnt to deal with it. District nurse team leader in the community health trust in Site B (6: 20)

Visits to unpopular patients were sometimes hurried. One home care respondent described how a patient had her topical medication wrongly applied:

Well this lady I've got with the skin complaint ... we have to apply cream ... the carers that visit her in the morning ... put it on so thick I have to really scrub it off ... The client is a bit miserable and she can be a bit nasty so I think they just whack it on and get out. Local authority home carer in Site B (4: 12)

Social and family circumstances

Attentive family members were an important defence against adverse medication events. They helped prepare doses to be taken later, monitored adherence and controlled stocks. District nurse respondents also described the important role attentive family members played in monitoring home care performance:

He has a very supportive brother who picks up the prescription and [the medication compliance devices]. He is very much involved in telling the carers about [the medication compliance device] and making sure he has been given the medication. The brother keeps a close eye on it. Community staff nurse in Site A (7: 8)

This role was especially valuable when patients were cognitively impaired or unable to speak English:

She had a stroke some time ago... She's Chinese and doesn't speak English ... She lives with her daughter who works full time. She's only on one tablet ... for sugar regulation. I take two tablets out of the packet and give them to the client. The daughter monitors that the medication is given. She only leaves one week's medication out and counts that they have been given. When I first started looking after this client I once missed a dose ... and the daughter spoke to me about it.

Independent home carer in Site A (1: 1)

Adult protection issues

Home care respondents described how participation in medication related activities provided malicious family members with a means to poison older relatives:

District nurses were loading [a medication compliance device] and the carer noticed the box has been tampered with, possibly by the daughter who was jealous of the attention her mother was getting ... the home carer immediately contacted the home care manager, who did an emergency risk assessment visit with the social worker.

Independent coordinator in Site A (2: 1)

Strategies to reduce the involvement of malicious or overwrought family members included the provision of pharmacist filled medication compliance devices:

None of mine have [medication compliance devices] loaded by the pharmacist... the families load them... with the exception of two [that we load]... I think it is better that the pharmacist loads them... You've got to trust the family. Nobody wants to kill their mum, or do they? You don't know what goes on in families. So I think for that point it would be safer [if the pharmacist loaded them].

Independent home carer in Site B (5: 8)

7.1.1.3. Treatment factors

Factors related to treatment included patient familiarity with treatment regimens and treatment effectiveness. Their effect on patient safety is now explored.

Patient familiarity with treatment regimens

Patients who were cognitively intact and were well informed about their medication regimens helped prevent medication errors. They reminded home carers to administer medication, identified incorrect doses and notified home carers regarding regimen changes. An example is:

She started off on two tablets and now she is on four ... she tells me when the doctor has changed her prescription ... she'll say 'they've given me more tablets' ... with her it is easy because she can tell you. Local authority home carer Site B (6: 8)

One home care respondent described how her patient supervised the loading of her own medication compliance device:

One's blind ... [the home carers] actually fill the [medication compliance device] for her ... I fill it most weeks ... She tells me exactly the name of the tablet and how much she takes and I take it out of the packet and put it in the [medication compliance device] ... she has tablets morning, lunchtime, teatime and bedtime, so it's quite a lot of tablets ... she'll say the name of the tablet and how much she takes and I get the packet, I take out the tablet and how much she has, but then I double check with her 'I've got Cipramil in my hand, I've got 2.5 mg, is that correct?' ... I also check the right hand side of the prescription ... that's the way I do it. Then I feel safer she's actually getting the correct dose. Independent home carer in Site B (6: 1)

Treatment effectiveness

One home care respondent described how a patient with poorly controlled symptoms overdosed on prescribed medication:

We've had one lady... who took three days supply in one day out of her medication compliance device... she has Parkinson's disease, she was helping herself to her Sinemet tablets, thinking 'my legs are a bit stiff, I'll take as many as I like'. Local authority coordinator in Site B (2: 13)

7.1.1.4. Staff-patient relationship

Communication between staff and patients and the importance of trusting relationships is explored in section 7.1.4.1.

7.1.1.5. Patient choice

Reluctance to accept nursing intervention and/or clinical equipment

Homes are domestic settings within which nurses, clinical equipment and medical devices sometimes appeared incongruous. Respondents cited occasions when home carers were involved in unsafe activities because registered nursing intervention and clinical equipment were considered symbols of dependency and disability and patients opposed their introduction. One respondent recalled how a patient had insisted that untrained personnel administer his rectal medication:

We're only allowed to assist with medication from a [medication compliance device] but we have actually helped someone with bowel evacuations ... a certain client refused to have district nurses ... he didn't like district nurses coming in his home ... felt it was like hospitalising him ... he told his carers to do it ... But we're not trained to do that ... you could cause someone some serious damage ... We've put a stop to that now. Independent coordinator in Site A (4: 1)

Another recalled how patients sometimes refused medication compliance devices and instead insisted that medication be administered from standard packaging:

We find [medication compliance devices] useful. Mix-ups happen when you don't have them ... but some clients refuse to have them ... they feel a bit simple needing this [device] with Monday, Tuesday, Wednesday and Thursday on it. They feel that it's a loss of control ... I would say that a good quarter of our clients still have their medicine in a Tupperware box in bottles that they either take themselves or want us to put out. Local authority home carer in Site B (3: 5-6)

7.1.1.6. Summary

The patient related problems that respondents identified as contributing to adverse events in domiciliary care settings are summarised in the table below. The first

column lists the identified patient problems, the second the associated difficulties and/or hazards and the third the identified remedial measures (shaded sections indicate the difficulties and/or hazards for which respondents did not identify any remedies). Factors that were perceived as enhancing patient safety included the presence of attentive family members, patient familiarity with treatment regimens and good staff-patient relationship.

Patient problem	Associated Difficulties/Hazards	Remedial Measures
<i>Condition</i>		
Depression		
Dementia	<ul style="list-style-type: none"> • Patient unable to direct their own care • Patient has a poor understanding of the purpose &/or function of prescribed medication • Patient unable to recognise failures in their own care • Patient unable to voice their concerns regarding home carer performance 	
<i>Personal</i>		
Complex needs &/or unpleasant personality	<ul style="list-style-type: none"> • Poor motivation amongst home carers to care 	
Malicious or overwrought family members	<ul style="list-style-type: none"> • Interference with medication & threat of poisoning 	<ul style="list-style-type: none"> • Provision of pharmacist filled medication compliance devices
<i>Treatment</i>		
<i>Patient choice</i>		
Poor symptom control		
Refusing symbols of dependency & disability	<ul style="list-style-type: none"> • Refusing nursing intervention • Refusing clinical equipment 	

Table 7.1: Patient problems and remedial measures identified by respondents

7.1.2. Task factors

This section explores task factors. Three contributory factors were identified. These were availability and use of protocols, task definition and decision making aids.

These are now considered.

7.1.2.1. Availability and use of protocols

Home care protocols included those related to patient confidentiality, moving and handling, equal opportunities and infection control. They also included medication policies and guidelines.

Absence of protocols

Both local authority providers and six out of eight independent sector providers supplied the researcher with copies of their medication policies. AC did not have a medication policy and BC failed to provide a copy. Sixty two percent of home carers interviewed (n= 8) did not think their employer supplied medication policies and guidelines.

Quality of information included in the protocol

The medication related policies issued by home care providers in relation to medication administration were summarised in table 6.1 (section 6.3.1). Some policies were more comprehensive than others. For example, AD (an independent sector provider in Site A) issued no guidance as to whether or not home carers were allowed to administer inhalers, controlled drugs, skin preparations, eye drops or rectal medications. Respondents did not mention any concerns relating to the quality of information included in home care medication related policies.

7.1.2.2. Task definition

Inconsistent task definition

Care plans instructed home carers to assist with medication administration and/or administer medication but they did not describe what constituent parts each task entailed. There was no consistent definition of what was actually assisting with medication and what was administering medication. Each respondent constructed his or her own definition. These included one or more of the activities listed below.

- Issuing a verbal prompt to the patient
- Handing the medication container to the patient
- Interpreting the directions on the label
- Removing container closures
- Extracting the prescribed dose from the container and administering it to the patient (for example, instilling two eye drops or handing the patient two tablets)
- Observing whether the patient swallows oral medication
- Signing the medication administration record

Box 7.1: Activities involved in assisting and/or administering medication

Inconsistent definitions between community care assessors, care managers, coordinators, home carers and district nurses created accident opportunities. For example, one respondent described an incident involving a confused older woman whose care plan instructed the home carer to assist with medication. The home carer interpreted these instructions as merely requiring her to extract the prescribed dose from the container and issue a verbal prompt. Her intervention was not enough to ensure adherence:

Sometimes carers will give the patient their medication but not observe them take it... we had a lady who the carer was visiting daily and prompting medication. She was on quite a lot of diuretics but she went into heart failure and had to be admitted to hospital. Later we found all her pills down the side of the chair. District nurse team leader in Site A (3: 10)

7.1.2.3. Decision-making aids

Home care respondents described a number of situations when they were required to make a choice between two options with the likelihood of negative events occurring. A selection of these dilemmas is listed in the table below.

Absence of decision making aids

Home care respondents complained they were not given any decision-making aids. Decision-making aids are interventions aimed at helping individuals make choices between two or more options.

Difficult decisions			
	Decision 1	Outcome 1	Outcome 2
The home carer gives the patient their medication. Ten minutes later the patient vomits. Should the home carer give an additional dose?	Yes an additional dose should be given	Might overdose the patient (medication might not have been vomited & the first dose might have been partially absorbed)	The patient might receive a sub therapeutic dose
The patient complains of pain and asks the home carer to fetch some Paracetamol from the kitchen cupboard. Paracetamol is not listed on the medication record chart. Should the home carer administer the Paracetamol?	Yes Paracetamol should be given	Might overdose the patient (they might already be taking medication that contains Paracetamol)	The patient will remain in pain
The home carer notices the patient has a rash. The patient has recently started taking antibiotics for a chest infection. Should the home carer continue to administer the antibiotics?	Yes the antibiotics should be administered	The allergic reaction might worsen	The chest infection might worsen
The patient has a medication compliance device. The coordinator tells the home carer she should load it with medication. Should the home carer load the device?	Yes the medication compliance device should be loaded	Might include medication that is unstable outside its original packaging	The patient might get muddled self administering from the original packaging and accidentally overdose

Table 7.2: Difficult decisions in home care

Home care respondents also said they needed access to a medication encyclopaedia and patient information leaflets. The absence of these meant they were unable to monitor treatment effects:

I reckon we should know what they are on and what they are for ... I reckon we should have a tablet book, a medication book. When they come in [a medication compliance device] or in the bottles they don't have no information⁷, because they could be having a side effect from their tablets and I wouldn't know. Local authority coordinator in Site B (4: 11)

7.1.2.4. Summary

The task related problems that respondents identified as contributing to adverse events in domiciliary care settings are summarised in the table below. Factors that were perceived as enhancing patient safety included commonsense and general health and/or pharmaceutical knowledge.

⁷ European legislation requires that a patient information sheet be supplied with all dispensed medication (Directive 92/27/EEC). Many medicines are dispensed in manufacturers' original packs complete with patient information leaflets. When the community pharmacist dispenses medicines into bottles or medication compliance devices, manufacturers will provide additional patient information leaflets on request. Anecdotal evidence suggests patient information sheets are rarely supplied with medication dispensed into bottles or medication compliance devices.

Task problem	Associated Difficulties/Hazards	Remedial Measures
Absence of protocols	<i>Availability and use of protocols</i>	
Activities not mentioned		
Absence of decision making aids	<i>Decision making aids</i>	<ul style="list-style-type: none"> • Provision of medication encyclopaedia & patient information leaflets
Inconsistent task definition	<i>Task definition</i>	

Table 7.3: Task problems and remedial measures identified by respondents

7.1.3. Individual (staff) factors

This section explores individual (staff) factors. Two contributory factors were identified. These were competence, knowledge and skills, and physical stressors. These are now explored.

7.1.3.1. Competence, knowledge and skills

The home care workforce is largely unqualified and formally untrained (see section 1.3.2). However, respondents identified seven important competencies, knowledge and skills in home care. These are listed below. Their effect on patient safety is now considered.

- Competence in the English language
- Ability to build a rapport with older people
- Commonsense
- General health knowledge
- Familiarity with medication related activities
- Pharmaceutical knowledge
- Assertiveness skills

Box 7.2: Important competencies, knowledge and skills in home care

Several district nurse respondents had concerns about levels of literacy amongst sections of the home care workforce:

One lady had Lactulose and we [left a note asking] the home carers to give 10 millilitres, but they said 'what is that'. Something as basic as millilitres, we had to write 'please give two teaspoons'. I'm not 100% confident our instructions are understood by home carers ... [some] can just about write two words of English.
Community staff nurse in Site A (5: 8)

Reading and writing difficulties predisposed older people to adverse events:

Quite a lot of home care staff cannot read ... well certainly can't read English. And again [it is] the assumption by nurses that everyone can read and write, but of course they can't ... Liquids can be a problem and again it's the

assumption that people can read the instruction ... like if it says a teaspoon, the difference between a teaspoon and a tablespoon if you can't read very well is not very great. Independent coordinator in Site A (1: 5)

General health knowledge, familiarity with medication related activities, pharmaceutical knowledge and assertiveness skills all contributed to patient safety. For example, assertiveness skills equipped home carers with sufficient authority to raise concerns and challenge unsafe practices:

I come from working in a nursing home. I was quite shocked to be given that responsibility because in the nursing home you're not allowed anywhere near the medication ... I found it a very big responsibility ... I've gained confidence over the years ... but I can imagine some poor person starting this job would find it a bit much really ... I feel that I've got the confidence to question something and not just accept it now. I would actually argue the point if I thought something was not safe ... I've been in the job long enough for [management] to know that I'm not causing trouble but that something is not safe for me or the client ... If I was new I might worry that they might think I'm not adequate to do the job. Local authority home carer in Site B (3: 15)

It was apparent that knowledge and skills were sometimes acquired with experience. Experience was gained working with older people and/or raising a family. One home care respondent recalled how this enabled her to identify a previously undiagnosed condition:

I've had a case recently where I've had a client with scabies and having out three doctors and a nurse to sort out what this rash was. One said it was a virus, one said it was an allergy to cheese triangles ... In the end I just wrote on the table in big letters 'SCABIES' and said [to the client] 'when the doctor comes show her that and for heavens sake ask her if it is'. Because I knew about scabies, I've seen a lot of it. Local authority home carer in Site B (3: 16)

Knowledge and skills were also acquired by way of self-directed learning. Several home care respondents said they referred to a family health encyclopaedia and

newspaper supplements. One respondent recalled how this enabled her to identify unwanted treatment effects:

We go in to a client who is blind and fill her [medication compliance device] ... I was reading in a Sunday newspaper and of course I saw the name of one of the tablets this lady was on and she'd been suffering with really bad indigestion and sickness. The write up about this medication was quite bad. The next time I saw her I was telling her about what I had read and I said 'tell your doctor about this and get off this medication' ... She went to the doctor and the doctor discontinued those tablets, he took her straight off them. Independent home carer in Site B (5: 4)

District nursing and home care respondents believed general health knowledge, familiarity with medication related activities and pharmaceutical knowledge could be improved with enhanced induction and training opportunities:

I think we ought to have medicine training. We've been asking for a while. I think we ought to have more knowledge of what we are actually giving people... say [a patient] says 'I'll have two Paracetamol tablets as well as my other tablets' ... I mean we should know what effects that could have on the other tablets... I've always been concerned about giving medication... I'm always worried about the control you can have with no training. Local authority home carer in Site B (3: 9)

7.1.3.2. Physical stressors

Respondents did not describe whether or not home care applicants underwent any health screening procedures. Nor did they say whether or not they could access occupational health services. One respondent recalled encountering an inebriated home carer. Another described an occasion when a partially sighted colleague made a dosing error:

I was going to one man and I was covering him for someone ... I was a bit confused because I was supposed to do the lunchtime medication and when I went at lunchtime, the person that was supposed to give him the breakfast medication appeared to have given the teatime medication from the [medication compliance device] instead... I remember I met the carer one day and said 'why did you give

him the [wrong] medication, because it clearly says am not pm' and she said 'I didn't have my glasses on' and I said 'that's a pretty feeble excuse'. Local authority home carer in Site A (2: 4)

7.1.3.3. Summary

The individual (staff) related problems that respondents identified as contributing to adverse events in domiciliary care settings are summarised in the table below.

Factors that were perceived as enhancing patient safety included home carer ability to build a rapport with older people, commonsense, general health knowledge, familiarity with medication related activities, pharmaceutical knowledge, and assertiveness skills. Associated factors included experience and self-directed learning.

Staff Problem	Associated Difficulties/Hazards	Remedial Measures
Difficulty reading & writing	<i>Competence (including knowledge and skills)</i>	
Alcohol misuse	<i>Physical and mental stressors</i>	
Uncorrected poor vision		

Table 7.4: Staff problems and remedial measures identified by respondents

7.1.4. Team factors

This section explores team factors. Three contributory factors were identified. These were verbal communication, written communication and seeking help. These are now considered.

7.1.4.1. Verbal communication

Factors relating to verbal communication included communication between district nursing and home care services, communication between home carers and patients, communication between domiciliary services and hospitals, communication between domiciliary services and family members, and voicing disagreements and concerns. Their effect on patient safety is now explored.

Communication between district nursing and home care services

Verbal communication between district nursing and home care services took place over the telephone and face-to-face. Formal encounters occurred when case conferences and extraordinary meetings were held. Informal encounters were those chance encounters that occurred in the home during routine patient visits or in the street whilst walking between assignments. Respondents identified a number of practical barriers to verbal communication between district nursing and home care services. These are listed below.

- Absence of contingency payments (see section 7.1.7.1) that prevented home carers attending patient case conferences
- Confusion between community care assessor, care manager and home care coordinator roles that meant district nurses did not know who to talk to (see section 7.1.7.2)
- Rationing the amount of care each patient received that encouraged district nurses not to visit the patient at the same time as the home carer in order to avoid interrupting the home carer (see section 7.1.6.2)
- Introduction of split shifts (see section 7.1.7.1) that meant home carers were not on duty when district nurses were easily contactable

Box 7.3: Practical barriers to verbal communication between domiciliary services

Failures in communication between district nursing and home care services predisposed to adverse events:

Home carers should alert us [when a patient is ill] ... Last week someone waited six days when one of our patients wasn't eating or drinking. By the time we heard it looked like she was about to die. District nurse team leader in Site A (7: 4)

Respondents identified respect as the cornerstone of effective communication. However, several home care respondents cited occasions when district nurses either belittled them or underestimated the quality of their work. An example is:

This lady is very isolated because she smokes, I mean I smoke but she SMOKES... it really is quite horrid... she is in sheltered accommodation, she goes down to the communal area and everyone scatters... I visit her once a week... I take her shopping in my car... she loves it... I do things for her in my own time... even went to blooming Woollies and brought her a Christmas tree. But one nurse said to me 'what she needs is company, you need to sit down and talk with her'. I resented that. Bloody cheek. Independent home carer in Site A (2: 9)

Several district nurse respondents acknowledged their approach sometimes offended home carers and made positive efforts to work more cooperatively:

Sometimes they probably think we're really arrogant: we just come in and tell them what to do. I know nurses do bark orders at them and it doesn't help. You've got to work very carefully with them, show them you're there to help and not boss them around. Community staff nurse in Site A (5: 9)

Communication between home carers and patients

Respondents identified high staff turnover rates (see section 7.1.6.1) as the most significant barrier to effective verbal communication between home carers and patients. High staff turnover rates prevented patients developing trusting relationships with their home carers and hindered rapport. They also meant new home carers were continually asking patients what needed to be done and where things were kept. This apparently frustrated some patients and exchanges could be unfriendly:

Patients want to be able to trust [home carers]... I hear patients saying, 'oh I have a different person everyday, I don't know what time they are coming and always new faces, they don't know what to do and I'm sick of telling people what they need to do'. Community staff nurse in Site A (8: 16)

Respondents identified low staff turnover rates as the cornerstone of effective verbal communication. Staffing continuity facilitated the development of close and trusting relationships. For example, one home care respondent visited the same man for 16 years and described how he treated her like a daughter. Other home carers invited long standing patients for Christmas lunch. These relationships enhanced patient wellbeing and improved medication adherence:

We've got a demented lady who needed to be started on hypertensive medication. We went in daily to remind her to take it but she'd refuse saying she didn't need it. She had a good rapport with her carer, so we set up [a medication compliance device] and the lady is happier when prompted by her regular home carer than by us. District nurse team leader in Site A (1: 1)

Respondents identified inadequate interpersonal skills as another barrier to verbal communication. Coordinators appraised home care applicants for evidence of their ability to build a rapport with older people at interview:

When you meet someone for the first time you either like them or you don't like them... the way they speak to you. Yes they are in a different setting when they come to interview, but someone whose natural manner is to be abrupt won't change when they are with a client... if their approach scares me what is Mrs Jones who is eighty odd sitting in her arm chair at home going to think. Independent coordinator in Site A (6: 12)

Several district nurse respondents recalled occasions when home carers demonstrated inadequate interpersonal skills. These involved home carers grunting rather than conversing. Communication was especially poor between home carers and unpopular patients (see section 7.1.1.2).

Communication between domiciliary services and hospitals

It was not unusual for patients in receipt of district nursing and home care services to be admitted to hospital. Hospital doctors altered medication regimens. Respondents

cited occasions when failure by hospital doctors to communicate patient discharge information contributed to adverse medication events. An example is:

Someone was on [a monitored dosage system] and went into hospital. We weren't told when he came home. He'd been home six days when the home carer phoned saying 'did you know Mr so and so was home because he's gone all funny, can you come and see him?' We found that his medication had been quite radically changed whilst he was in hospital but the home carer had carried on giving him medication from [the monitored dosage system] he had before he went in. Student district nurse team leader in Site A (13)

Communication between domiciliary services and family members

Family members undertook a number of medication related activities for older people living at home (see section 7.1.1.2). An example is when a family member loaded a medication compliance device from which the home carer administered the patient their medication. Several home care respondents reported communication problems between domiciliary services and family members. This was mostly in relation to written communication as family members did not keep medication administration record charts up to date and sometimes failed to inform home carers when regimens were altered.

Voicing disagreements and concerns

District nurse respondents did not hesitate to voice differences of opinion with home carers. They appeared equally motivated to report concerns regarding home carer performance. Home care respondents on the other hand avoided face-to-face disagreements with district nurses. Home care coordinators believed this was largely due to home carers feeling intimidated by district nurses. Failure to voice differences of opinion predisposed to adverse events:

The care worker was yesterday telling us about her client. The carer felt that the client had broken her hip and [she] was not prepared to move her. The district nurse comes in [to see the client] and said 'oh this is easily done', picked her up and twisted her around and the next day the client is in hospital with a broken hip. Sometimes care workers think that because of professional boundaries they are not

allowed to say [anything], something to do with authority. But I always say that where health and safety is concerned, I don't care if it was the Queen of England herself asking... I wouldn't do it if it compromised health and safety. Independent coordinator in Site B (4: 20)

7.1.4.2. Written communication

Factors related to written communication included legibility of records, adequate management plan and quality of information in the notes. Written communication included information conveyed in formal records such as care plans (appendix 2), medication administration record charts (appendix 8) and daily report sheets. The medication administration record chart was meant to be signed by the home carer to record administration. The daily report sheet was meant to contain a visit summary completed at the end of each visit by the home carer. All these documents were held together in an individual file in the home. District nursing records were held in a separate file. Written communication also included information conveyed in extemporaneous notes and memos between individual district nurses and home carers.

Legibility of records

Home care medication administration record charts were meant to be updated monthly in line with the written prescription. Home carers generally updated the charts themselves and acknowledged they were sometimes a mess. They were especially hard to decipher when the same one was used for more than one month and when medicines were discontinued part way through the month and written amendments were made to the existing chart.

Adequate management plan

Home care respondents complained that care plans were often inadequate either because specific care needs had been overlooked or because needs had changed and needed to be reviewed. Several coordinators suggested community care assessors were inclined to overlook medication related needs at assessment. Since patients were allocated care according to the activities identified as needing to be undertaken, there was insufficient time to undertake additional activities not listed on the care plan. Furthermore home carers were not insured to undertake activities not listed on

the care plan. District nurse respondents were often oblivious to these restrictions and expressed frustration when home carers refused to carry out additional activities not listed on the care plan.

Quality of information in the notes

District nurse respondents suggested detailed home care daily report summaries helped them monitor treatment effects. One respondent described how she was able to monitor the effectiveness of antidepressant therapy:

Some things are really good. Everyone has a diary in the house that the carers write in. They write down what they have done... A lot of people still just say 'washed, dressed and fine'. But there are a lot of home carers who will write 'she seemed happy' or 'she seemed low' or 'this happened'. This is much better for us in a monitoring role. District nurse team leader in Site A (4: 4)

7.1.4.3. Seeking help

Responsiveness of senior staff

Home care respondents reported that they received a mixed response when requesting assistance from district nurses and general practitioners. Requests were sometimes met with contempt. They attributed this reaction to perceived status differences:

We had a client whose health was deteriorating. But when saying that to the district nurse, the district nurse told us clearly that we were not nurses and we had got no right to form those opinions ... they looked down on us and spoke like we should stay out of it. Independent coordinator in Site A (5: 9)

They also attributed this reaction to age discrimination:

I would say that the doctors seem to be just too busy and a lot of our elderly clients feel that because of their age they're not interested in them... I've had doctors that would not come out to people who'd never call a doctor out unless they really needed it... and they basically refuse to come out. Independent coordinator in Site B (3: 8)

Home care respondents resented being made to feel like a nuisance. They would ask that their line manager (coordinator) request assistance on their behalf unless they had a good relationship with the district nurse or general practitioner and could therefore anticipate a warm reply. Familiarity between home carers and district nurses and home carers and general practitioners clearly improved communication and cooperation:

If I ring [the district nurses] they know that it is something that has got to be looked at... We've known one another on and off for about five years... they know me and they know that if I ring up for a district nurse to come then it is for a reason, they know I'm not messing around. Local authority home carer in Site B (6: 13)

7.1.4.4. Summary

The team related problems that respondents identified as contributing to adverse events in domiciliary care settings are summarised in the table below. Factors that were perceived as enhancing patient safety included respect for home carers, low staff turnover rates, detailed daily report sheets, and familiarity between home carers and district nurses.

Team Problem	Associated Difficulties/Hazards	Remedial Measures
Poor communication between domiciliary services	<p style="text-align: center;"><i>Verbal communication</i></p> <ul style="list-style-type: none"> • Limited opportunities for face-to-face contact • Limited opportunities for telephone contact • Nurses not knowing whether to liaise with community care assessors, care managers or home care coordinators • Lack of respect for home carers • Absence of trusting relationships • Inadequate interpersonal skills • Poor communication of patient discharge information 	
Poor communication between home carers & patients		
Poor communication between domiciliary services & hospitals		
Poor communication between domiciliary services & family members		
Voicing disagreements & concerns	<ul style="list-style-type: none"> • Home carers feeling intimidated by district nurses 	
Illegible medication administration record charts	<i>Written communication</i>	
Inadequate patient care plan	<ul style="list-style-type: none"> • Insufficient time to undertake activities not listed on the care plan • Home carers uninsured to undertake activities not listed on the care plan 	
Inappropriate response to home carers' requests for assistance	<p style="text-align: center;"><i>Seeking help</i></p> <ul style="list-style-type: none"> • Perceived status differences • Age discrimination 	<ul style="list-style-type: none"> • Home care coordinators asked to liaise with district nurses & general practitioners

Table 7.5: Team problems and remedial measures identified by respondents

7.1.5. Work environment factors

This section explores work environment factors. Seven contributory factors were identified. These were building and design, environment (home), environment (local), equipment and supplies, staffing, training, and workload/hours of work. These are now considered.

7.1.5.1. Building and design

Ease of access

Homes are private spaces and were defended against trespassers. District nursing and home care services had to negotiate access to private space. Respondents described occasions when physically frail patients would not hear the doorbell or would struggle to open the door. They also described occasions when patients did not recognise an unfamiliar home carer and denied them access.

Security concerns meant that patients were reluctant to supply keys to district nursing and home care services. At the same time, district nursing and home care services were reluctant to take responsibility for key holding. Failure to gain entry meant medication doses were missed and ancillary non-pharmacological support was difficult to sustain:

We had a problem... the gentleman was an insulin dependent diabetic. The district nurse went in twice a day to give him insulin. Carers were meant to visit and cook his meals. His blood sugar levels became unstable and we noticed the carers had not visited. They hadn't been and he would try and feed himself, which involved opening a can of tinned rice with a hammer and chisel. He would just eat tinned rice and his blood sugars would be incredibly high. We phoned the agency and they said he wouldn't open the door to their staff. District nurse team leader in the community health trust in Site B (2: 15)

District nurse respondents complained that home carers were not motivated to gain access. For example, they claimed that carers were not persuasive when talking to patients on the doorstep or did not give patients (especially unpopular patients (see section 7.1.1.2)) sufficient time to reach the door.

Attempts to improve access included the provision of key safes. Key safes are small units for the safe storage of keys. They are mounted on an outside wall. Authorised personnel can access the unit using a digital combination.

7.1.5.2. Environment (home)

Homes are domestic not clinical settings. Domestic settings were not always conducive to safe medication management. Their effect on patient safety is now considered.

Housekeeping

District nursing and home care respondents sometimes worked in unclean and untidy homes. They described negotiating their way around amassed possessions and their feet sticking to dirty floor surfaces. Medication was difficult to locate and medication belonging to one patient was difficult to distinguish from medication belonging to another. The following extract demonstrates how poor housekeeping predisposed to adverse events:

We went into a lady and her house was a mess ... there was great consternation that we were supposed to be prompting medication but we couldn't find any and there was a huge search and they found a bottle of medication ... we took it to the pharmacist ... and the pharmacist said 'oh no that is for the dog'.

Local authority coordinator in Site B (1: 11)

Insecure facilities

Medication storage facilities were often improvised using physical components of the home such as saucers, empty ice cream containers and plastic bags. These were insecure and medication was vulnerable to diversion and misuse. One respondent recalled how a patient intentionally overdosed using medication he had put aside. Attempts to improve security included the provision of locked strong boxes:

For one person ... she's totally dependent for every activity of daily living ... we had medication go missing from visitors that go in to her ... Diazepam, Temazepam and DF118s ... visitors were helping themselves ... we had a week when she didn't have any medication because the GP refused to give her any more, saying

'no you've already had your prescription for this month'... since they were taken we've got a box on the wall that has a key and we store the drugs in that now. Local authority coordinator in Site B (4: 11)

7.1.5.3. Environment (local)

District nurses and home carers must navigate public space outside the home. They travel between assignments and undertake everyday activities such as shopping, paying bills and collecting prescriptions. The local environment possessed certain features that affected the delivery of care.

Personal safety

Fear of street robbery in urban areas meant that some home carers were unwilling to deliver or return unused medication to the chemist for safe disposal. In some areas special measures had to be introduced to ensure the safe transportation of medication:

A lot of chemists will deliver [medication compliance devices] so carers don't have to walk the streets carrying boxes of tablets, same thing when they have to collect pensions and carry money, they are frightened of getting mugged, especially in this area. Community staff nurse in Site A (5: 1)

Difficulty travelling between assignments

Travelling difficulties included high mileage, extended travelling time, and parking charges (see section 7.1.7.1). They also included inclement weather and congested roads. For example, one respondent described how nurses in rural areas had to ask farmers with tractors to take them to otherwise inaccessible patients after heavy snowfall. Another described how a nearby international sporting event prevented them accessing certain villages and described how nurses had to set up temporary clinics in church halls or houses on the fringes of besieged villages during these periods.

7.1.5.4. Equipment and supplies

There is a range of medication related equipment/supplies required in domiciliary care settings. Respondents suggested these included medication reminder devices, marked dosing cups for measuring liquid medication, machines to nebulise

medicines for long term chest conditions, protective gloves to apply potent creams and medication reference material. The effect that lack of supplies (unavailability) and poorly designed equipment (functionality) had on patient safety is now considered.

(Un)availability

Protective gloves were a source of contention. Home carers were provided with plastic gloves and were expected to carry them to each assignment but not leave them with patients. District nurses were also provided with gloves but usually left them with patients and only carried them as a contingency. Coordinators said district nurses often accused them of providing insufficient gloves and accused home carers of taking those put aside for nursing activities. Coordinators denied a problem with supply and said home carers only used nursing gloves when they forgot to carry their own. Despite these claims the provision of gloves caused friction and hostility between frontline workers. Home carers who forgot their gloves had to apply creams and ointments without protection.

Functionality

Respondents questioned the functionality of some medication related equipment and in particular the daily dose medication reminder devices. These are plastic trays divided into days of the week with sliding lids covering the four daily dosing times of morning, noon, evening and bedtime. Respondents reported incidents when the content of these devices had been disturbed or tampered with. The preferred medication compliance devices were the sealed monitored dosage systems:

We had a gentleman with a [daily dose reminder device]. His wife used to give him his medication, but I actually looked at her opening [the daily dose reminder device] and she'd tip it up and the whole days would fall out. She's managing the [monitored dosage system] much better, all she has to do is pop them out. Community staff nurse in the community health trust in Site B (1: 1)

Monitored dosage systems differ from daily dose reminder devices in that medication is sealed in foil blister packaging and the system can only be assembled in a

registered pharmacy premises and filled under the supervision of a pharmacist. A broken seal alerts the carer to the possibility that the system has been disturbed:

[Monitored dosage systems] have helped. When we were filling [daily dose reminder devices] and expecting home carers to give from them, patients would sometimes mess them up and the carer would think 'I wonder if this is right'. I think they feel more comfortable because [the monitored dosage systems] are sealed.

Community staff nurse in Site A (5: 10)

Although monitored dosage systems were the preferred device, when treatment regimens were altered there could be a delay executing the new prescription because replacements had to be arranged with the chemist:

The only problem I find with [monitored dosage systems] is that if the GP visits after the system has been set up and say he stops the Frusemide and starts something else, that medication in the system has to be wasted and a new system started and that might take several days. District nurse team leader in the community health trust in Site B (5: 7)

7.1.5.5. Staffing

Interruptions in staffing continuity

Recruitment and retention difficulties contributed to interruptions in staffing continuity (see section 7.1.6.1). Respondents reported that it was not uncommon for more than one home care provider to visit an individual patient. Even when one provider was responsible for the entire care package, it was not uncommon for home carers to differ from day to day or week to week. Adverse medication events were sometimes attributed to interruptions in staffing continuity:

A lot of carers vary from day to day. We had one lady with a [medication compliance device]. Different carers were turning up... and we found that maybe tablets from the previous day would still be there... we would go in on a Wednesday and the medication from Tuesday would still be there. We had to increase our visits

and go in daily until she had a review and she started having the same carer everyday. Community staff nurse in Site A (8: 3)

Adverse events that involved new recruits or peripatetic home carers were reported to be the consequence of inadequate knowledge of the home environment (including where medication was stored) and inadequate knowledge of the patient (including their condition, prescription and temperament). New recruits and peripatetic home carers were reliant on care plans and/or patients themselves for instructions, yet care plans were sometimes out of date (see section 7.1.4.2) and patients were sometimes unable to direct their own care:

I've found that if the patient isn't compos mentis enough to say to the weekend agency carer 'don't forget my tablets' they won't get given, despite the fact that it's written in the care plan. Community staff nurse in Site A (7: 11)

Staffing continuity on the other hand improved patient safety. For example, it facilitated the development of trusting relationships between home carers and patients (see section 7.1.4.1). It also allowed home carers to build up detailed individual pictures describing each patient over time. One respondent explained how this mental picture helped her to recognise poor medication adherence:

I see her everyday except weekends... I've known her for three years... I know when she is not taking her tablets... There is a difference in everything... she will not want to have a wash and the house will be dirty. Independent home carer in Site A (3: 3)

Another described how this mental picture enabled the identification of a potential dosing error:

Once we had a lady whose son loaded [a medication compliance device] and it was just that it was the normal carer was on that day, which was lucky, and she said 'oh there's two of these little red tablets in there and she normally only has one'... the son had made a mistake... Now that was lucky because it was the normal

carer, had she been on holiday and it was a relief carer she probably would not have noticed that. Independent coordinator in Site B (2: 5)

Staffing continuity was largely dependent on the terms and conditions of employment (see section 7.1.7.1) but home care respondents believed supervision and job satisfaction were also important because home carers who enjoyed their work and who felt valued and supported by management stayed in post longer. An example is:

I've been in [this job] for 16 years... I never thought I was the sort of person to do this job because I don't like mess or anything. My mother said 'oh you'll never stick that'. But I love every minute of it... I feel satisfaction when I go home that I've helped as much as I can. Local authority home carer in Site B (4: 15)

7.1.5.6. Training

Some home care respondents had not been given any medication related training. Others complained the training provided was insufficient to meet the demands made upon them. This section explores what effect training had on patient safety.

Provision of induction training

According to home care coordinators the purpose of induction programmes was to familiarise recruits with the policies, practices and procedures of the organisation and ensure they possessed the skills required to meet patient needs. There were three main elements. These included opportunities to read and work through staff handbooks, accompany experienced home carers to visit patients, and attend mandatory training (including manual handling and medication related training). According to district nurse respondents many home carers had not completed a full induction programme (that is the programme was inadequate or elements were not available until several weeks after recruits had started work):

Patients complain that carers don't know how to handle them, how to move them, how to get them dressed, the basics and it sounds like it's very young people who have not had a proper induction. District nurse team leader in the community care trust in Site B (2: 11)

Inadequate or incomplete induction programmes predisposed to adverse events. For example, one respondent recalled how a new home care recruit did not know how to remove doses from a medication compliance device:

We did have an incident where a home carer gave a tablet from [the medication compliance device] at the wrong time. The patient had twice daily medication and home carers visit three times a day. The carer went in at two o'clock and gave the evening medication. [The medication compliance devices] are quite straightforward and if the carer has training there shouldn't be a problem. But it was a new carer; she hadn't been trained. Community staff nurse in Site A (1: 6)

Provision of refresher training

Few organisations in the present study provided medication refresher training. Refresher training was thought to benefit those who undertook medication related activities on an infrequent or unpredictable basis:

I don't think the training is good enough... I haven't had training for over 12 months and because I don't deal with medication a lot I find it easy to forget what I've learnt... Two weeks ago I had to give eye drops but couldn't remember the last time I'd given them and had to think really carefully about what I was doing... You can feel out of touch if you haven't done something for a long time. Local authority home carer in Site A (1: 1)

Refresher training was also thought to help update carers as new innovations and policies were introduced:

They have had training on medication [but that was] before they were administering from [monitored dosage systems]... they need medication training again now because of the introduction of [these systems]... I did a quality check recently and found the carer didn't have a clue how they worked. Local authority coordinator in Site A (2: 1)

7.1.5.7. Workload/Hours of work

Factors related to workload/hours of work included unrealistic scheduling and split shifts. Their effect on patient safety is now explored.

Unrealistic scheduling

Respondents suggested that home care coordinators in the independent sector sometimes failed to consider travelling time when scheduling home care appointments. As a result visits were too early or too late or too rushed. In the following extract an adverse medication event is attributed to a home carer visiting earlier than laid down in the care plan:

I had one patient who had a [medication compliance device] who did need prompting and we found what was happening was that the carer was going in too early, earlier than they should have been going in, the patient was asleep, so they were making a cup of tea, leaving a cup of tea on the side, not prompting the medication and leaving before the patient had woken up. District nurse team leader in Site A (4: 10)

Several district nurse respondents thought that home carers scheduled their own visits and assumed that those who were rushed or those who visited patients outside the agreed times were engaged in corruption to maximise their income.

Split shifts

Shift patterns reportedly affected recruitment and retention (see section 7.1.6.1). They also affected communication between home carers and district nurses because most split shifts finished immediately after lunch which was precisely the time when contacting district nurses was easiest because they were in the office, undertaking administrative activities and receiving telephone calls before leaving on afternoon visits.

7.1.5.8. Summary

The work environment related factors that respondents identified as contributing to adverse events in domiciliary care settings are summarised in the table below. The only factor that was perceived as enhancing patient safety was staffing continuity.

Work Environment Problem	Associated Difficulties/Hazards	Remedial Measures
<i>Building and design</i>		
Difficulty entering patient property	<ul style="list-style-type: none"> Defended personal territory 	<ul style="list-style-type: none"> Key safe installation
<i>Environment (home)</i>		
Poor housekeeping	<ul style="list-style-type: none"> Inability to locate medication Difficulty distinguishing medication belonging to one person from medication belonging to another 	
Insecure medication storage facilities	<ul style="list-style-type: none"> Hoarding medication Diversion by visitors 	<ul style="list-style-type: none"> Medication strong boxes
<i>Environment (local)</i>		
Personal safety problems	<ul style="list-style-type: none"> Difficulty collecting & returning unused medication to the community chemist 	<ul style="list-style-type: none"> Pharmacy delivery services
Difficulty travelling between assignments	<ul style="list-style-type: none"> Problems commissioning care Hurried visits Wrong time visits 	
<i>Equipment/supplies</i>		
Failure to provide protective gloves	<ul style="list-style-type: none"> Friction & hostility between district nurses & home carers 	
Difficulty identifying tampered with doses in medication compliance devices	<ul style="list-style-type: none"> Administration errors 	<ul style="list-style-type: none"> Provision of monitored dosage devices
<i>Staffing</i>		
Interruptions in staffing continuity	<ul style="list-style-type: none"> Inadequate knowledge of the home Inadequate knowledge of the patient Poor communication and collaboration between district nurses and home carers 	<ul style="list-style-type: none"> Valuing and supporting home carers
<i>Education and training</i>		
Inadequate induction training	<ul style="list-style-type: none"> Inadequate skills 	<ul style="list-style-type: none"> Comprehensive induction training
Inadequate medication refresher training	<ul style="list-style-type: none"> Inadequate skills 	<ul style="list-style-type: none"> Annual medication refresher training

Table 7.6: Work environment problems and remedial measures identified by respondents (continued on following page)

Work environment problem	Associated Difficulties/Hazards	Remedial Measures
Unrealistic scheduling	<ul style="list-style-type: none"> • Hurried visits • Wrong time visits 	
Split shifts	<ul style="list-style-type: none"> • Recruitment and retention difficulties • Poor communication between district nurses and home carers 	

Table 7.6: Work environment problems and remedial measures identified by respondents (continued from previous page)

7.1.6. Organisation and management factors

This section explores organisation and management factors. Two contributory factors were identified. These were policy standards and goals, and financial resources and constraints. These are now considered.

7.1.6.1. Policy, standards and goals

Policy, standards and goals in district nursing and home care services included those related to human resources, risk management, quality improvement and supervision. Their effect on patient safety is now explored.

Human resources

The local authority and independent sectors needed sufficient human resources to provide an estimated 14220 contact hours to 1360 households per week in Site A and 23380 contact hours to 4400 households per week in Site B (DH 2000e). Difficulties were encountered recruiting and retaining a sufficiency of home carers. Respondents attributed these difficulties to low wages, competition from local supermarkets, lone working, the absence of guaranteed hours of work and the introduction of split shifts.

Respondents described how recruitment and retention difficulties meant few providers had sufficient capacity to supply all the required hours for an individual patient and the care package had to be split between two or more providers:

For the last six months we've been really struggling to get care... It gets a bit of a nightmare because not one agency can do the whole package. I've got one woman that has three different agencies that go into her because no one can do all of it. Agencies can't find the carers. Community care assessor in Site B (2: 2)

This created interruption in continuity that adversely affected the development of trusting relationships between home carers and patients (see section 7.1.4.1). Even when one provider was responsible for the entire care package high staff turnover rates created similar difficulties.

Although providers experienced clear difficulties attracting home carers most coordinators were at pains to state their recruitment and selection procedures had

been neither diluted nor compromised. Typically recruitment relied on newspaper advertisements, word of mouth recommendations and applicants sent from Jobcentres. Coordinators described how they had had to become more inventive in their attempts to make vacancies known. This included advertising in supermarkets, nursing colleges and even in circulars for ex army personnel and their families. Despite their attempts to attract a large volume of candidates many coordinators expressed concern about the suitability and acceptability of many of those who did apply:

We advertise in [five local papers]... We had an advert out in October, we didn't get a very good response [or] a very good calibre of candidate and we only ended up taking on one person... We looked at about 25 application forms and out of those we only picked five and out of those only four people turned up. Independent coordinator in Site A (5: 4)

Most screened applicants for competence in the English language, commonsense, interpersonal skills and evidence of a caring attitude but one coordinator admitted that she was so desperate she would employ anybody as long as they could read and write and provide three references. Not every provider requested an enhanced criminal record certificate (or police check). One home care respondent recalled how she had once been recruited over the telephone and had never met (in the three months that she was working for them) a coordinator or anyone else from the organisation.

Risk management

It was evident that although the community health trusts and both social service departments had incident reporting systems in place, none of the numerous medication errors described by respondents were reported using these systems. The ultimate goal of reporting adverse incidents is to identify where and how adverse incidents occur, so that organisations can develop and deploy quality initiatives to reduce the types of adverse incidents identified. District nursing and home care respondents suggested that the only place adverse incidents were recorded was patient held notes. Failure to collate information about adverse events meant no

systematic organisational learning could take place. The primary care trust did not even have an incident reporting system in place.

Quality improvement

Internal quality assurance procedures were in place to monitor and ensure the quality of home care provided. All home care providers reportedly carried out three monthly quality assurance visits undertaken by coordinators. Their purpose was to measure patient satisfaction. They were often unannounced and timed to coincide with home care visits, which allowed them not only to elicit patient opinions on aspects of home care provision but also to observe carers routinely going about their work.

Coordinators described how a number of accident opportunities were identified during these inspections:

I had a review with this client and found that the carers were doing bowel evacuations for him; we didn't know in the office that this was going on until I visited. Independent coordinator in Site A (4: 1)

Supervision

Supervision systems were in place in most home care organisations. Supervision refers to on-going support for home carers. It was usually provided on a group basis in monthly sessions facilitated by a coordinator. The purpose of these sessions was to formally provide support and assistance, and identify development and training needs. Home care respondents suggested there were few opportunities for formal one-to-one discussion between home carers and their line managers. Several district nurse respondents were concerned that although home care work was demanding and often stressful, home carers did not see their coordinator on a day-to-day or even weekly basis. They believed existing arrangements were inadequate.

7.1.6.2. Financial resources and constraints

Rationing services

Patients were allocated standardised amounts of home care in blocks of 15 minutes according to the activities to be undertaken. Respondents complained that due to financial difficulties social service departments had reduced the duration of patient visits:

We are very strapped for cash so they are cracking down on what is being allocated at the moment, so perhaps in the past you have an hour for a bath but maybe now you might just get 45 minutes. Community care assessor in Site B (2: 7)

Short visits and tight margins created difficulties when necessary activities were not listed on the care plan (see section 7.1.4.2). For example, there was no slack time in home care programmes to respond to unforeseen events or participate in ancillary activities:

Social services are cutting back so much. Fifteen minutes for somebody to sit on the commode... giving times for tasks to be done. Getting somebody up, washed and dressed and breakfast might be half an hour. But the little things that need to be done, like collecting a prescription once a month, that is not always included on the care plan and that is where the breakdown is some of the time by the medication not being there. If something is not on the care plan we don't do it. Local Authority coordinator in Site A (S: 3)

Some respondents believed that visits were hurried and home carers had insufficient time to meet individual patient needs. For example, patients were commonly allocated 15 minutes for assistance with toileting but those who were constipated or those who had impaired mobility were likely to require longer. A number of district nurse respondents recognised these difficulties and avoided visiting patients at the times carers were scheduled to attend because they did not want to cause interruptions or delays. A negative consequence of this was that there were fewer opportunities for face-to-face contact between district nursing and home care services:

There's one chap that both the district nurse and home carer see. They go in at 08:30. We try and avoid that time, not because I don't want to see them because I would like more communication with them, but you're getting in their way. They've got limited time and about half an hour to do goodness knows what. District nurse team leader in Site B (3: 21)

7.1.6.3. Summary

The organisation and management related factors that respondents identified as contributing to adverse events in domiciliary care settings are summarised in the table below. The only factor that was perceived as enhancing patient safety was quality assurance visits.

Organisation/Management Problem	Associated Difficulties/Hazards	Remedial Measures
Recruitment and retention difficulties	<p style="text-align: center;"><i>Policy, standards and goals</i></p> <ul style="list-style-type: none"> • Problems commissioning care • Use of more than one provider to care for an individual patient • Interruptions in continuity • Poor communication & collaboration between home carers & district nurses • Absence of trusting relationships between home carers & patients • Unsuitable applicants 	<ul style="list-style-type: none"> • Inventive advertising
Failure to report adverse events	<ul style="list-style-type: none"> • No systematic organisational learning from adverse events 	
Inadequate supervision	<ul style="list-style-type: none"> • Poor ongoing support for home carers 	
Short visits	<i>Financial resources and constraints</i>	
	<ul style="list-style-type: none"> • No slack time in home care programmes • Hurried visits 	
	<ul style="list-style-type: none"> • Poor communication between home carers & district nurses 	

Table 7.7: Organisation and management problems and remedial measures identified by respondents

7.1.7. Institutional context

This section explores institutional factors. Two contributory factors were identified. These were economic context and links with external organisations. These are now considered.

7.1.7.1. Economic context

Factors related to economic context included spot purchasing, travel payments, contingency payments, low wages and split shifts. Their effect on patient safety is now explored.

Spot purchasing

Community care assessors secured the delivery of care services by purchasing and contracting care from providers in the local authority and independent sectors. Home care services were arranged by block contracts with the local authority sector and spot contracts with the independent sector.

Spot purchasing gave independent sector providers no guarantee of purchase in advance. Uncertainty made business and workforce planning difficult. Coordinators described how the variation in workload from week to week prevented them from providing staff with guaranteed hours. The absence of guaranteed hours meant there were high levels of workforce mobility in the independent sector (and consequently poor continuity of care) as carers sought better hours and moved between providers. The absence of guaranteed hours also meant carers in the independent sector were able to pick and choose which patients they would and would not visit. Few wanted to visit unpleasant or demanding patients:

Because staff don't have specific contracted hours of employment they can choose who they will and won't go into. If you've got a difficult client you might get somebody to go in once or twice but then they will say 'I'm not going back in there' and there is not a lot you can do about it. Independent coordinator in Site A (1: 10)

Independent providers were sometimes unable to sustain provision for unpopular patients and the local authority sector was required to take over. Several respondents suggested independent providers were burdening the local authority sector with high

cost patients and 'cream skimming' patients with lower costs. There was a clear preference amongst independent sector coordinators for block contracts that gave business security and guaranteed hours. A number of providers described how they had unsuccessfully tendered for block contracts.

Travel payments

Travel costs were not included in the price paid by social services departments under spot contracting arrangements. Home carers walked or drove between assignments. Respondents estimated that each carer visited approximately five patients every morning. The refusal of social services departments to meet travel costs (time and petrol) meant some independent providers had withdrawn from visiting patients living in remote or outlying locations. Subsequently community care assessors struggled to commission care from the independent sector when visits involved either high mileage or extended travelling time. Patients living in remote or outlying locations were often visited by the local authority sector. Once again respondents suggested this was a form of 'cream skimming' on the part of the independent sector.

Independent sector providers who visited patients in remote or outlying locations often transferred the associated costs to carers and patients. They did this by way of unrealistic scheduling. Home carers described how the time it took them to travel between assignments was not factored into their programmes. For example, they would be scheduled to visit Patient A between 08:00 – 09:00, Patient B between 09:00 – 10:00 and Patient C between 10:00 – 11:00 etc. The home carer had to choose between visiting her first patient earlier than scheduled and in her own leisure time in order to ensure she reached her next patient at the scheduled time, shorten the duration of each visit in order to ensure she reached each patient at the scheduled time, or maintain the duration of each visit but fail to visit at the scheduled time and finish in her own leisure time. This meant that visits were sometimes hurried. It also meant that medication was given at the wrong time.

Contingency payments

Contingency costs were not included in the price paid by social services departments to independent sector providers. The absence of contingency payments created difficulties when activities were not listed on the care plan (see section 7.1.4.2).

There was no slack time in home care programmes. Home carers struggled when patients needed longer visits for unscheduled activities. An example is when they were required to provide bereavement support following an unexpected death or collect prescriptions for acute infections. They were also unable to participate in ancillary activities such as attending patient case conferences.

Several district nurse respondents appeared unaware that there was no slack time in home care programmes and expressed frustration when home carers refused to carry out miscellaneous activities not listed on the care plan. One respondent recalled an occasion when she had left a home carer a note requesting that she collect some medication from the local chemist and expressed her surprise when she found a week later that the home carer had written her a reply saying she did not have time to go to the chemist and that the nurse should collect the medication herself.

The absence of contingency payments also created difficulties when patients lived in controlled parking zones. Home carers were not given parking permits.

Respondents described the difficulties community care assessors experienced arranging packages of care for patients living controlled parking zones. Providers who visited patients in these areas transferred the associated costs to home carers. This meant that visits were often hurried to minimise parking costs.

Low wages

Pay rates quoted by independent sector home care providers in the present study varied between £4.75 and £6.25 per hour with enhancements for unsociable hours. Attracting workers into caring was difficult. The availability of applicants was influenced by local labour markets. Respondents believed these were buoyant and described how the retail and leisure industries offered better paid opportunities and were a source of stiff competition:

Traditionally we've been able to recruit by word of mouth [but] recently we've had to advertise. The influx of the big supermarkets has had a huge impact on the workforce in the communities. We cannot compete with the likes of Tesco and Debenhams that are paying £6 and £7 an hour. Independent coordinator in Site B (4: 5)

District nurse respondents claimed that a number of home carers were registering with more than one independent sector provider in order to increase the number of patients they visited (including scheduling two patients at the same time) and maximise their income. All of the home carers interviewed in the present study said that they were registered with only one organisation.

Split shifts

The majority of home care visits are scheduled between 08:00 – 10:00, 12:00 – 14:00 and 17:00 – 20:00. Most providers in the present study had introduced split shifts (that is full or part shifts divided into two or more distinct parts with a gap of several hours in between). They were introduced to minimise costs and ensure that the hours worked by staff matched the requirements of the service. New recruits and established members of staff viewed them unfavourably:

Some of the new home carers haven't lasted five minutes... one said she enjoyed the job but didn't like all the in and out all the time. Because you get the morning bit then you get the lull before lunch then another lull before teatime, so you're not working nine to five. You're sort of working from 07:00 – 10:00 and then from 12:00 – 14:00. Independent coordinator in Site B (1: 11)

Split shifts also meant that home carers were not available to undertake unscheduled activities (such as collecting prescriptions and attending case conferences) in what used to be their quiet time (between 14:00 – 17:00). Although district nurse respondents knew split shifts had been introduced (and were sympathetic regarding their impact on family life) they did not realise they impacted on the amount of time home carers had to undertake unscheduled activities.

7.1.7.2. Links with external organisations

The provision of health and social care in domiciliary care settings is an inter-organisational activity that includes local authorities, independent sector providers and district nursing services. District nurse respondents reported that prior to the community care reforms (that is when local authorities were the monopoly providers of home care services) they were aligned to just one local authority home care team.

The home care team leader would assess patient needs, provide care and monitor home carer performance. Local authorities are now responsible for assessing needs, designing care packages and securing the delivery of home care from a mixed economy of providers. These activities are undertaken by community care assessors and care managers. Community care assessors and care managers are not responsible for care provision or monitoring home carer performance. These activities are undertaken by a home care coordinator.

Confusion between care assessor and home care coordinator roles

District nurse respondents complained that the introduction of the community care reforms adversely affected communication and collaboration with home care teams. The separation of the assessment, provision and monitoring functions of social services departments caused confusion. They were unsure whether to ask the community care assessor, the care manager or the home care coordinator to increase the care package when there was a change in the patient's functional capacity or social circumstances. They were also unsure who they should approach when care failed to meet agreed standards. Some tried to bypass coordinators altogether and only liaised with community care assessors and care managers, and were often frustrated when they were unable to resolve operational difficulties:

Perhaps I'm not fully au fait with what social services care managers actually do. If they haven't got any carers, what are they managing? The way I understood it was that they were still monitoring the agencies, but when you phone up to make a complaint, you just get passed on to somebody else. District nurse team leader in Site A (7: 8)

Proliferation of care providers

The proliferation of care providers meant few district nurse respondents had close working relationships with independent sector coordinators. They bemoaned the introduction of the community care reforms which ended their alignment to just one local authority home care team with whom they had been able to liaise about all patients in receipt of district nursing and home care services:

Our relationship with the home care service is dwindling. It used to be fantastic when we worked coterminous with the neighbourhood offices. We used to pop in and also had joint meetings. It was 1000 percent better. The home care organisers are just faceless now, we don't meet them, we don't see them, they are just voices on the phone. Now it feels totally fragmented. Community staff nurse in Site A (5: 14)

Use of more than one provider to care for an individual patient

District nurse respondents believed communication and collaboration was especially problematic when one home care provider had insufficient capacity to supply all the required hours and the patient received care from two or more providers.

7.1.7.3. Summary

The institutional related factors that respondents identified as contributing to adverse events in domiciliary settings are summarised in the table below. Respondents did not identify any factors as enhancing patient safety.

Institutional Problem	Associated Difficulties/Hazards	Remedial Measures
<i>Economic context</i>		
Spot purchasing	<ul style="list-style-type: none"> • Business & workforce planning difficulties • Problems commissioning care • Poor retention 	
Absence of travel payments	<ul style="list-style-type: none"> • Problems commissioning care • Hurried visits • Wrong time visits 	
Absence of contingency payments	<ul style="list-style-type: none"> • No slack time in home carer programmes • Difficulty responding to unanticipated needs • Problems commissioning care 	
Low wages	<ul style="list-style-type: none"> • Poor recruitment 	
Split shifts	<ul style="list-style-type: none"> • Poor recruitment & retention • No quiet time in home carer programmes 	
<i>Links with external organisations</i>		
Proliferation of care providers	<ul style="list-style-type: none"> • Poor communication & collaboration between district nursing & home care services 	
Delineation between care manager & home care coordinator roles	<ul style="list-style-type: none"> • Poor communication & collaboration between district nursing & home care services 	
Use of more than one provider to care for an individual patient	<ul style="list-style-type: none"> • Poor communication & collaboration between district nursing & home care services 	

Table 7.8: Institutional problems and remedial measures identified by respondents

7.2. Variations between sites and home care sectors

This section examines how far the factors that respondents identified as predisposing to adverse events, and the factors that were perceived as enhancing patient safety were generic to both study sites and both home care sectors.

7.2.1. Absence of travel and contingency payments

Providers in both sites experienced travel and contingency difficulties. The refusal of social services departments to meet travel costs was especially problematic in Site B where patients were dispersed across a large geographical area. One independent coordinator estimated her carers each averaged 600 miles each week. The local authority sector was better able to absorb travel and contingency costs because they were block purchased:

It's because we are blocked purchased, if it was spot purchasing it would be different, we would have to go back to the care manager and say 'we [need more time]'... Because it is bulk purchased we can go and queue in the post office for 15 minutes when the [client says] 'I've got this parcel that I need to post to my daughter in South Africa'. Local authority coordinator in Site B (3: 3)

Block purchasing meant they were paid for a pre determined number of hours whether those hours were taken up or not. Since a number of hours were never taken up, they had the capacity to allocate travelling time and respond more flexibly to needs not listed on the care plan. Block purchasing also meant that low cost patients could cross subsidise high cost patients.

7.2.2. Split shifts

Split shifts had not been introduced in the local authority home care department in Site B. Local authority home care was also block purchased. This meant home carers had quiet time in which they could undertake activities not listed in the care plan.

7.2.3. Recruitment and retention difficulties

Providers in both sites and both sectors experienced recruitment and retention difficulties. Recruitment was especially problematic in Site B where there were low unemployment rates and stiff competition from the retail and leisure industries. One respondent suggested supermarket work was less stressful and better paid than care work. Recruitment was also more problematic in the independent sector where terms and conditions of employment were less generous than the local authority sector. The absence of guaranteed hours also meant there were high levels of workforce mobility in the independent sector as carers sought better hours and moved between providers.

7.2.4. Access difficulties

Access was less problematic in Site B where the county council had introduced an initiative whereby key safes were fitted for physically frail and/or cognitively impaired people in receipt of home care. The provision of key safes made it easier to access otherwise difficult to access patients. Key safes were not used in Site A. The nature of these devices perhaps makes them unsuitable for use in densely populated areas because to prevent security breaches they must be fitted to low visibility aspects of exterior walls (for example, behind shrubs or a water butt). There are few properties in Site A that could effectively conceal a key safe.

7.2.5. Daily dose reminder devices

Respondents in both study sites described occasions when the contents of daily dose reminder devices had been disturbed or tampered with. Home carers in Site A infrequently administered medication from these devices because the health authority had introduced an initiative whereby pharmacists were remunerated for providing monitored dosage systems to older people in receipt of home care. Patients needing monitored dosage systems in Site B were asked to pay £2.50 each week. Many refused which meant that district nurses and family members had to load the daily dose reminder devices instead.

7.2.6. Inadequate training

Local authority home carers were considered more highly trained than independent sector home carers:

In house home carers seem to have more training. They seem more on the ball and more caring and interested in the clients. Whereas the agency ones, just sort of grunt, push a mop across the floor and leave again. Community nurse in Site A (1: 5)

Respondents attributed this to better workforce planning (facilitated by guarantees of purchase in advance and good retention rates).

7.2.7. Communication between carers, nurses and patients

Communication was better in rural areas because home carers, district nurses and patients lived in the same neighbourhoods and were well acquainted with one another. District nurses and patients were least well acquainted with home carers in the independent sector. This was because the independent sector experienced relatively high staff turnover rates that meant there were fewer opportunities for relationships to develop over time.

7.2.8. English language difficulties

Language difficulties were specific to Site A where home carers were recruited from a multicultural community where a diversity of languages were spoken.

7.2.9. Social and family circumstances

Attentive family members were in greater evidence in Site B where fewer older people lived alone. One district nurse respondent had worked in inner London prior to her present appointment and contrasted the number of single occupancy households:

It was a big shock to find that most of my older patients in this area lived with someone. I used to work in [inner London] and so many people were single. Here they always have somebody to let you in. In London ... we'd find them still sitting in

their chair morning to night. District nurse team leader in the community health trust in Site B (2: 8-9)

7.3. Factors expected to predispose to adverse events

This section compares the findings with the factors identified in earlier chapters as likely to predispose to adverse events when responsibility for medication related activities is transferred from district nursing to home care services. The factors expected to predispose to adverse events are listed below.

- | | |
|---|--|
| <ul style="list-style-type: none">• High patient dependency• Dementia• Depression• Different professional identities• Inadequate knowledge of the patient• Lack of patient review• Poorly designed equipment• Legibility of records• Inadequate storage facilities• Absent patient information• Inadequate training• Excessive workload• Unclear definitions of care• Poor patient information sharing• Unavailability of policies and procedures• Proliferation of providers• Separation of social services functions• Financial restraints• No inter service supervision mechanisms• Codified and demarcated task splitting• Split home care packages• Absence of home care regulation• Patient health beliefs• Social isolation | <ul style="list-style-type: none">• Poor drug handling• Preventative medication• Regimen complexity• Treatment side effects• Treatment ineffectiveness• Poor provision of patient education• Multiple prescribers• Inappropriate prescribing• Poor medication packaging• Drug name nomenclature• Prescription inequivalencies• Inaccurate dose calculations• Distractions• Charging for social care• Extra system contingencies• Family circumstances• Regulation• Accountability• Commercial factors• Attitudes to patient information sharing• Preparation of home carers• Patient autonomy• Local political decision making• Personal significance of the home |
|---|--|

Box 7.4: Factors expected to predispose to adverse events

These expectations were largely borne out in the study findings, in that respondents confirmed the significance of most, though not all, of the factors anticipated to be relevant and did not mention any additional unanticipated factors. The fact that some of the expected factors were not mentioned by respondents does not necessarily mean they can be discounted, since their omissions may reflect limitations in the study design. Some examples are discussed below.

7.3.1. Location of the study

The study was undertaken in just two localities. These were chosen for their differences in relation to certain key features, but they did not represent the whole range of possible sites. Particular characteristics of the two localities may be one reason why some of the expected factors were not mentioned by respondents. For example, nobody mentioned unclear definitions of nursing and personal care as a problem. This maybe was because these definitions happened to be clear and relatively well understood in both study sites. This supposition is supported by the fact that most of the medication related activities undertaken by home care respondents were activities that a physically and mentally able person living at home would usually undertake independently with minimal or no nursing intervention. Elsewhere this might not be the case.

7.3.2. Approach to sample selection

The choice of respondents might be another reason a number of factors were not mentioned. For example, the reason local political decision making was never mentioned might be because the categories of people interviewed were not familiar with the spending decisions made by local elected councillors. If respondents from the higher echelons of participating organisations (such as commissioning managers and service directors) had been included in the sample selection, such issues might have been identified.

7.3.3. Interview schedule

The interview schedule was designed to enable respondents to identify factors they saw as relevant from their own experience, rather than inviting comments on a predetermined list. This decision was taken to avoid prompting or constraining their responses. If such a list had been used, some factors that were not brought up by respondents, for example problems with drug name nomenclature, might have been acknowledged as relevant issues.

7.4. Taxonomy of factors predisposing to adverse events

Researchers and investigators have conceptualised the occurrence and approached the analysis of adverse events using various taxonomic models. One such model is

the Framework of Factors Influencing Clinical Practice (FFICP) (Clinical Risk Unit and ALARM 1999). This model has proved useful in defining the conditions of safe and unsafe practice in hospital settings. In the present study it was anticipated that a taxonomic model of this type, specifying the range of factors that predispose to adverse events when medication related activities for older people living at home are transferred from district nursing to home care services, would enable a better understanding of the circumstances in which home carer involvement in such activities might jeopardise patient safety.

The FFICP was largely derived from the outputs of single incident analyses in obstetric medicine and medical publications on error and risk management in hospital settings. The extent to which it would be applicable in the very different context of domiciliary care was uncertain. While it appeared capable of accommodating all the factors identified in the literature as likely to predispose to adverse events (see section 4.5.1) it did not seem likely to fit quite so well in other respects (see section 4.5.2).

Given this uncertainty, it was decided not to pre-empt the issue and achieve a forced fit by using the FFICP as a template for the present study, either to dictate precisely what topics were covered in the interviews or to predetermine the themes and factors explored in the data analysis (see section 5.1.1 and section 5.4). The taxonomic model generated from the findings of the present study is named the Framework of Factors Influencing Medication Management by Home Carers (FFIHC). The framework is presented below.

Factor types	Contributory factor	Components
Institutional Context	Economic context	<ul style="list-style-type: none"> ● Spot purchasing ● Travel and contingency ● Low wages ● Split shifts
	Links with external organisations	<ul style="list-style-type: none"> ● Confusion between care assessor and home care coordinator roles ● Proliferation of care providers ● Use of more than one provider per patient
Organisational & Management Factors	Policy standards & goals	<ul style="list-style-type: none"> ● Human resources ● Risk management ● Quality improvement ● Supervision
	Financial resources & constraints	<ul style="list-style-type: none"> ● Rationing services
Work Environment Factors	Building & Design	<ul style="list-style-type: none"> ● Ease of access
	Environment (Home)	<ul style="list-style-type: none"> ● Housekeeping ● Insecure facilities
	Environment (Local)	<ul style="list-style-type: none"> ● Personal safety ● Difficulty travelling between assignments
	Equipment/Supplies	<ul style="list-style-type: none"> ● Functionality ● Unavailability
	Staffing	<ul style="list-style-type: none"> ● Interruptions in staffing continuity
	Training	<ul style="list-style-type: none"> ● Provision of induction & refresher training
	Workload/Hours of work	<ul style="list-style-type: none"> ● Unrealistic scheduling ● Split shifts
Team Factors	Verbal communication	<ul style="list-style-type: none"> ● Communication between home carers, district nurses, patients and informal carers ● Communication between domiciliary and secondary care ● Voicing disagreements & concerns
	Written communication	<ul style="list-style-type: none"> ● Legibility of records ● Adequate management plan ● Quality of information in notes
	Seeking help	<ul style="list-style-type: none"> ● Responsiveness of senior staff
Individual (staff) Factors	Competence	<ul style="list-style-type: none"> ● Verification of competence
	Knowledge & skills	<ul style="list-style-type: none"> ● Verification of knowledge and skills
	Physical & mental stressors	<ul style="list-style-type: none"> ● Physical stressors
Task Factors	Availability & use of protocols	<ul style="list-style-type: none"> ● Absence of protocols ● Quality of information in protocols
	Decision-making aids	<ul style="list-style-type: none"> ● Availability of decision making aids
	Task definition	<ul style="list-style-type: none"> ● Inconsistent task definition
Patient Factors	Condition	<ul style="list-style-type: none"> ● Depression ● Dementia
	Personal	<ul style="list-style-type: none"> ● Social and family circumstances ● Personality ● Adult protection issues
	Treatment	<ul style="list-style-type: none"> ● Patient familiarity with treatment regimens ● Treatment effectiveness
	Staff-patient relationship	<ul style="list-style-type: none"> ● Communication between staff & patients
	Patient choice	<ul style="list-style-type: none"> ● Reluctance to accept nursing intervention &/or clinical equipment

Figure 7.1: Framework of Factors Influencing Medication Management by Home Carers (FFIHC)

7.4.1. Consonance between the FFICP and the FFIHC

This section explores the extent of consonance between the FFICP and the FFIHC. Overall the structure of the FFICP and many of the contributory factors and components listed therein were found to be applicable to domiciliary care settings. At the same time, there were some important differences in detail. Some factors were unique to the FFICP, while others were exclusive to the FFIHC. The overlap between the factors listed in the two models is depicted below.

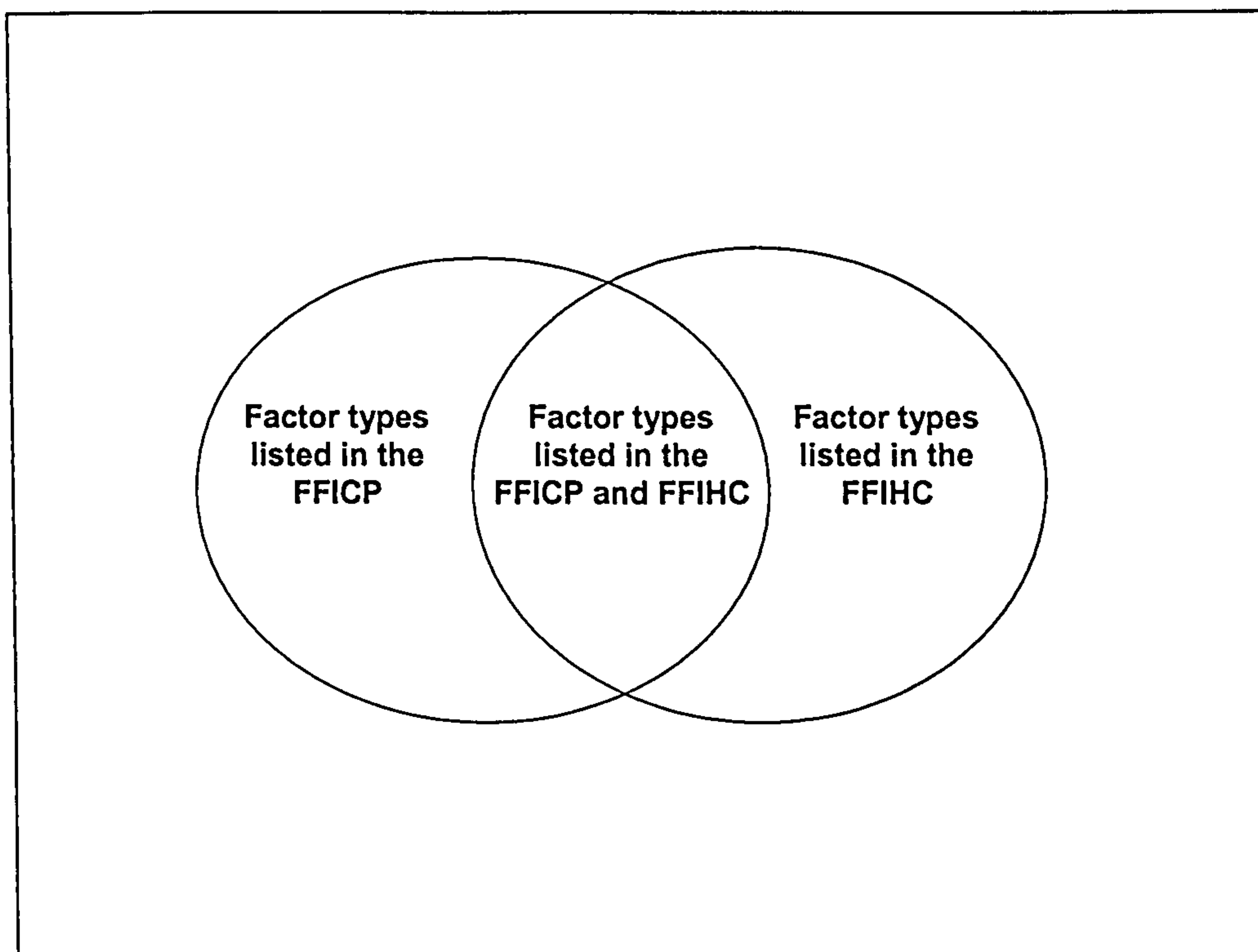


Figure 7.2: Overlap between the factors listed in the FFICP and the FFIHC

A more detailed specification of the extent of consonance between the FFICP and the FFIHC is provided in figures 7.3 – 7.9. Each figure depicts a different major factor type (i.e. institutional factors, organisation and management factors, work environment factors etc). The first column (shaded yellow) lists the FFICP contributory factors and the second (shaded green) the components influencing performance at that level. The third column (shaded yellow) lists the FFIHC contributory factors and the fourth (shaded green) the components influencing performance at that level. The trellis pattern denotes areas of dissonance between the two models.

FFICP		FFIHC	
Contributory factor	Components	Contributory factor	Components
Economic & regulatory context		Economic context	<ul style="list-style-type: none"> ● Spot purchasing ● Travel and contingency payments ● Low wages ● Split shifts
NHS Executive			
Clinical Negligence Scheme for Trusts			
Links with external organisations		Links with external organisations	<ul style="list-style-type: none"> ● Confusion between care assessor and home care coordinator roles ● Proliferation of care providers ● Use of more than one provider per patient

Figure 7.3: Institutional factors in the FFICP and the FFIHC

The areas of consonance with respect to institutional factors were economic context, and links with external organisations. The areas of dissonance were NHS Executive and Clinical Negligence Scheme for Trusts.

FFICP		FFIHC	
Contributory factor	Components	Contributory factor	Components
Organisation structure	<ul style="list-style-type: none"> • Hierarchical arrangement of staff • Span of control 		
Policy, standards & goals	<ul style="list-style-type: none"> • Mission statement • Management arrangements • Contract services • Human resources • Information services • Maintenance management • Task design • Training policy • Policies & procedures • Facilities & equipment • Risk management • Health & safety management • Quality improvement 	Policy, standards & goals	<ul style="list-style-type: none"> • Human resources • Risk management • Quality improvement • Supervision
Safety culture	<ul style="list-style-type: none"> • Attitude to safety • Management support 		
Financial resources & constraints		Financial resources & constraints	<ul style="list-style-type: none"> • Rationing services

Figure 7.4: Organisation and management factors in the FFICP and the FFIHC

The areas of consonance with respect to organisation and management factors were policy, standards and goals, and financial resources and constraints. The areas of dissonance were organisation structure, and safety culture.

FFICP		FFIHC	
Contributory factor	Components	Contributory factor	Components
Administration	<ul style="list-style-type: none"> • Ease of running general administration systems • Notes handling 		
Building & Design	<ul style="list-style-type: none"> • Maintenance management • Functionality 	Building & Design	<ul style="list-style-type: none"> • Ease of access
Environment	<ul style="list-style-type: none"> • Housekeeping • Control of the physical environment • Movement of patients between wards/sites 	Environment (Home)	<ul style="list-style-type: none"> • Housekeeping • Insecure facilities
		Environment (Local)	<ul style="list-style-type: none"> • Personal safety • Difficulty travelling between assignments
Equipment/Supplies	<ul style="list-style-type: none"> • Malfunction/failure/reliability • Unavailability • Maintenance management • Functionality 	Equipment/Supplies	<ul style="list-style-type: none"> • Functionality • Unavailability
Staffing	<ul style="list-style-type: none"> • (Un)availability 	Staffing	<ul style="list-style-type: none"> • Interruptions in staffing continuity
Training	<ul style="list-style-type: none"> • Induction • Management influence on training • Process • Refresher training • Provision of general training 	Training	<ul style="list-style-type: none"> • Provision of induction training • Provision of refresher training
Workload/Hours of Work	<ul style="list-style-type: none"> • Regular rest breaks • Optimal workload • Involved in non job related duties 	Workload/Hours of work	<ul style="list-style-type: none"> • Unrealistic scheduling • Split shifts
Time Factors	<ul style="list-style-type: none"> • Delays 		

Figure 7.5: Work environment factors in the FFICP and FFIHC

The areas of consonance with respect to work environment factors were building and design, environment, equipment and supplies, staffing, training, and workload/hours of work. The areas of dissonance were administration, and time factors.

FFICP		FFIHC	
Contributory factor	Components	Contributory factor	Components
Verbal communication	<ul style="list-style-type: none"> • Communication <ul style="list-style-type: none"> - Between junior & senior staff - Between professionals - Outside the ward/department - Between staff & patients - Between specialities - Between staff & carers/relatives • Adequate hand over • Voicing disagreements & concerns 	Verbal communication	<ul style="list-style-type: none"> • Communication <ul style="list-style-type: none"> - Between domiciliary care services - Between home carers & patients - Between domiciliary care services & hospitals - Between domiciliary care services and family members • Voicing disagreements & concerns
Written communication	<ul style="list-style-type: none"> • Incomplete/absent information • Discrepancies in the notes • Adequately flagged notes • Legibility of signatures on records • Adequate management plan • Availability of records • Quality of information in the notes 	Written communication	<ul style="list-style-type: none"> • Legibility of records • Adequate management plan • Quality of information in the notes
Supervision & seeking help	<ul style="list-style-type: none"> • Availability of junior & senior staff • Responsiveness of junior & senior staff • Willingness of junior staff to seek help 	Seeking help	<ul style="list-style-type: none"> • Responsiveness of senior staff
Congruence and consistency	<ul style="list-style-type: none"> • Similar definition of tasks between professionals & different grades of staff 		
Leadership & responsibility	<ul style="list-style-type: none"> • Effective leadership • Clear definitions of responsibility 		
Staff response to incidents	<ul style="list-style-type: none"> • Support by peers after an incident • Support by staff of comparable grades across professions e.g. senior nurse and junior doctor 		

Figure 7.6: Team factors in the FFICP and the FFIHC

The areas of consonance with respect to team factors were verbal communication, written communication and seeking help. The areas of dissonance were congruence and consistency, leadership and responsibility, and staff response to incidents.

FFICP		FFIHC	
Contributory factor	Components	Contributory factor	Components
Competence	<ul style="list-style-type: none"> • Verification of qualifications • Verification of skills & knowledge 	Competence	<ul style="list-style-type: none"> • Verification of competence • Verification of skills & knowledge
Knowledge & skills	<ul style="list-style-type: none"> • Verification of competence • Verification of skills & knowledge 	Knowledge & skills	<ul style="list-style-type: none"> • Verification of competence • Verification of knowledge & skills
Physical & mental stressors	<ul style="list-style-type: none"> • Motivation • Mental stressors • Physical stressors 	Physical & mental stressors	<ul style="list-style-type: none"> • Physical stressors

Figure 7.7: Staff factors in the FFICP and the FFIHC

The areas of consonance with respect to staff factors were competence, knowledge and skills, and physical and mental stressors. There were no areas of dissonance.

FFICP		FFIHC	
Contributory factor	Components	Contributory factor	Components
Availability & use of protocols	<ul style="list-style-type: none"> • Procedures for reviewing & updating protocols • Availability of protocols • Use of protocols • Availability of specific types of protocol • Quality of information in the protocol • Accident & investigation procedures 	Availability & use of protocols	<ul style="list-style-type: none"> • Absence of protocols • Quality of information included in the protocol
Availability & accuracy of test results	<ul style="list-style-type: none"> • Tests not done • Disagreements regarding the interpretation of the test results • Need to chase up test results 		
Decision-making aids	<ul style="list-style-type: none"> • The availability, use and reliability of specific types of equipment • The availability, use & reliability of specific types of tests • The availability & use of a senior clinician 	Decision-making aids	<ul style="list-style-type: none"> • Availability of decision making aids
Task design	<ul style="list-style-type: none"> • Can a specific task be completed by a trained member of staff in adequate time & correctly 		
		Task definition	<ul style="list-style-type: none"> • Inconsistent task definition

Figure 7.8: Task factors in the FFICP and the FFIHC

The areas of consonance with respect to task factors were availability and use of protocols, and decision-making aids. The areas of dissonance were availability and accuracy of test results, task design, and task definition.

FFICP		FFIHC	
Contributory factor	Components	Contributory factor	Components
Condition	<ul style="list-style-type: none"> ● Complexity ● Seriousness 	Condition	<ul style="list-style-type: none"> ● Depression ● Dementia
Personal	<ul style="list-style-type: none"> ● Personality ● Language ● External support ● Social & family circumstances 	Personal	<ul style="list-style-type: none"> ● Personality ● Social & family circumstances ● Adult protection issues
Treatment	<ul style="list-style-type: none"> ● Known risk factors associated with treatment 	Treatment	<ul style="list-style-type: none"> ● Patient familiarity with treatment regimens ● Treatment effectiveness
History	<ul style="list-style-type: none"> ● Medically ● Personally ● Emotionally 		
Staff-patient relationship	<ul style="list-style-type: none"> ● Good working relationship 	Staff-patient relationship	<ul style="list-style-type: none"> ● Communication between staff and patients
		Patient choice	<ul style="list-style-type: none"> ● Reluctance to accept nursing intervention &/or clinical equipment

Figure 7.9: Patient factors in the FFICP and FFIHC

The areas of consonance with respect to patient factors were condition, personal, treatment, and staff patient relationship. The areas of dissonance were history, and patient choice. The areas of dissonance are now considered in more detail.

7.4.1.1. Factor types not featured in the FFIHC

A number of factor types listed in the FFICP do not feature in the FFIHC. There are two possible reasons for this. One relates to the phenomenon under investigation. That is they were clearly not relevant to the transfer of responsibility for medication related activities for older people living at home from district nursing to home care services. For example, the reason availability and accuracy of test results was never mentioned by respondents was probably because home carers do not request or use test results. The other reason is related to the study methods. Two examples are provided below.

Maintenance management (that is the structure of the building and the provision of essential utilities to the building) was never mentioned by respondents, despite the fact that successive house condition surveys have found that older people are particularly likely to experience poor housing conditions (King and Leather 1995). The reason respondents did not mention poor housing conditions might have been

because they did not think to associate medication related difficulties with poor housing conditions. Medication related difficulties associated with poor housing conditions (such as the absence of adequate hand washing facilities) might have been detected by observational methods. If the study were to be repeated the decision to exclude observational methods (see section 5.1.1) would be revisited.

Language difficulties (that is difficulties associated with the ability to understand words and use words to communicate) were never mentioned by respondents, despite the fact that they are likely to have encountered disorders such as dysphasia (an impairment of speech and comprehension of speech) and difficulties associated with patients not speaking English or speaking English as a second language. If interviews with predetermined topic areas based on the FFICP been used, factors such as language might have been identified as a problem.

7.4.1.2. Factor types not featured in the FFICP

Some factor types listed in the FFIHC do not feature in the FFICP. Some of these are obviously unique to domiciliary care services (for example, difficulty travelling between assignments and reluctance to accept nursing intervention). Others however would appear to be as relevant in hospital settings as they do in domiciliary care settings.

Some of these may not feature in the FFICP because they were not especially topical at the time the framework was developed in 1999. For example, personal (staff) safety does not feature in the FFICP. However, personal (staff) safety was not on the research or policy agenda at the time the framework was developed. It is only recently that various surveys have been undertaken to document the burden of violence and aggression against NHS staff (British Medical Association (BMA) 2003) and initiatives based on zero tolerance introduced (National Audit Office 2003).

Other potentially significant factors may not feature in the FFICP because it was derived from the outputs of single incident analyses in obstetric medicine and medical publications on error and risk management in hospital settings. For example, there is no mention of communication between the primary and secondary

care sector. Communication between these sectors has little bearing in neonatal resuscitation and operating rooms. In contrast research and policy in elderly and intermediate care environments emphasises the importance of good communication between the two sectors (DH 2003b).

7.5. Conclusion

This chapter reported and analysed the range of factors that respondents identified as predisposing to adverse events and as enhancing patient safety when responsibility for medication related activities was transferred from district nursing to home care services. The findings largely confirm the significance of the factors already identified in the literature, rather than identifying many that are new. An important but somewhat unexpected finding was the positive part home carers played in the lives of older people and the way in which their involvement in medication related activities not only sometimes jeopardised patient safety but in certain circumstances actually enhanced patient safety.

This chapter also reported and analysed the technical application of the taxonomic model approach to a totally new area of care and the generation of framework specifying the range of factors that predispose to errors and adverse events when responsibility for medication related activities is transferred from district nursing to home care services. The FFIHC is very similar to the FFICP. However, it is likely that the FFIHC is not completely comprehensive, and it is possible that some factors are missing. The same is true of the FFICP. Despite that caveat, the value of the FFIHC is that it brings all the relevant factors that have been identified together in a systematic and ordered way. This fulfils the first aim of this study and affords a far more easily accessible and comprehensive appreciation of the circumstances in which home carer involvement in medication related activities for older people living at home might jeopardise patient safety than has previously been available. The next chapter explores whether the FFIHC fulfils the second aim of the study and aids the identification of appropriate and effective strategies to minimise errors and adverse events.

Chapter 8: From minimising errors to taking risks

Medicines contribute to the health and wellbeing of many older people.

Nevertheless, medication management is a complex and potentially hazardous process and as many as one in six admissions of older people to hospital are related to adverse drug events (Chan et al 2001; Pirmohamed et al 2004). While patient safety is the focus of increasing concern in hospital settings, little concomitant attention has been given to understanding patient safety in domiciliary care settings. Medication related assistance for older people living at home is often provided by home care services. My experience working in the district nursing service suggested that errors and mishaps sometimes occurred when responsibility for medication related activities was transferred from district nursing to home care services. This was therefore identified as an area worthy of further investigation.

The aims of the study presented in this thesis were to better understand the circumstances in which home carer involvement in medication related activities for older people living at home might jeopardise patient safety and to use this understanding to consider the feasibility and appropriateness of potential strategies to minimise errors and adverse events, as detailed in chapters one and four. The literature was explored to learn more about how researchers and investigators in other industries conceptualised patient safety and the occurrence of adverse events. Several taxonomic models were identified that specify the range of factors that predispose to adverse events in particular situations. One such model was the Framework of Factors Influencing Clinical Practice (FFICP) (Clinical Risk Unit and ALARM 1999). This has been found to be a useful framework for clarifying the factors contributing to adverse events in hospital settings.

It was anticipated that a similar model could usefully be constructed to specify the range of factors that predispose older people to adverse events when responsibility for medication related activities was transferred from district nursing to home care services. This was developed using findings from over 60 open ended interviews with home care and district nursing respondents in two contrasting study sites, as

reported in chapters five, six and seven. The resulting model was named the Framework of Factors Influencing Medication Management by Home Carers (FFIHC). It represents the first use of the taxonomic approach to understanding patient safety issues in a domiciliary care setting. The FFIHC fulfils the first aim of the study in that it provides a unique and comprehensive account of the circumstances in which home carer involvement in medication related activities for older people living at home might jeopardise patient safety. This framework could be usefully employed in the retrospective analysis of adverse events and near misses in domiciliary care settings in order to help identify where things have gone wrong and whether or how they might be remedied. As described in chapter four, this is the main way in which the FFICP has been used to date in hospital settings.

It was originally anticipated that development of the FFIHC might also help address the second aim of this study, that of identifying appropriate and effective strategies to minimise errors and adverse events in this area of care. The first part of this final chapter focuses on this second aim. In doing so it comes to the conclusion that the FFIHC is of considerably less value for this purpose than was expected. What becomes clear is that the systematic itemisation and categorisation of the factors that may contribute to errors and adverse events does not in itself make solutions to these hazards any easier to find. Indeed having such a framework may actually be unhelpful, because the creation of a formal taxonomy conveys an illusion of order and manageability that may generate complacency and actively distract from more deeply rooted issues that are probably insoluble without profound societal change.

Analysis of these limitations, informed by wider reflection on the experience gained from carrying out the work reported in this thesis, leads at the end of the chapter to a more fundamental reappraisal of the overall approach taken in this study, which reflected the assumption that risk minimisation is a priority concern in the management of medication for older people living at home. This commitment to risk minimisation underpins the whole systems approach to patient safety discussed in chapter four. However recent discourse and practice in social care derives from a rather different set of values that prioritise other human needs, particularly those of autonomy and independence. The thesis concludes by considering how privileging of those values leads to a different approach to risk and risk taking which, if

appreciated from the start might have lead to a rather different focus for the present study.

8.1. Exploring the scope for strategies to minimise errors and adverse events

When consideration is given to what might be done about the problems identified in this study and itemised in the FFIHC, some look potentially quite feasible to deal with (indeed some solutions were suggested by respondents). However, others appear considerably less tractable. This variation in susceptibility to resolution can be usefully analysed by adopting the distinction between ‘tame’ and ‘wicked’ problems, developed originally by Rittel and Weber (1973) in relation to urban public planning. Tame problems are well defined, stable and have clear and discrete causes. They are ‘tame’ because they can be isolated and dealt with through traditional linear problem solving processes that produce workable solutions in an acceptable time frame (Conklin and Weil 1997). In contrast, wicked problems are hard to define, unbounded and continually evolving. Their causes are multi-faceted and interlinked and they can always be expressed in terms of some larger or related problem (Gibson 2003). Such problems are ‘wicked’ because they are rarely capable of final resolution (Tremblay 2005). This tame/wicked classification has been widely used in public planning (for example, it was used to understand the problems encountered in the development of Heathrow’s Terminal Five (Hancock and Holt 2003)) and more recently in healthcare (Clark and Stewart 2000). It provides a useful categorisation to consider the manageable and unmanageable problems identified in this study.

8.1.1. Tame problems

Some of the sources of hazard identified in the present study are well bounded and potentially amenable to technical, procedural, education or behavioural interventions at a micro or meso level. Those that come within this category are relatively few in number. They are listed in box 8.1. A fuller description of these problems was provided in the preceding chapter.

- Cognitively intact patients with poor understanding of the purpose and/or function of medication
- Absence of home care medication policies
- Medication related activities not mentioned on the patient care plan
- Absence of home care decision making aids
- Uncorrected [staff] poor vision
- Difficulty entering patient property

Box 8.1: Tame problems

Technical and behavioural interventions involve the application of tools, devices, processes or methods to address the circumstances which may give rise to errors and adverse events. For example, the study findings suggest that parking charges can lead to hurried visits (see section 7.1.7.1). Potential technical interventions to prevent home care visits being inappropriately curtailed might include the introduction of vouchers that allow people caring for patients in receipt of attendance or disability living allowance to park for free. These types of vouchers are already available in some local authority areas including York (www.york.gov.uk/parking) and Islington (www.islington.gov.uk/transport). The study findings also suggest that difficulties may arise when older people are unable to facilitate entry for home carers to their secure and well-defended dwellings (see section 7.1.5.1). Possible technical interventions include the introduction of assistive technologies such as door intercoms. These are consistent with government guidance concerning equipment provision outlined in *The National Service Framework for Older People* (DH 2001b) and examples are reported in a number of local authority areas (King 2004).

Educational and behavioural interventions may be used to enable a person or group to deal with potentially hazardous situations more effectively. For example, the study findings suggest that patients who are ill informed about their medication regimens are unable to prevent medication errors (see section 7.1.1.3). Possible behavioural interventions include patient education as championed in *The National Service Framework for Older People* (DH 2001b). This might include the types of initiatives already in place in a number of areas such as Expert Patient Programmes (DH 2001c), one-to-one sessions with a community pharmacist (DH 2005c), and multifaceted programmes that combine medication review with simplified drug regimens, medication education, and reminder charts (Van Elijken et al 2003).

While problems of this sort have the potential to be 'tamed', robust evidence about the effectiveness of the various technical and behavioural interventions available to deal with them is currently quite limited. One example is the provision of medication compliance devices (loaded by a pharmacist or district nurse). These might help dispense with dosage dangers when home carers assist with medication administration. Medication compliance devices are loaded by 39 per cent of district nursing services in the south east of England (McGraw and Drennan 2000) and by 77 per cent of community pharmacists in Leeds (Nunney and Raynor 2001). However there is currently no evidence to suggest home carers make fewer dosing errors when administering medication from these devices rather than from standard packaging. Further research is needed to evaluate their potential benefits.

Other areas also require further investigation. For example, substantial investment has been made into setting up a national reporting system. The Department of Health argues that local and national clinical incident reporting systems are essential to enable analysis of adverse events and to ensure that subsequent recommendations to minimise errors are based on sound, representative information (DH 2000a). The findings from the present study suggest that medication errors in domiciliary care settings are not reported using these systems. Subsequent presentations of the study findings to health and social care professionals at a local and national level confirmed the lack of adverse medication event reporting outside of hospital settings. There is a need for more research to investigate the reasons why district nurses and home carers fail to report these events.

8.1.2. Wicked problems

As noted above, relatively few of the problems identified in this study appear to be amenable to technical, procedural, education or behavioural interventions at a micro and meso level. Most are almost certainly more difficult to solve, because they reflect more fundamental difficulties associated with health and social care policy, whose resolution would require financial, structural and/or cultural changes at a macro level. These changes are unlikely to be forthcoming. The FFIHC does not directly identify contributory factors acting at this macro level.

8.1.2.1. Finance related problems

The wide range of safety and human error problems identified in this study whose origins ultimately lie in lack of financial resources is shown in box 8.2. A fuller description of these problems was provided in the preceding chapter.

- Poor recruitment and retention of home carers
- Interruptions in home carer continuity
- Use of more than one home care provider to care for an individual patient
- Absence of trusting relationships between home carers and patients
- Short home care visits
- No slack time in home care programmes
- Insufficient time for home carers to undertake activities not listed on the care plan
- Absence of travel and contingency payments for home carers
- Problems commissioning home care
- Hurried home care visits
- Wrong time home care visits
- Insufficient time for home carers to undertake activities not listed on the care plan

Box 8.2: Safety and human error problems requiring financial intervention

When listed in this way, each of these problems gives the appearance of being specific, distinct and potentially soluble through better management at a local level. However, every one in fact depends for its resolution on the spending of more money in one way or another. For example, the study findings suggest that low wages can lead to difficulties in home carer recruitment and retention (see section 7.6.1.1). These difficulties led to interruptions in staffing continuity, which in turn may predispose to adverse events (see section 7.5.5.1). One way to deal with this could be to improve rates of pay. However, evidence suggests that restrictive local authority pricing policies mean home care providers cannot afford to do so (Mathew 2004). The financial climate for local government is particularly difficult at present (Local Government Association 2005) and local authority pricing policies are unlikely to be reviewed without additional funding from central government. Financial intervention from central government is contingent upon two factors. The first factor is the amount of money available for spending in the public sector (which is always limited) and the second is whether the political motivation exists to spend

money on older people living at home (which is questionable). The rest of this section looks at the factors that determine the amount of money available and the values that influence political decisions on how that money is spent.

Most western governments have attempted to contain public expenditure since the global economic crises of the 1970s (Glennister 2000). At the same time, services for health and social care are facing increasing cost pressures (Wanless 2002; Wanless 2006). The drivers include rising patient and public expectations, an increasing need for care reflecting demographic changes, rising costs and increasing scope for intervention linked to technological development and medical advances, and workforce issues. Against this backdrop political decisions have to be made about the allocation of scarce resources (Appleby 1992), and services for older people living at home must compete with hospital care for this group and with services for other groups in the population.

Older people have never been unambiguously valued in western society (Thane 2000). They are essentially a non-productive group in a society which emphasises economic productivity and independence (Victor 1994). Ageing is often portrayed in negative terms and the stereotyped images that reflect negative attitudes towards older people include illness, impotence, ugliness, isolation, poverty, and mental decline (Palmore 1999). These images encourage society to discriminate against older people. *The National Service Framework for Older People* (DH 2001b) recognises the importance of addressing ageism as a key standard in improving NHS service provision but recent evidence suggests that change is slow (Roberts et al 2002; Young 2006).

Society is similarly equivocal about the value of home care work. Home care involves dealing with human waste (Twigg 2000). Hughes (1962) invoked the term dirty work to refer to the tasks and occupations that are likely to be perceived as disgusting or degrading. Although these tasks and occupations are integral to society, people do not want to acknowledge them and society prefers to keep them hidden from view (Emerson and Pollner 1976).

Political expedience is served by investing in issues that appeal to electorates. This has been suggested as a reason why spending on improving social care has been less of a priority than funding to reduce hospital waiting times and to improve pay, terms and conditions for NHS employees (Rankin 2004). Similar explanations have been proposed for why services for older in the community are less of a priority than funding for services for children and families (Robinson and Banks 2005).

Economic constraints have been an unremitting feature of health and social care provision for older people living at home since the founding of the welfare state (Victor 1997). This was evidenced in chapter two, which showed how they affected the development of district nursing and home care services and encouraged providers to minimise their responsibilities towards older people. This situation is unlikely to change unless the status of older people and home care work improves in the policy making arena and in wider society.

8.1.2.2. Structural interventions

A further significant set of factors identified in this study as being problematic are those that derived from the complex interfaces and structural divisions in the funding, organisation, culture and administration of health and social care services. These are grouped together in box 8.3. Again a fuller description of these problems is provided in the preceding chapter.

- Poor communication between district nurses and home carers
- Lack of respect by district nurses towards home carers
- Confusion regarding roles
- District nurses intimidating home carers
- District nurses not responding appropriately to home carer requests for assistance
- Limited face to face interaction between district nurses and home carers
- Low levels of familiarity between district nurses and home carers

Box 8.3: Safety and human error problems rooted in structural difficulties

As with the finance related problems discussed above, each of these difficulties might superficially appear soluble through focused intervention at a micro or meso level. But they are in fact more intractable than they first appear. This is because the hazard lies in the complex and interrelated nature of the overall structural of health

and social care, which means that even apparently simple actions have complicated ramifications and unexpected consequences. For example, the study findings suggest that poor communication between district nursing and home care services may contribute to adverse events (see section 7.4.1.1; section 7.4.1.5; section 7.4.3). Communication might be improved by greater face-to-face contact between district nurses and home carers. However, achieving this is problematic because each home care provider would have to arrange meetings with numerous district nursing teams and vice versa. For example, in my inner London study site there were 16 district nursing teams, one local authority home care department and nine independent sector providers. Only the local authority home care department was coterminous with district nursing teams. Consequently, each independent sector provider might have had to arrange meetings with up to 16 district nursing teams (and potentially more in adjacent districts) and each district nursing team with up to nine independent providers. The associated resource implications would make regular meetings impracticable, even if both groups saw them as worthwhile (which might not be the case). The rest of this section considers the extent to which current programmes of reform might overcome the problems associated with the complex and interrelated nature of health and social care services.

A clear division was drawn between local authority community health and social services and hospital provision in the post war welfare legislation. This division was later reinforced as personal social services became unified in new local authority social services departments quite separate from the NHS structure and the administration of health care provision (Leathard 2003). Throughout this time, structural divisions have persistently complicated health and social care provision for older people living at home. This was evidenced in chapter two which provided a comprehensive account of their effect on communication and collaboration between district nursing and home care services. Over the years, rather than attempt wholesale integration, successive governments have tried to bridge the gap between services by encouraging partnerships and collaborative working (Roberts 2000). The ensuing initiatives (such as joint finance arrangements (see section 2.2.2) and collaborative protocols (see section 2.2.4.2)) failed to achieve effective action (Coxon et al 2004).

The return of the New Labour government in 1997 signalled a renewed commitment to coordinating health and social care services and a number of different approaches to encouraging partnership and collaborative working were announced (Powell and Glendinning 2002). These included structural integration and process-centred collaboration (Alaszewski et al 2004).

The structural approach to integration involves bringing staff and resources together in one organisation under a unified hierarchical structure. The development of Care Trusts provides one model of structural integration (see section 2.4.1). Although it is possible that this approach might facilitate more effective partnerships and collaborative working at a local level, it is unlikely to have a wider impact since there are only nine sites in existence

(www.nhs.uk/England/AuthoritiesTrusts/Care/list.aspx) and the political resolve to compel their creation has evaporated (Batty 2003). Furthermore the creation of monolithic public sector organisations contradicts and runs directly counter to other key elements of current policy regarding the development of the third sector (such as private-for-profit companies, voluntary groups, Foundation Trusts, and social enterprises and cooperatives) as a mainstream provider of health and social care services (DH 2006).

The process-centred approach focuses on collaborative working relationships. For example, the development of inter professional community mental health teams that bring together community psychiatric nurses and mental health social workers (Overtveit 1997). Evaluations in the intermediate care environment have found that teams which combine nurses, social workers, physiotherapists, occupational therapists and generic health and social care support workers improve partnership and collaborative working (Hek et al 2004).

Similar developments in domiciliary care settings that bring together district nurses and home carers could potentially facilitate better communication and collaboration. The reconfiguration of primary care trusts as commissioners rather than providers of front line services (DH 2005d) could also encourage experimentation in this area, as third sector organisations might be commissioned to provide joint mainstream services (DH 2006). However, it remains to be seen whether this model of service

provision would be popular with patients whom evidence suggests often prefer to employ their own home carer rather than contract with an agency (Glendinning et al 2000a; Glendinning et al 2000b). Furthermore it is unclear how funding complexities would be settled since the district nursing/healthcare element would be free whilst the home care/social care element would be means tested.

Another model of process-centred integration is proactive case management. Case management emerged from North America as a way of navigating older people through the numerous health and welfare agencies involved in their care (Victor 1997). It involves mobilising and coordinating a set of resources (formal and informal) at the level of the individual patient to achieve a clearly formulated goal. Case management can best be understood as the performance of a series of core tasks in long-term care. These tasks include case finding and screening, assessment, care planning, and monitoring and review (Challis 1993).

One of the first major case management projects in the UK was the Kent Community Care Schemes. The case managers were social workers. Each had a caseload of patients who were deemed to be on the margins of institutional provision. Case managers controlled a decentralised budget which could be spent upon a variety of services not normally available through the social care system, as well as deploying existing services. They were free to organise the most appropriate package of care according to the assessed needs of the patient, within an overall constraint of two-thirds of the cost of a place in a residential care home. Evaluations reported that older people who had experienced case management were less likely to die prematurely and less likely to enter long-term care than their contemporaries (Challis and Davies 1984; Challis and Davies 1985).

More recently, case management approaches have been applied to the management of patients with multiple long term conditions (Hutt et al 2004; DH 2005e). The case managers in this instance are community matrons. The objective is to enhance quality of life and reduce costs by circumventing service fragmentation and the inadequate coordination of health and social care provision. However, it remains to be seen whether or not case management in this area of care will bring about the desired patient outcomes. Evaluations thus far have produced mixed evidence

(Drennan and Goodaman 2004). Furthermore the introduction of community matrons has had unintended consequences for other services. For example, evidence submitted to the Select Committee on Health suggested funding for specialist nurses (such as Parkinson's disease specialist nurses) had been withdrawn in some areas because trusts decided to employ community matrons instead of specialist nurses (House of Commons Health Committee 2006).

8.1.3. Limitations of the taxonomic models

Earlier chapters in this thesis demonstrated how the taxonomic approach can be successfully employed to develop a comprehensive listing of the potential patient safety hazards that may arise in domiciliary care settings in particular situations. However my ambition in carrying out this study was to go beyond description. I hoped that systematic itemisation and categorisation of the range of factors that predispose to errors and adverse events would make it clearer what can be done to minimise errors and adverse events.

The focus in the present chapter has so far been on considering which of the problems associated with the transfer of responsibility for medication related activities from district nursing to home care services are potentially susceptible to resolution and by what means. What this analysis has revealed is that the vast majority of hazards set out in the FFIHC are substantially intractable. Arguably, the taxonomic approach hinders rather than helps appreciation of this fact. For the reason that the process of disentangling the various hazards and grouping them into bulleted lists achieves an illusion of order and manageability which conceals rather more than it reveals about the larger and more deeply rooted issues at stake.

The taxonomic approach to accident investigation was originally developed for use in tightly managed and controlled contexts such as aviation and high technology industry. The FFICP, which provided the model for the development of the FFIHC, was derived from and for the analysis of events occurring in hospital settings. It is possible that in these bounded organisational settings, which have been designed to facilitate the achievement of specific, focused goals and are resourced accordingly, more of the hazards that arise will be amenable to relatively straightforward solutions

at a micro and meso level. Where this is so, taxonomic approaches might still prove useful not only for retrospective analysis of adverse events and near misses but also prospectively to design risk assessment instruments and generate strategies to reduce the risks identified (although, to date they have not generally been used in this way).

In the present study, as was noted in chapter four, the context was quite different. The latter part of chapter four discussed a range of features relating to the wider social and political environment and the organisation of services in domiciliary care that distinguished them from hospital settings (see box 4.7). Given these features, there was uncertainty about how effectively the framework approach might translate into a domiciliary care setting. Paradoxically, these differences turned out not to be obstacles in the technical sense anticipated, since it was quite possible to generate a framework similar to the FFICP for use in a domiciliary care setting. Indeed, the similarities were so great that it was possible to map the new taxonomy under much the same headings. However, looking back, it is clear that many of the features discussed at this stage (for example, wider funding issues, political decision making, labour market factors, weak regulation and numerous other extra-system contingencies) provide hints about the wicked problems that have subsequently emerged as central issues. They all reflect ways in which the circumstances under scrutiny were not part of a bounded or manageable system, were never designed to meet the needs of older people and the management of their medication, and were not likely to be easily modified to do so. With hindsight, these were all indications that the taxonomic approach would turn out to be not unfeasible but nevertheless of limited utility.

8.2. An alternative approach to risk

As discussed above, analysis of the findings led to a reappraisal of the utility of the taxonomic approach in respect of identifying strategies to reduce risk in domiciliary care settings. But, more than that, the experience of undertaking this study has also challenged my taken for granted presumption that risk minimisation is a priority concern to improve care for older people living in their own homes. Concern about the potential for medication errors was the main motive for beginning this research, and the project was designed on the assumption that reducing the occurrence of such errors and adverse events was a central goal. As such the orientation of this study

was very much in line with the overall approach adopted in patient safety research in other health care settings, and in the wider field of accident research reviewed in chapter four. However, undertaking interviews with respondents and reflecting on their descriptions of the patients they visited and the place of medication in these people's lives suggested the value of taking a rather wider view.

8.2.1. From minimising errors to taking risks

Some of the sources of hazard identified in the present study were a consequence of patients choosing other goals in their decision making over and above risk minimisation in medication management (see box 8.4). For example, a respondent described how medication belonging to one patient was taken by friends of the patient who misused drugs (see section 7.5.2.2). The patient continued to encourage her friends to visit, despite regularly running out of medication, because she was more concerned about the risk of losing their companionship than the risk of having no medicines.

- Poor housekeeping
- Hoarding medication
- Keeping company with people who misuse drugs
- Refusing clinical equipment and/or nursing intervention

Box 8. 4: Hazards related to patient decisions

Although a number of studies have been undertaken to explore perceptions of risk amongst family carers (Adams 2001; Buri and Dawson 2000) few have been undertaken with older people themselves (Reed 1998). The limited work that has been undertaken supports the doubts emerging in the present analysis regarding risk minimisation as an absolute priority in the lives of older people living at home. For example, a study examining the way older people incorporate risk into their daily lives found that respondents often traded safety against competing priorities (Wynne-Harley 1991). In his study, despite the danger, one woman continued to cycle through busy streets in order to alleviate her arthritis, which she saw as a greater threat to her quality of life than the risk of accidents. Another woman used an electric heater in her bathroom, despite the risks of electrocution, because she was more concerned about the risk of hypothermia if she fell in an unheated bathroom.

In the absence of further research exploring perceptions of risk amongst older people, this final section explores the set of values in current discourse and practice in social care. It considers the way these might influence the management of risk when responsibility for medication related activities for older people living at home is transferred from district nursing to home care services.

The growing disillusionment with long-stay hospital and residential care for older people and other groups with long term needs were evidenced in chapter two. Tinker (1997) outlined five theories and facts that came together to underlie the community care reforms of the late 1980s and early 1990s. First, there were views about the positive value in terms of quality of life of being at home. There was also a general reaction against institutional care which led to the belief that alternatives ought to be made available. Second, there were practical problems increasingly associated with institutions such as difficulties recruiting residential staff. Third, there was less need to keep some people in an institution away from society because much behaviour that was disturbed or bizarre could be controlled by drugs and other methods. Fourth, there was the cost of institution care. Finally, there was a growing recognition that people had a right, where possible, to live among ordinary people in society, and not in separate institutions. The institution was seen as a barrier to normal living.

The community care reforms were imbued with the values of autonomy and independence. For example, the White Paper *Caring for People* stated the changes were intended to enable people to live as normal a life as possible with the right amount of support to enable maximum independence, and to provide people with a greater say in how they live their lives (DH 1989). Autonomy was concerned with self-determination and the ability to make choices (Atkinson 1991). Independence was based on choice over where and how to live and who provided assistance and, control over where and how assistance was provided (Glendinning et al 2000b).

The 1990 NHS and Community Care Act required that the provision of community care services be dependent on a needs based assessment. The community care assessment process is underpinned by the values autonomy and independence. The assessment looks at functional deficits (Alaszewski et al 2004) and how they might be compensated (Waterson 1999). The identified needs are then compared against

local authority eligibility criteria in order to determine whether the patient is entitled to receive publically funded social care. These criteria are based on national guidance. There are four bands which describe the seriousness of the risk to independence if community care services are not provided (critical, substantial, moderate and low). The assessment of risk is based on maintaining the person's independence over time. Key factors central to a person's independence are freedom from harm, abuse or neglect; autonomy and freedom to make choices; ability to manage personal and other daily routines; and involvement in family and wider community life including paid and unpaid work, learning, volunteering, leisure and hobbies (DH 2003b). Each local authority decides where it will set the threshold for who is eligible for care.

The values of autonomy and independence have retained their key status in policy statements on community care and are interwoven into almost all aspects of current community care policy (DH 2001b; DH 2005d; DH 2005f; DH 2006). This can be seen in relation to the introduction of direct payments. The Disability Movement campaigned for direct payments for nearly two decades arguing that conventional services reflected managerial and professional interests rather than the priorities of older and disabled people themselves (Glendinning et al 2000b). They claimed that dependence on conventional services was disempowering and denied disabled people the means to live independently (Morris 1997). The 1996 Community Care (Direct Payments) Act gave local authorities the power to provide direct payments to replace conventional social care provision.

It has been argued that to operationalise the principles of autonomy and independence, older people must be allowed the freedom to choose the level of danger they want to expose themselves to (Norman 1988) and to make the wrong choices if necessary (Ferlie et al 1983). However, the preoccupation in hospital and residential care settings for older people has not been with autonomy and independence but with danger and propensity to harm (Reed 1998). The values influencing professional decision making in these settings emphasise a paternalistic concern with protecting older people from the potentially harmful consequences of everyday living such as falls and hypothermia (Manthorpe and Alaszewski 2000). Associated interventions include increased supervision and restraint, for example,

watching whilst someone is bathing to prevent drowning, and locking doors to prevent people going outside (Counsel and Care 1992; Herring and Thom 1997). Opponents of the paternalistic approach argue that older people can be harmed by over protectiveness and that associated interventions can lead to the loss of self esteem and self respect and an increase in dependence (Norman 1987).

Putting the values of autonomy and independence to the fore leads to a very different way of thinking about risk. The risk taking approach was developed in response to the perceived deficiencies in the paternalist approach. It defines risk in broader terms than its negative consequences alone, recognises the importance of psychological and emotional needs, as well as physical needs, and promotes the idea of risk as an essential ingredient for improving quality of life (Brearley 1982). Risk taking is still a developing topic and currently is no more than a cognitive framework for thinking about risk rather than a practical tool to help practitioners make risk decisions (Titterton 2005).

Community care resources are increasingly targeted towards people whose needs pose a substantial or serious risk to independence (Waterson 1999). Therefore people in receipt of social care services are progressively more vulnerable. What is emerging in the social care literature is a debate on how assessments are made in relation to determining eligibility for services and recognition of the duality that exists between the need to ensure that older people have rights and choices (the risk taking approach) and at the same time that they are vulnerable to and need protection from harm (the risk minimisation approach) (Alaszewski and Alaszewski 2000).

Practitioners have to juggle the values of autonomy and independence and the values of risk minimisation (Alaszewski et al 1998; Stevenson 1999; Taylor 2005). This duality is intractable and there is no national approach to risk management in social care and few multi agency protocols to help practitioners get the balance right (Parsloe 1999). The only protocols that exist are almost exclusively in relation to protecting vulnerable adults from abuse (DH and HO 2000). It is argued that social care practitioners err towards autonomy and independence whilst those in health care regard risk minimisation as an absolute priority. Nowhere are these tensions more obvious than in relation to supporting older people with dementia living at home

(Social Services Inspectorate 1997). I would argue the reasons health care professionals favour the values of risk minimisation are twofold. First, they are related to their experience in acute hospital settings where the stakes are high in terms of patient safety and litigation. Second, they are related to their obligations under the NHS clinical governance framework to control risk and prevent accidents.

The work social care practitioners have undertaken with older people living at home has not been acknowledged to involve high stakes unlike work undertaken in relation to families and children (Stanley and Janus 2004). This is not because work with older people does not involve risk but because there is not the same societal imperative to protect older people from harm as there is with children (Stevenson 1999). The absence of major scandals relating to failures in this area of care has meant practitioners have been able to promote the values of autonomy and independence with relative immunity. However, evidence suggests there is increasing concern amongst practitioners about issues of litigation and negligence. These concerns are causing some social care practitioners to practice more defensively (Langan and Lindow 2004).

There is currently no national approach to risk management in social care. Nor are there many multi agency protocols to help practitioners get the balance right between the values of autonomy and independence and the values of risk minimisation. Consequently there is considerable variation in the way risk is managed in practice. This variation might reflect the fact that risk dilemmas cannot be managed in a single optimum way for each and every patient. But, I would argue it also reflects a more fundamental uncertainty at a strategic level regarding priorities in risk management for older people living at home. It is unclear what body would take the challenge of developing a national approach to risk management in social care. However, the preceding analysis suggests quite unambiguously that risk minimisation is not an absolute priority in the lives of older people living at home and therefore the values influencing risk management in health care settings are not entirely appropriate or directly transferable to this group of service users.

8.2.1.1. Conclusion

Risk is a multifaceted concept developed in fields as diverse as aviation, high technology industry, medicine and social care. Each field has different values and different cultures of risk management. The values placed at the fore in the study reported in this thesis were the values of risk minimisation. Alternative values were not appreciated until the study was drawing to a close and doubts emerged that risk minimisation was an absolute priority in the lives of older people living at home. Had the values of autonomy and independence been placed at the fore from the start then the focus of the study would have been quite different. Rather than focusing exclusively on district nurse and home carer perceptions of what goes wrong when medication related activities are transferred from district nursing to home care services, attention would also have been given to exploring the views and priorities of older people themselves about their medication and how it might best be managed, in light of other important considerations in their lives.

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Appendices

Appendix 1: Care plan

Family Name:		First Name:	SS ID:
Preferred Name:		Date of Birth:	NHS no:
Address:			
Care managers name:	Tel no:		Hospital no:
Team:	Date of care plan:		
<hr/>			
Day	Time	Name of provider and tasks to be done	
<i>Monday</i>	• 08:00 – 09:00 (<i>morning care</i>)	<i>Independent sector provider (A)</i>	
		<ul style="list-style-type: none"> • Assist to get up • Assist to wash and get dressed • Empty commode • Prepare breakfast • Leave kitchen clean • Prompt medication • Make bed 	
	• 10:00 – 15:30 (<i>day centre</i>)	<i>Day centre</i>	
	• 17:00 – 18:00 (<i>tea call</i>)	<i>Independent sector provider (A)</i>	
		<ul style="list-style-type: none"> • Prepare a snack 	
	• 20:30 – 21:00 (<i>evening care</i>)	<i>Independent sector provider (B)</i>	
		<ul style="list-style-type: none"> • Assist to undress • Prepare a hot drink • Prompt medication • Assist into bed 	
<i>Tuesday</i>	<i>As Monday</i>	<i>As Monday</i>	
<i>Wednesday</i>	<i>As Monday</i>	<i>As Monday</i>	
<i>Thursday</i>	<i>As Monday</i>	<i>As Monday</i>	
<i>Friday</i>	<i>As Monday</i>	<i>As Monday</i>	
<i>Saturday</i>	• 08:00 – 09:00 (<i>morning care</i>)	<i>Independent sector provider (C)</i>	
		<ul style="list-style-type: none"> • Assist to get up • Assist to wash and get dressed • Empty commode • Prepare breakfast • Leave kitchen clean • Prompt medication • Make bed 	
	• 12:00 – 13:00 (<i>lunch call</i>)	<i>Independent sector provider (C)</i>	
		<ul style="list-style-type: none"> • Prepare hot meal • Leave kitchen clean 	
	• 17:00 – 18:00 (<i>tea call</i>)	<i>Independent sector provider (C)</i>	
		<ul style="list-style-type: none"> • Prepare a snack 	

	<ul style="list-style-type: none"> • 20:30 – 21:00 (evening care) 	<ul style="list-style-type: none"> • Leave kitchen clean <p><i>Independent sector provider (C)</i></p> <ul style="list-style-type: none"> • Assist to undress • Prepare a hot drink • Prompt medication • Assist into bed 			
<i>Sunday</i>	<i>As Saturday</i>	<i>As Saturday</i>			
<p>The people and organisations who provide your services Always remember to tell your service provider if you are not going to be at home</p>					
Name of provider organisation/agency	Type of service provided	Address	Phone number (include out of hours)	Named contact	Start date
	<i>Personal care Night settling</i>				
	<i>Day centre care</i>				
Emergency contact/key holder details					
Review timetable					
Your first/next review date is					
The care plan will then be reviewed after					

Appendix 2: Study information sheet

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November 2000

Medication Management: investigating patient safety when responsibility for medication related activities is transferred from district nursing to home care services

This brief outline of the project aims to provide an introduction for managers and respondents.

What is the study?

The past twenty years has seen great changes in district nursing and home care services and how they work together. The implementation of the NHS and Community Care Act 1990 demonstrated that interagency collaboration is crucial to successful care in the community. Despite some localised examples of district nursing and home care partnerships working, anecdotal evidence suggests that the delegation of medication related activities to home carers is problematic. This study will examine the difficulties in shared medication management and investigate the factors which determine effective collaboration in this aspect of care for community living older people.

What are the study methods and how will you be asked to help?

Stage 1 of the study will involve a series of semi-structured interviews with staff in Site A and Site B. A sample of District Nurses, Home Care Managers, Community Nurses and Home Carers across the study sites will be invited to take part in a one-to-one interview lasting approximately 40 minutes. This will focus on roles and responsibilities in medication management, problems practitioners encounter in this aspect of shared care and strategies to improve collaboration. Stage 2 will involve analysing trust and local authority incident forms in an attempt to identify the extent and nature of recorded adverse events in shared medication management.

All data will be treated in the strictest confidence and individuals will not be identifiable in any reports or outputs. Participation is entirely voluntary and informants are free to withdraw at any time without giving a reason. I appreciate I am asking busy staff who are under a lot of pressure to allocate some time to this study, but hope staff find the project of interest and relevance.

Who is carrying out the research?

The study is being undertaken by Caroline McGraw, a part-time nurse research fellow studying for an MPhil (funded through the research training provision of the North Central London Research Consortium). Caroline is also a staff nurse in the District Nursing Service. The study is being supervised by Vari Drennan (Senior Lecturer in Primary Care Nursing) in the Department of Primary Care and Population Science and Charlotte Humphrey (Professor of Health Care Evaluation) in the School of Nursing and Midwifery at Kings College London.

All proposals for research using human subjects are reviewed by an ethics committee before they proceed. This proposal was reviewed by the Site A Health Services NHS Trust Ethics Committee and Site B Medical Research/Ethics Committee. Support for the study has also been received from the British Association of Domiciliary Care Officers, the United Kingdom Home Care Association, Site B Social Care and Health Directorate and the Assistant Chief Social Services Officer for the London Borough of Site A.

Further information

If you have any queries please contact Caroline McGraw on 020 7288 3045 or Vari Drennan on 020 7288 3522

Appendix 3: Self administered questionnaire (district nursing)

ID number
Data entry

Medication Management: investigating patient safety when responsibility for medication related activities is transferred from district nursing to home care services

INTRODUCTION

Thank you for agreeing to take part in this study. I'd like you to answer some questions about yourself and your caseload before the interview. This short questionnaire should only take about 10 minutes to complete. All information you provide will be kept strictly confidential. Please bring the completed questionnaire to interview.

Question 1. Are you: <i>Please tick</i>		
Female	<input type="checkbox"/>	1
Male	<input type="checkbox"/>	2

Question 2. What is your job title: *Please write in*

Question 3.
(a) How long have you worked in your current post: <i>please write in</i>
(b) How long have you held a specialist community nursing qualification:

Question 4. Do you have any formal guidance on working with home care providers (for example joint operation guidelines)? *Please tick*

No 1

Yes 2

I will ask for a copy of this material at interview

Question 5. Please describe the size and skill mix in your district nursing team (excluding vacancies and agency staff). Number of full time equivalent:

(a) qualified district nurses _____

(b) registered nurses _____

(c) auxiliary nurses _____

Question 6. (a) Are there any vacancies in your district nursing team? *Please tick*

No GO TO QUESTION 7 1

Yes 2

Please describe (for example, grade of vacancy and whether filled by an agency nurse)

GO TO QUESTION 7

Question 7. What percentage of your patients live in: *Please write in*

(a) Residential homes: _____

(b) Sheltered or warden controlled accommodation: _____

Question 8. Do your patients live in: *Please tick*

Predominately privately owned housing 1

Predominately in local authority housing 2

Mixed privately owned and local authority housing 3

Question 9. Do your patients live in a: *Please tick*

Predominately urban area 1

Predominately rural area 2

Mixed urban/rural area 3

Question 10. Approximately how many patients, aged over 65 years, are there on your teams caseload? *Please write in*

Question 11. Approximately how many of your patients aged over 65 years are visited by a home carer? *Please write in*

Question 12. How many GP surgeries do you cover? *Please write in*

Are you based in the same premises as the GPs you cover? *Please write in*

Thank you for your participation
Please bring the completed questionnaire to interview

Caroline McGraw
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Appendix 4: Self-administered questionnaire (local authority coordinators)

ID number
Data entry

Medication Management: investigating patient safety when responsibility for medication related activities is transferred from district nursing to home care services

INTRODUCTION

Thank you for agreeing to take part in this study. I'd like you to answer some questions about you and your caseload before the interview. This short questionnaire should only take 10 minutes to complete. All information you provide will be kept strictly confidential. Please bring the completed questionnaire to interview.

Question 1. Are you: *Please tick*

Female	<input type="checkbox"/>	1
Male	<input type="checkbox"/>	2

Question 2. What is your job title: *Please write in*

Question 3.

(a) How long have you worked in your current post:
Please write in

(b) How long have you worked in home care generally:

Question 4. Does your local authority offer home carers opportunity to attend medication related training? *Please tick*

No	<input type="checkbox"/>	1
Yes	<input type="checkbox"/>	2

Please describe

Question 5. Do you provide home carers with any guidance notes/procedures for helping clients with their medication (excluding the care plan)? *please tick*

No 1

Yes 2

I will ask for a copy of this documentation at interview

Question 6. Do you have any formal guidance on working with district nurses (for example joint operational guidelines)? *Please tick*

No 1

Yes 2

I will ask for a copy of this documentation at interview

Question 7. Please describe the size and skill mix of your home care team. Number of full time equivalent:

(a) Senior home carers _____

(b) Home carers _____

(c) Others _____

Please describe

Question 8. Are there any vacancies in your home care team: *Please tick*

No 1

Yes 2

Please describe

Question 9. Do your clients live: *Please tick*

Mostly in private housing 1

Mostly in local authority housing 2

Mixed private and local authority housing 3

Question 10. Do your clients live in a: *Please tick*

Mostly urban area 1

Mostly rural area 2

Mixed urban/rural area 3

Question 11. What percentage of your clients live in sheltered or warden controlled accommodation?
Please write in

Question 12. Approximately, how many clients, aged over 65 years, are there on your teams caseload? *Please write in*

Question 13. Approximately what percentage of your clients aged over 65 years are visited by a district nurse? *Please write in*

Thank you for your participation
Please bring the completed questionnaire to interview

Caroline McGraw
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Appendix 5: Self-administered questionnaire (home carers)

ID number
Data entry

Medication Management: investigating patient safety when responsibility for medication related activities is transferred from district nursing to home care services

INTRODUCTION

Thank you for agreeing to take part in this study. I'd like you to answer some questions about you and your clients before the interview. This short questionnaire should only take about 10 minutes to fill in. All information you provide will be kept strictly confidential. Please bring the completed questionnaire to interview.

Question 1. Are you: <i>Please tick</i>		
Female	<input type="checkbox"/>	1
Male	<input type="checkbox"/>	2

Question 2. What is your job title: *Please write in*

Question 3. (a) How long have you worked as a member of the home care staff in this organisation? <i>Please write in</i>
(b) How long have you worked in home care generally: <i>Please write in</i>

Question 4. What paid/unpaid work did you do prior to working in home care? <i>Please write in</i>

Question 5. What qualifications to you have relevant to your work as a home carer/home help: <i>Please write in (for example, NVQ Level 2)</i>

Question 6. In your current job have you had any training specifically about helping clients with their pills and medicines (not including 'on the job training'): *Please tick*

- No GO TO QUESTION 7 1
- Yes 2

If you've had training about helping clients with their pills and medicines:

Use a separate box for each training event

What was the training or what were the learning outcomes	When was the training	How many hours did the training last

Question 7. Are you given any guidance notes/procedures for helping clients with their pills and medications (other than the care plan): *Please tick*

- No 1
- Yes 2

Please bring a copy of it to interview

Question 8. Roughly, what percentage of your clients live in sheltered or warden controlled accommodation: *Please write in*

Question 9. Do your clients live in: *Please tick*

- Mostly privately owned housing 1
- Mostly rented accommodation 2
- Mixed privately owned and rented accommodation 3

Question 10. Do your clients live in: *Please tick*

- Mostly urban area 1
- Mostly rural area 2
- Mixed urban/rural area 3

Question 11. Are you on the National Register for Carers: *Please tick*

- No 1
- Yes 2

**Thank you for your participation
Please bring the completed questionnaire to interview**

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Appendix 6: Self-administered questionnaire (independent coordinator)

ID number

Data entry

Medication management: investigating patient safety when responsibility for medication related activities is transferred from district nursing to home care services

INTRODUCTION

Thank you for agreeing to take part in this study. I'd like you to answer some questions about yourself and your caseload before the interview. This short questionnaire should only take 10 minutes to complete. All information you provide will be kept strictly confidential. Please bring the completed questionnaire to interview.

Question 1. Are you: <i>Please tick</i>		
Female	<input type="checkbox"/>	1
Male	<input type="checkbox"/>	2

Question 2.

(a) How long have you worked as a home care manager in this organisation:

(b) How long have you worked in home care generally:

Question 3. Does your organisation offer home carers the opportunity to attend training (not including 'on the job' training) in medication management? *please tick*

No 1

Yes 2
please describe

Question 4. Do you provide home carers with any guidance notes/procedures for helping clients with their medication (excluding the care plan): <i>please tick</i>		
No	<input type="checkbox"/>	1
Yes	<input type="checkbox"/>	2
<i>I will ask for a copy of this documentation at interview</i>		

Question 5. Please describe the size and skill mix of the home care team you directly manage.
Number of full time equivalent:

(a) senior home carers: _____

(b) home carers: _____

(c) others: _____

Please describe

Question 6. Do your clients live in: *please tick*

Mostly owner occupied housing [] 1

Mostly rented accommodation [] 2

Mixed owner occupied/rented accommodation [] 3

Question 7. Do your clients live in a: *please tick*

Mostly urban area [] 1

Mostly rural area [] 2

Mixed urban/rural area [] 3

Question 8. What percentage of your clients live in sheltered or warden controlled accommodation?
Please write in

Question 9. Is your organisation: *please tick*

Private - for profit [] 1

Not for profit [] 2

Voluntary [] 3

Question 10. Is your organisation a member of the United Kingdom Home Care Association: *please tick*

No	<input type="checkbox"/>	1
Yes	<input type="checkbox"/>	2
Other	<input type="checkbox"/>	4

Question 11. What kind of contract do you have with the local authority: *please tick*

Spot	<input type="checkbox"/>	1
Block	<input type="checkbox"/>	2
Other	<input type="checkbox"/>	4

please write in

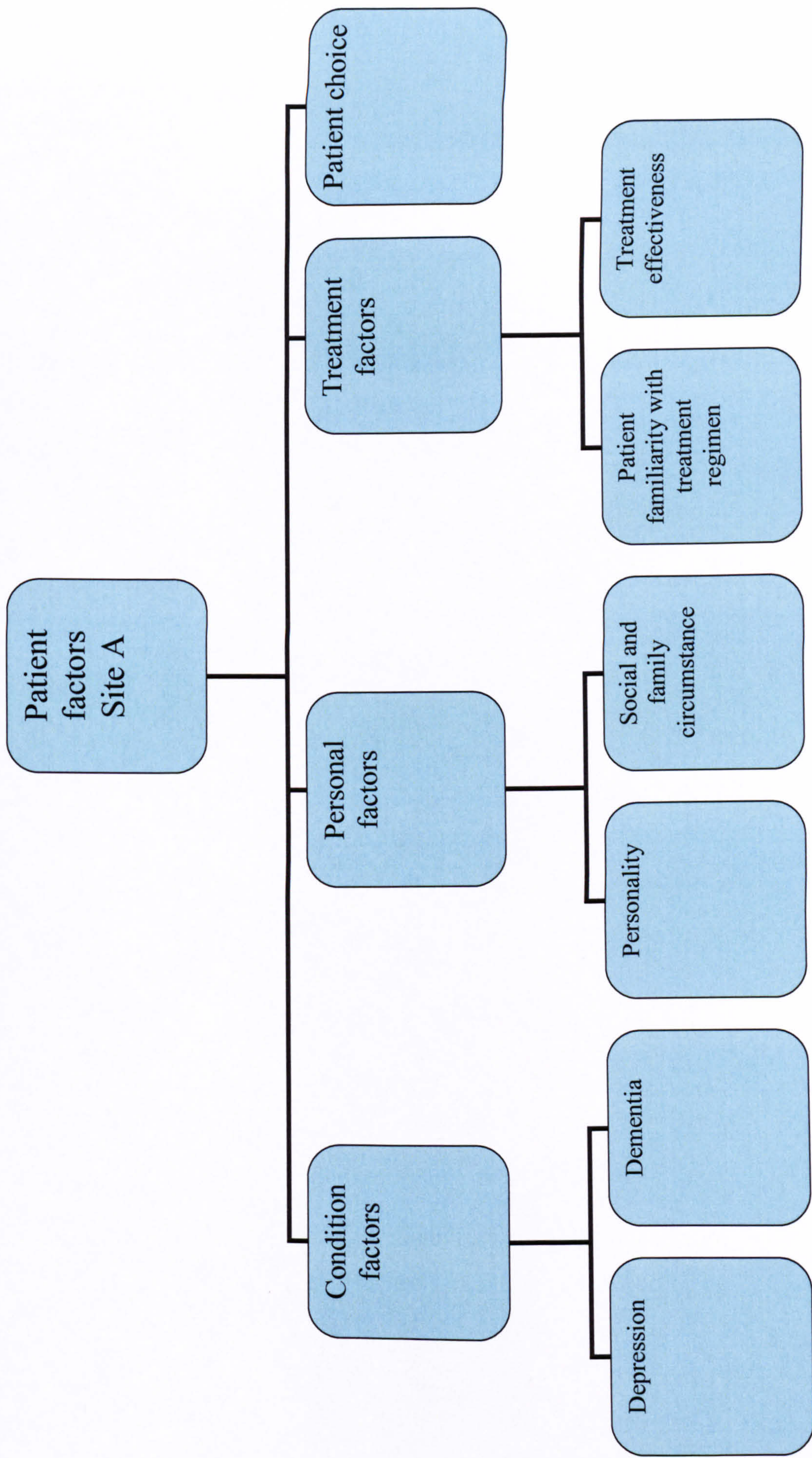
Question 12. Approximately, how many clients, aged over 65 years, are there on your teams caseload? *please write in*

Question 13. Approximately what percentage of your clients aged over 65 years are visited by a district nurse? *Please write in*

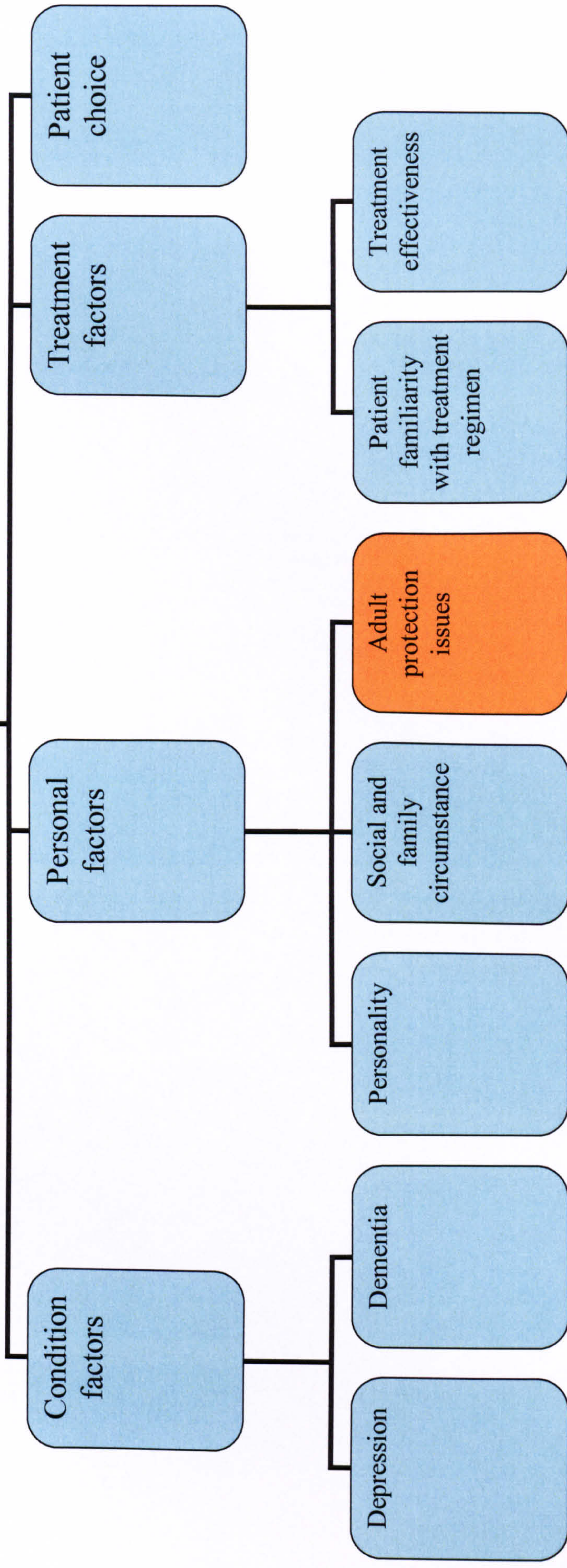
Thank you for your participation
Please bring the completed questionnaire to interview

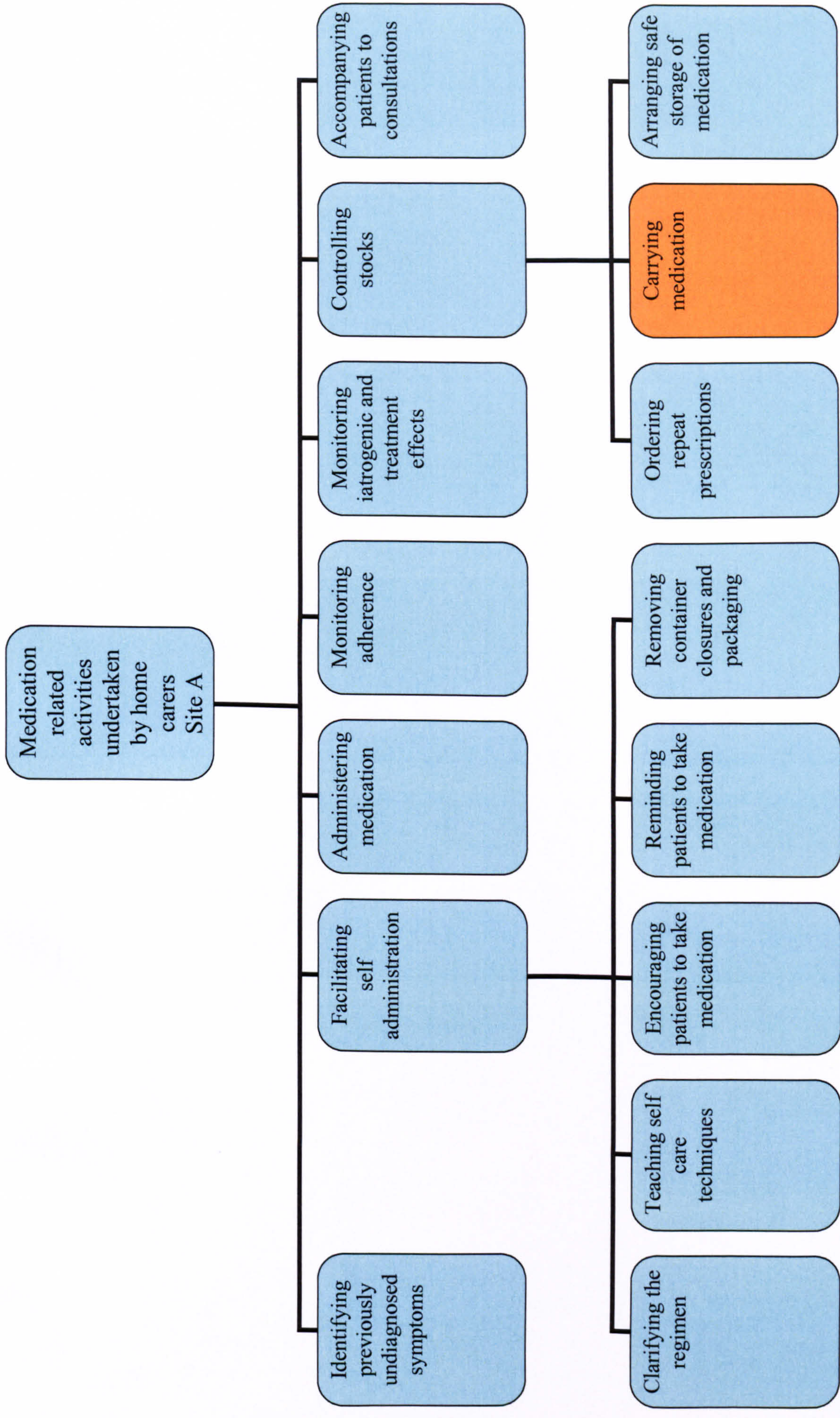
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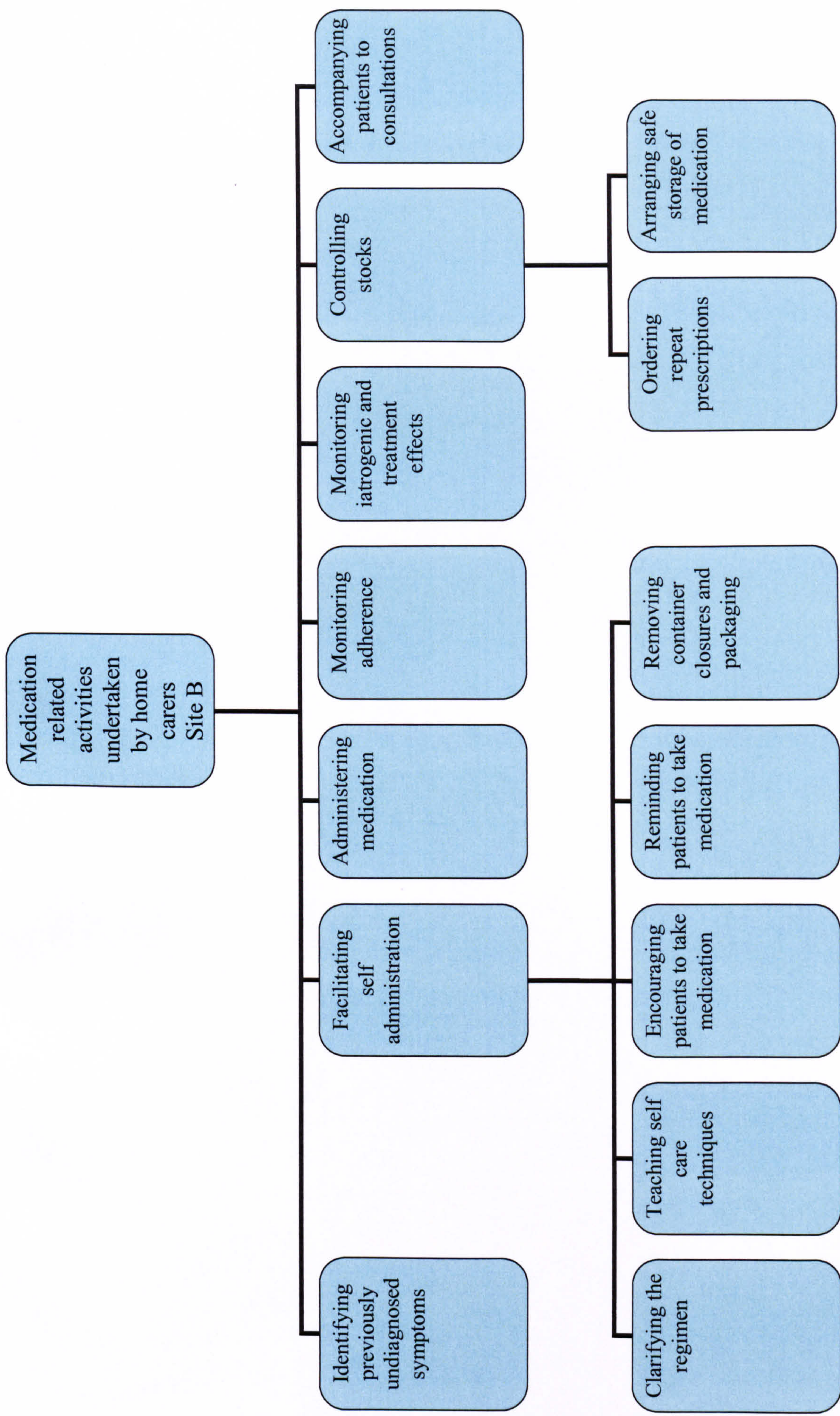
Appendix 7: Selection of visual representations



Patient factors Site B







Appendix 8: Medication record chart

MEDICATION ADMINISTRATION RECORD

NAME:

DOB:

GP:

ALL MEDICATION TO BE GIVEN BY MORNING HOME CARER

Initial each box when medication given

Date (please insert)							
Day	Mon	Tues	Wed	Thu	Fri	Sat	Sun
ASPIRIN 75 mg 1 tablet daily							
GLIBENCLAMIDE 5mg 2 tablets each morning							
ATENOLOL 50mg 1 tablet each morning							
CORACTEN XL M/R 30mg 1 capsule each morning							

Date (please insert)							
Day	Mon	Tues	Wed	Thu	Fri	Sat	Sun
ASPIRIN 75 mg 1 tablet daily							
GLIBENCLAMIDE 5mg 2 tablets each morning							
ATENOLOL 50mg 1 tablet each morning							
CORACTEN XL M/R 30mg 1 capsule each morning							