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A Supply Chain Management Approach for Home Care Re-ablement in the North West of England

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

March 2015

Abstract

There are critical concerns regarding the current state of the adult social care system in England. A number of factors such as the steady increase in life expectancy, financial cutbacks, and growing inefficiencies within the current system highlight the need for major reform. The prevalence of our aging population is increasing, and the financial burden associated with care continues to rise. Both acute and long-term care are affected equally. These changes are placing significant strain on adult social care, prompting the need for management efficiencies and more transparent information flow to ensure the efficient and effective delivery of health and social care. A major focus on early intervention and prevention services, such as home care re-ablement, is important because of the cost implications associated with providing excellent care to older people whilst offering options where possible to improve quality of life and incorporate patient preference.

To understand how improvements can be made to the current care system, evidence is drawn from case-study analysis of Wirral, Liverpool and Knowsley, along with an in-depth literature review. This thesis highlights a multitude of issues affecting adult social care. The most significant findings during data collection were the obvious similarities between supply chain theory and concepts within social care and home care re-ablement. Where applicable, supply chain principles can bridge the gap and facilitate more streamlined coordination spanning multiple care providers in the supply network and reduce redundancies in the operation design, planning and control processes. As supply chain theory is fundamental to many adjacent faculties, this thesis strongly supports its use and application to social care and re-ablement. Fundamental supply chain management principles are not new, yet application of them to adult social care is unconventional and innovative. Development of an appropriate supply chain management infrastructure is essential to dramatically re-shape the future of adult social care.

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Acronyms and Abbreviations

A&E	Accident and Emergency
ASCOF	Adult Social Care Outcomes Framework
ASSR	Adult Social Services Responsibilities
APS	Advance Planning and Scheduling
ART	Assessment Re-ablement Team
ADASS	Association of Directors of Adult Social Services
ADCS	Association of Directors of Children's Services
BDP	Bournemouth, Dorset and Poole
BUPA	British United Provident Association
CASSRs	Councils with Adult Social Services Responsibilities
COPD	Chronic Obstructive Pulmonary Disease
CPFR	Collaborative Planning, Forecasting and Replenishment
CCG	Clinical Commissioning Group
DASS	Department of Adult Social Services
ERP	Enterprise Resource Planning
FACS	Fair Access to Care Services
GP	General Practitioner
GDSN	Global Data Synchronisation Network
GLN	Global Location Numbers
GTIN	Global Trade Identification Number
HSCIC	Health and Social Care Information Centre
ICT	Information and Communication Technology
IPC	Institute of Public Care
JSNA	Joint Strategic Needs Assessment

LA	Local Authority
LGA	Local Government Association
NHS	National Health Service
NSF	National Service Framework
OT	Occupational Therapist
PCT	Primary Care Trust
RFID	Radio Frequency Identification
rHIS	Regional Health Information Systems
STAR	Short Term Assessment and Re-ablement
SCIE	Social Care Institute For Excellence
SSD	Social Services Department
SRM	Supplier Relationship Management
SCC	Supply Chain Council
SCM	Supply Chain Management
SCOR	Supply Chain Operations Reference
TLAP	Think Local Act Personal
UK	United Kingdom
USA	United States of America
VMI	Vendor Managed Inventory

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Acknowledgement

Undertaking this PhD has truly been a life-changing experience for me. It would not have been possible without the support and guidance that I have received from the following individuals:

I would like to thank my PhD supervisor, Dr. Paul Drake, for his support and knowledgeable guidance throughout. His frequent insight and patience enabled me to accomplish far more than I ever imagined. I am truly grateful for his steadfast integrity, and selfless dedication to both my personal and academic development. He always found the time to review and critique every word! I owe a great deal of gratitude to Paul. He has been a tremendous mentor for me and I thank him most of all for his sense of humor, brilliant comments and suggestions. The completion of this thesis would not have been possible without him.

I would also like to thank the Wirral Council along with the staff at Wirral STAR, Adult Services and Health in Liverpool, and Knowsley Home Care Reablement for their time, cooperation and patience throughout the research.

A heartfelt thank you to my parents for all the moral support and the amazing chances they have given me over the years. I love them so much, and thank them for their constant encouragement. Your prayer for me is what has sustained me throughout this endeavor.

Thank you to my father-in-law and mother-in-law for their advice, support, love and baby-sitting services. I am truly blessed with a loving, caring and supportive family who always put my needs before their own. Thank you for all of the sacrifices you have made on my behalf. I love you both very much.

Last, but not least, I would like to dedicate this acknowledgement to my beloved husband, Chris, who has been – and still is - by my side giving constant support and encouragement to me throughout the entire PhD, and without whom I would not have had the courage to embark on this journey in the first place. To my darling Viktoria, thank you for making it possible for me to complete what I have started. I owe so much to you both, without whose love and understanding I would not have completed this work. I love you. xxx

Chapter 1: Introduction

This thesis presents research into the adult social care environment and its management. There is a particular interest in home care re-ablement because of its connection to health and adult social care, and the application of supply chain management. Home care re-ablement is a short-term intermediate care service that responds to a range of health and social care needs and helps adults to remain independent, by giving them the opportunity to relearn or regain some of the skills for independent daily living that may have been lost as a result of illness, accident or disability (Social Care Institute for Excellence, 2013; Think Local Act Personal, 2014). Supply chain management (SCM) is the management of the organisations linked together to provide goods and services to the ultimate consumer (Slack et al., 2007). Since supply chains are necessary for the provision of services through multiple agencies, supply chains do apply in adult social care.

With the key objectives being to enable independent living and to reduce the need for care, home care re-ablement is becoming central to the health and social care system (Glendinning et al., 2010; Social Care Institute for Excellence, 2013; Parker, 2014). Many re-ablement services are joint ventures whereby local authorities and the National Health Service (NHS) are investing together to reduce the level of need for care and to prevent unnecessary hospitalisation or bed-blocking; people in need of this service have both health and social care needs. This is a major undertaking since hospital admissions or re-admissions are likely to increase; the oldest age group (85+) consumes three times as much health care per person as those aged 65-74, and twice as much as those aged 75-84 (Alemayehu and Warner, 2004). "Elderly people account for a bigger proportion of

NHS hospital activity every year, with the number treated growing at a much faster rate over the last decade compared to any other age group" (NHS Information Centre, 2010). The number of older people going to casualty has increased in recent years (Social Care Institute for Excellence, 2014). The continued increase in hospitalisation of older people is a significant and complex issue facing health care services in terms of cost and bed-blocking. In 2009/10, local authorities spent £10.6bn on adult social care, compared with £9.8bn in 2012/13, a reduction of 7% (Ismail et al., 2014); one-fifth of emergency admissions to hospital are for existing conditions that primary, community or social care could manage (National Audit Office, 2014). Cuts in spending have been accompanied by reductions in the number of older people receiving publically funded services, particularly in the community; it is highly likely that reduced spending on adult social care is having a negative effect on the NHS. Because of the visible constraints to local authorities, there is enormous need for the NHS and central government to have a clear understanding of the relationship between preventative care services and the wellbeing and health of older people (Ismail et al., 2014); preventative care is a major priority for central and local government (Faulkner and Sweeney, 2011; Department of Health, 2012; Department of Health, 2013). However, publically funded social care continues to be rationed first on the basis of a needs assessment and second on people's income and assets (Ismail et al., 2014).

The need for greater investment in prevention and rehabilitation services became clear over a decade ago (Stevenson, 1999; Glendinning & Newbronner, 2008; Glendinning et al., 2010). Since then the Health Select Committee has recommended a move toward a

more preventative system (Carr-West, 2012). A service that is geared towards prevention helps to reduce cost and delivers better outcomes (Tinetti et al., 2002; McLeod and Mari, 2009; Ryburn et al., 2009; Glendinning et al., 2010), and is associated with improvements in the health and wellbeing of the people using the service. Thus a major focus on early intervention and prevention services is important because of the cost implications associated with people aged 65 and older.

This thesis provides knowledge and guidance to senior managers in local authorities about a holistic supply chain management approach to social care. Local authorities are responsible for ensuring the provision of adult social care and for assessing people's needs for community care or social care services, arranging or providing these services, and possibly providing financial support to meet assessed needs (Age UK, 2014). Local authorities (LAs) means-

i. a county council in England,
ii. a district council for an area in England for which there is no county council,
iii. a London borough council, or
iv. the Common Council of the City of London (HM Government, 2000).

There appears to be no holistic supply chain management approach reported that facilitates an understanding of supply networks and their management, in any industrial context, in social care (Bourlakis et al., 2011). This thesis addresses this gap through an

in-depth focus on how adult social care services are managed throughout local authorities, with a particular interest in home care re-ablement. The research, carried out in collaboration with the adult social services departments of several local government authorities in England, demonstrated similar inherent complexities within re-ablement services such as fragmented supply networks, lack of collaboration between health and social care providers, inadequate information and communications technology (ICT) for data sharing, changing demographics, rising consumer expectations and demands, and economic factors. The evidence is drawn from case-study analysis of: Wirral, Liverpool and Knowsley. The case-study analyses revealed challenges and complexities for which supply chain management practices could provide solutions. Since existing evidence of the application of supply chain management theory to social care is very limited, the application of supply chain management theory within other industries/sectors is used to address the same issues as those seen in contemporary social care, i.e. knowledge is transferred across sectors. The practices adopted in other sectors are considered to provide lessons that might be useful to senior managers for their home care re-ablement service.

The home care re-ablement supply chain framework developed in this thesis is original work. Despite the appeal of the home care re-ablement service model, it has lacked a robust body of research to help drive the evolution and adoption of supporting supply chain management theory. Despite limited evidence of supply chain management theory in social care, interest in supply chain management theory has grown within health care mainly to improve performance in terms of cost and availability (Plantin and Johansson,

2012). The NHS is implementing concepts that are grounded in supply chain management theory. For example Kaizen, meaning continuous improvement, is being applied by many NHS hospitals. Unlike the NHS, local authorities are not using supply chain management theory to capture similar process improvements for re-ablement. The goal of this thesis is to relate the theories and principles of supply chain management to home care re-ablement in order to improve access to care, enhance care coordination, and to achieve improved health and care outcomes and consumer experience.

1.1. Background

The adult social care economy in England is changing rapidly. This is due to the aging population, to finite financial resources, the public spending cuts, and fragmented supply networks. These are placing a critical strain on adult social care, so that management efficiencies and better control processes are required, along with more transparent information flows in order to ensure the efficient and effective delivery of health and social care. To this end, an appropriate supply chain management framework may be needed to dramatically re-shape the future of the adult social care system.

The critical importance of good supply chain management is understood in the manufacturing industry, and is gaining momentum throughout the service sector. Currently, the adult social care sector had received limited or no attention in terms of formal supply chain management. Introducing the concept of supply chain management to local authorities is important because of the challenges many of them face; without

such attention it would be difficult to advance theory and practice (Kodner and Spreeuwenburg, 2002). Unlike manufactured goods which are physical or tangible, adult social care provides an intangible product whereby services rendered are based on a client's experience. However, there are similarities between both industries as both must co-produce with external suppliers and other parties to design and deliver a product that meets a client's needs and expectations.

For three reasons, this thesis highlights home care re-ablement as the focal point linking health and adult social care. Firstly, the service by definition is intended to have a very high impact on older people's health, wellbeing and level of independence because a carer assists a person rather than 'doing for them'. Secondly, it has a great potential to reduce the amount of money spent on health care and long-term care services as it aims to reduce the need for unnecessary health and long-term care. Thirdly, discharging people out of hospital efficiently and effectively is going to address the 'bed-blocking' problem whereby there is a bottleneck in getting patients out of hospital and back into independent living at home.

1.2. Statement of problem

There are several documents available to the public that capture the state of care for older people. For example, several articles are posted on the British Broadcasting Corporation (BBC) website with statements such as "Councils, which are in charge of providing support to the elderly and disabled, say they are struggling to keep pace with demand"

(BBC, 2012a), "Care for elderly let down by fragmented system" (BBC, 2012b) and "Overhaul in approach to elderly care needed" (BBC, 2012c). These represent a few of the many articles that dominate and question the sustainability of the adult social care system, but do not suggest or refer to strategies for dealing with the issues.

Adult social care in England is riddled with problems and continues to be a major concern throughout many local authorities (BBC, 2012a; Ham et al., 2012; HM Government, 2012; Priest, 2012; Local Government Association, 2013). Health and social care are often uncoordinated and spread across various organisational functions with each individual function having its own budget, priorities and performance measures (BBC, 2012c). The committee's report discusses the integration issues between the National Health Service (NHS) and social care and states: "A new, integrated legal framework is required which supports integration of health, social care and other services around the needs of the individual" (The Health Select Committee, 2012). The current system is extremely complex. The House of Commons Public Expenditure (2012) report states "better integration and coordination of health and social care is accepted as a vital component of improving the quality of services and making necessary gains". Since people benefit from improved care coordination, it is mission-critical that health and social care achieve better integration of care services. Since no one integration model is right for all local authorities and settings, integration is best viewed as a continuum, ranging from collaboration to fully integrated co-located systems of care.

In the Health Select Committee's recent report on Public Expenditure (2012), there is clear evidence that local authorities are under enormous financial pressure due to government budget cuts. The implementation of an appropriate supply chain management approach presents a great opportunity for local authorities seeking to reduce costs and gain new efficiencies. There is a perpetual need to support improvements in health and social care supply chains due to shrinking budgets and increasing costs incurred by families.

To understand how improvements can be made to the current care system, this thesis highlights a multitude of complex issues surrounding the adult social care environment, including how local authorities vary with respect to fragmented social care funding and eligibility. From the public's perspective, it is difficult to understand how adult social care works because it lacks organisation, integration and coordination. This research promotes better coordination among different parts of our health and social care system by eliminating service delivery silos.

1.3. Research questions

This thesis has a number of inter-related objectives. It intends to examine and address barriers to efficient and effective adult social care by completing a broad environment scan of the system and to find answers to the following questions:

1) How is home care re-ablement strategically managed within local authorities?

2) What are the main barriers to efficient and effective home care re-ablement?

3) How could a supply chain management approach reduce cost and improve quality in social care?

1.4. Thesis objectives

In line with the three research questions mentioned, the first objective of this thesis is to contribute to supply chain management theory and to recommend solutions based on the findings. It is important that local authorities operate strategically and systematically by focusing their entire supply chain toward one objective- the operational efficiency of home care re-ablement. Whilst suppliers within a local authority have common interests, it is important to keep in mind the extent to which they are disjointed.

The second objective of this thesis is to explore how information, material and financial flows of local authorities can be efficiently and effectively coordinated across multiple health and social care organisations. At present, coordination efforts are mostly fragmented and include multiple care providers. In addition, there is currently no single, accredited training programme for re-ablement workers so the skill mix is different across local authorities (Social Care Institute for Excellence, 2012). The current home care re-ablement system is fragmented, unstructured and inconsistent in its approach to help people remain in their home independently because local authorities manage home care

re-ablement services. This thesis identifies opportunities that can enable coordination spanning multiple care providers in the supply network and reduce redundancies in the operation's design, planning and control processes. It does not attempt to explore mathematical or quantitative models of how networks can be optimised as this is not within the scope of this thesis.

The third objective is to identify and analyse the current strategic management planning methods of the case study local authorities and to translate their practices into supply chain management theory. This would link to, draw upon, and synthesise existing knowledge of supply chain management and address system-level barriers in adult social care.

1.5. Research framework

To achieve a contextual understanding, qualitative research methods are going to be used to collect data about adult social care. Several data collection techniques are going to be used in three local authorities: discussions, observations, documents and case-study research. These are going to be used to gain a comprehensive understanding of each local authority's home care re-ablement service so that fundamental changes can be made.

A qualitative methodology will provide answers to questions about local councils' adult social care services that were not possible to capture quantitatively. Data triangulation will be used to avoid potential issues that could arise from single case-study analyses. Triangulation involved multiple-data sources in order to support a principle theory. Of the plethora of different approaches that could be applied to this research, inductive reasoning is going to be the preferred option to represent the objectives discussed.

A qualitative method will be used after multiple forms of literature on "research methods" are reviewed (Danity, 1991; Denzin and Lincoln, 1994; Pettigrew, 1996; Houghton et al., 2013). Traditional methods in the form of action research, case studies discussions, observations, and documents are going to be used to analyse and report qualitative data (Corbin and Strauss, 1990; Kvale, 1996; Houghton et al., 2013). The work produced by participants through these various data collecting techniques constitutes an integral component of the research process. Despite the growing significance of supply chain management in other sectors such as manufacturing and health care, supply chain management concepts have not evolved within adult social care.

Local councils with adult social care responsibilities still struggle with creating a framework and the best ways to manage their operational activities. They continue to seek out best practices for identifying and managing key problems of home care re-ablement that require a better approach. The most salient feature throughout the data collection process was the lack of research and awareness of supply chain management

concepts among adult social care managers; a supply chain management approach should be seen as a valuable resource to local authorities. Reforming adult social care has become such a major political and social issue yet what is really needed is systematic implementation to design and manage the whole system of care.

1.6. Significance of research

The concept of supply chain management is not a new concept in industries such as manufacturing and retailing; looking around the current health and social care situation shows that local authorities are currently implementing supply chain management techniques to overcome obstacles and issues, typically without explicitly realising this. Unlike other industries, adult social care has not proceeded to explore the full rich set of supply chain management techniques in order to ensure continuity of care and reduce overall health and social care costs. Based on the language used throughout several documents from local authorities, links can be made within common supply-chain terminology and practice to improve the cost and quality of the service. Fundamental supply chain management principles are not new, yet application of them to home care re-ablement is unconventional and innovative.

1.7. Assumptions and limitations

This study provides several crucial assumptions. Firstly, the underlying assumption is that a supply chain management approach could be adopted to create a more efficient and

effective home care re-ablement service. This is carefully determined once data is collected from several local authorities; only data from some of the 152 local authorities was collected due to time and budget constraints. Secondly, evidence from the case studies is used to identify the barriers to effective and efficient home care re-ablement affecting health and adult social care in their communities. Data was collected from three local authorities, then documents from other local authorities was used to triangulate findings from discussions with managers. Thirdly, discussions with managers from other local authorities indicate a need for better care integration because of care demand fluctuations and budget constraints; the barriers identified by these discussions may or may not be viewed as barriers by other local authorities.

1.8. Organisation of thesis

i. Chapter 2 examines several national policy documents that relate to England's adult social care system, and reviews the extant literature to build the theoretical and contextual framework in which this thesis is embedded.

ii. Chapter 3 presents methodologies and relevant methodological issues utilised in this research.

iii. Chapter 4 analyses the role of home care re-ablement and its connection to health and adult social care.

iv. Chapter 5 identifies the key barriers to efficient and effective home care re-ablement in England.

v. Chapter 6 describes how local authorities can adopt supply chain management to address these barriers.

vi. Chapter 7 focuses entirely on Wirral and how it can use the Supply-Chain Operations Reference (SCOR) model as a diagnostic tool.

vii. Chapter 8 provides background information on logistics planning and its link to home care re-ablement.

viii. Chapter 9, following the theoretical and empirical studies presented in previous chapters, provides a summary of the work to date, the main contributions of this thesis for the field of home care re-ablement and supply chain management, and identifies particular issues and concerns that deserve further consideration.

Chapter 2: Literature Review

The chapter focuses on government policy documents related to improving the integration of health and adult social care services which are central to home care re-ablement. Integrating health and social care is crucial in order to meet the needs of an aging population (Dodd and Allen, 2014). Before examining why home care re-ablement has become so important to health and social care services, it is helpful to discuss its history in order to gain an understanding of the current situation. The research carried out reveals problems for which supply chain management practices could provide solutions.

2.1. Historical background and national context

To offer a comprehensive review of the conceptual and empirical issues currently relevant to the adult social care system, it is essential first to describe the origins in which many of today's social care issues are embedded. This particular sector continues to suffer from a number of inherent problems such as a fragmented supply network, postcode lottery of funding and standards, lack of collaboration between health and social care organisations, and inadequate information technology for data sharing (Hopson, 2013). These problems affect both health and local authorities, and older people.

The adult social care concept has been in existence in England since Medieval times. Historically, health care and social care were jointly administered under the Poor Laws,

which were first passed in 1598 and continued until 1948 (Thane, 2009). This all changed after the National Assistance Act of 1948 (NAA), and the key components of the "Welfare State" were understood as being social security, health, housing, education and social services (Spicker, 2002). Because of finite resources and power struggles between the central government and local authorities, strong arguments led to an administrative division between health care and social care services. Health care services are "free at the point of delivery" and funding is provided to the National Health Service (NHS) directly by the central government, whereas, funding for adult social care is from multiple sources and the responsibility of local authorities. The divide between these two systems has been and continues to be one of the most controversial issues of modern health and social policy (Glasby and Littlechild, 2004; Glasby, 2012; Timmins, 2013; The King's Fund, 2014; Triggle, 2014). To encourage health and social care services to work more closely together in local areas government will introduce a £5.3 billion pooled budget for health and social care services, known as the Better Care Fund, in 2015/16 (Local Government Association, 2013; Triggle, 2014). The idea behind the Better Care Fund is to get social care workers to join up with health staff, such as district nurses, physiotherapists, and occupational therapists, to provide seven-day-a-week support for older people (Triggle, 2014). Despite many legislative attempts by the central government to achieve greater integration between health and social-care services, the divisions between them still co-exist (Priest, 2012). If greater integration between health and social care services does not happen it is going to place pressure on accident and emergency (A&E) departments since older people will not be accessing appropriate primary care, community care or social services (Morse, 2013). There are major

fundamental differences in the way health and social care services are delivered and paid for and a clearer approach to care and support is needed in order to overcome the division between them.

2.2. Defining adult social care

Many definitions of adult social care exist even within the UK Government documents.

Table 1: Definitions of adult social care in England

Source	Definition
The Health Committee (2012)	"Adult social care includes all forms of personal care and other practical assistance for individuals who, by reason of age, illness, disability, pregnancy, childbirth, dependence on alcohol or drugs, or any other similar circumstances, are in need of such care or assistance".
The Dilnot Commission (2011)	"Social care assists individuals with certain physical, cognitive or age-related conditions in carrying out personal care or domestic routines. It helps people to sustain involvement in work, education, learning, leisure and other social support systems. It supports people in building social relationships and participating fully in society".
Law Commission (2011)	"By *adult social care,* we mean the responsibilities of local social services authorities towards adults who need extra support. This includes older people, people with learning disabilities, physically disabled people, people with mental health problems and carers. Adult social care services include the provision of care homes, day centres, equipment and adaptations, meals and home care. It also includes the mechanisms for delivering these services, such as community care assessments, carers' assessments, personal budgets and direct payments, and adult protection procedures".

In summary, the key principles that have emerged from Table 1 are:

i. Care and support is to be provided to individuals who need it because of older age, physical disability, long-term illness, learning disability, or mental illness.

ii. Local authorities are responsible for social care services. Only those with assets under £23,250 get help from the state, whilst those who do not qualify for publically-funded care services pay out-of-pocket for social care services (Triggle, 2014).

A contentious issue facing adult social care is the lack of a universally accepted definition of adult social care. There are many definitions but clarity is required in order to design good solutions; a system must have a clear objective before it can be properly designed. Without the adoption of a uniform definition accepted by government, local authorities and health authorities, confusion will inhibit any further development of adult social care. As a result, "the provision of services to individuals takes place in unconnected silos by the NHS, by local authorities and by the voluntary and independent sectors" (House of Commons Health Committee, 2012; The King's Fund, 2014). The lack of a unifying definition for health and social care makes it difficult for local authorities to deliver a joined-up, integrated service in an efficient manner (Parker, 2014). In order to eliminate the confusion between health and social-care services, a working definition is proposed to help explain what it is so that the right care is provided, since some older people need access to a wide range of services.

2.3. The role of local authorities

There are major differences between the NHS and local government funding for adult social care. The NHS provides a minimum standard of services to the entire population and is funded by taxation and national insurance contributions. In contrast, individuals are subject to means-testing to determine if they are eligible for free social care; only those with very high needs receive publicly-funded support (The King's Fund, 2014). Most people will have to pay for some or all of their social care and support. Funding comes from multiple sources including central government funds that are allocated to the local council; council tax revenues; individuals' contributions to their council care package, and/or to services arranged independently (Poole, 2009). Local funding variations most often result in what is referred to as the "funding gap" in social care services; the gap between the amount of care needed and the amount of money that is currently available for care (The Health Committee, 2012). The adult social care sector faces great uncertainty due to public spending cuts, making integrated health and social care services difficult to achieve. This has an adverse affect on the quality and delivery of services. People who have to pay for all of their care can of course opt out of the public offering and instead go private, i.e. making their own arrangements.

An analysis of the current adult social care system reveals that it is complex and considerable challenges and barriers to change it exist within it (Law Commission, 2011; The Health Committee, 2012; The King's Fund, 2014). The need to improve efficiency

and effectiveness of care for older people in the community is currently being driven by two major factors.

Firstly, the number of older people is increasing (Department of Health, 2010b), so that demand for adult social care services is growing in range and volume. This has considerable consequences for care services, such as spiraling higher health care costs, if appropriate measures are not implemented. According to the World Health Organization (2012), better integration between health and social care services is crucial to achieving efficiency and effectiveness. Where local authorities have begun to work in partnership with the NHS a broader range of services has become available in the community (Glendinning, 2003). *The Operating Framework for the NHS in England 2012/13* describes the funding arrangements between primary care trusts (PCTs) and local authorities to develop adult social care services. Local authorities are responsible for making decisions regarding the delivery of care services in the most efficient, effective and economic way. This thesis describes how one part of the service in particular, "home care re-ablement", best supports and coordinates care across health and social services.

Secondly, what can be described as the privatisation or commissioning or outsourcing of care services from the independent sector is transforming local authorities' existing provision of adult social care services. This is fundamentally changing the role of local authorities from provider of care to broker, facilitating service arrangements with providers of care for the service user. In order to achieve greater connectivity and

collaboration, local authorities need to work beyond the boundaries of adult social care to incorporate other services such as health and the independent care sector. Working across boundaries of care is an issue for local authorities in terms of funding streams, professional roles/responsibilities, and procedures. This led to a number of projects within the Modernising Adult Social Care (MASC) research initiative that have been funded and supported by the Department of Health (Department of Health, 1998; Department of Health, 2007).

2.4. Modernising adult social care

"Modernising Adult Social Care" (MASC) is a reform programme that was initiated by the Department of Health in 1998, and ended in 2004, to improve the processes and practices of health, local authority and related services (Department of Health, 1998). The purpose of this programme was to "improve consistency and quality of provision; integrate provision with health services and non-statutory provision; improve access for both service users and carers; and introduce more personalised models of care" (Department of Health, 2007). The modernisation programme continues to be implemented by many local authorities (The Working Group, 2012). The need to "modernise" services is an ongoing theme throughout UK policy discourse (Department of Health 1998; Dilnot Commission, 2011; Law Commission, 2011; Department of Health, 2012).

The MASC programme focused on working-partnerships across the boundaries of health and social care in order to improve service delivery (Department of Health, 2007). Despite policy efforts to move towards working-partnerships between health and adult social care services, there is little evidence of working service partnerships or improvements in the delivery and efficiency of adult social care (Newman et al., 2008).

Local authorities are responsible for the provision of care services, which means they are responsible for assessing and commissioning providers of care, thereby, creating a quasi-market of service care provision. This requires local authorities to seek services from an extensive market of charitable, voluntary, non-profit and for-profit providers (Newman et al., 2008). This should increase service user choice and provide better value for money and higher quality services (Wilson et al., 2000). Unlike the NHS, the mixed economy principles by which local authorities commission adult social care services affect the overall dynamics of the modernisation agenda and successful reform (Department of Health, 2007). This type of market can affect the provision of care services in local authorities and may even fail to meet the needs of older people within many local communities because "they (local authorities) may not have the capacity or flexibility to respond to a multiplicity of individual service user demands" (Department of Health, 2007:97). Local authorities need to develop strategies in order to circumvent new problems and issues due to changes in the market.

There is evidence to suggest that a service partnership strategy between the local authority, hospital and independent care sector could generate savings to the NHS and lead to improvements in delivery and efficiency (Newman et al., 2008; Department of Health, 2010). Better collaboration between providers of care also promotes positive health outcomes and reduces hospitalisations (Coleman and Glendinning, 2004). "It is assumed that some form of collaboration will lead to more coherent and effective service delivery" (Petch, 2008:4). Collaboration is clearly a constant theme in the modernisation of both national and local policy.

Inter-organisational collaboration between different providers of care is difficult, yet, the government remains committed to improving partnerships and acknowledge this in several documents such as *Independence, Well-Being and Choice* (Department of Health, 2005), and the white paper *Our Health, Our Care, Our Say* (Department of Health, 2006). Facilitating and achieving the necessary partnerships not only requires government support but, more importantly, communication between care providers across organisations, in order to provide more integrated services to patients and service users. Despite continual efforts by government insisting that, "local partnerships are essential to deliver improvements in people's quality of life" (Audit Commission, 2005:2), achieving inter-organisational collaboration by local providers of care is proving to be difficult (Cameron and Lart, 2003; Jones and Thomas, 2007; Department of Health, 2010; Cameron et al., 2012).

The MASC is an example of ongoing public sector reform, and the need to develop a new service model whereby local authorities are the "strategic bodies, responsible for leadership, planning and policy but not necessarily service delivery" (Centre for Public Service, 2004:6). Critics of the modernisation agenda argue that there is "nothing new or modern about the government reform" (Centre for Public Service, 2004:12). The goal of the MASC is to ensure that social care services in England:

i. "improve consistency and quality of provision;
ii. integrate provision with health services and non-statutory provision;
iii. improve access for both service users and carers;
iv. introduce more personalised models of care" (Department of Health, 2007:22).

Partnership working between community-based health and social care could lead to better and more responsive services in order to meet service users needs (Clarke and Glendinning, 2002; Dowling et al., 2004; Syson and Bond, 2010). It remains clear that so much more needs to be done as a working-partnership remains hampered by a lack of coordination between health and social care.

2.5. A "new vision" for adult social care

In 2001, the *National Service Framework for Older People* (NSF-OP) was published as "the first ever comprehensive strategy to ensure fair, high quality, integrated health and social care services for older people" (Department of Health, 2001a:i). "It was

acknowledged that organisational structures have acted to impede the provision of care co-ordinated around the needs of the older person and the use of the Health Act (1999) was encouraged to ensure an integrated approach to service provision, such that they are person-centered, regardless of professional or organisational boundaries" (Petch, 2008:24). Despite the drive for health and social care integration, there is still a lack of shared direction across both care systems and the evidence-base underpinning integrated services remains patchy.

Central government has developed policies based on a "new vision" for adult social care (Department of Health, 2005; Department of Health, 2006; Lymbery, 2010). These papers are particularly focused on improving the wellbeing of service users by giving them greater control over their choices of care, through individual payments being made directly to the service users.

The previous Labour government set out a new direction for the whole health and social care system with the four main goals:

i. to provide better prevention services with earlier intervention,
ii. to give people more choice and a louder voice,
iii. to tackle inequalities and improve access to community services, and
iv. to create more support for people with long-term needs (Department of Health, 2000; Department of Health, 2006).

The purpose of these goals was to prevent premature hospital admissions and readmissions, in a cost-effective way. More specifically, the White Paper Our health, Our Care, Our Say: Making it happen (Department of Health, 2006) discussed the need for collaboration between health and social care as it could bring enormous rewards (Lymbery, 2010).

In August 2013, the Local Government Association and the NHS announced details of the £5.3 billion worth of funding for health and social care to promote greater integrated working between local authorities and clinical commissioning groups (CCGs) (Downs and McCarthy, 2013; Hopson, 2013; Wiggins, 2013); a large amount of money will be transferred from the NHS to help fund social care. The funding is described as: "a single pooled budget for health and social care services to work more closely together in local areas, based on a plan agreed between the NHS and local authorities" (Downs and McCarthy, 2013). The funds will not be available until 2015/16.

The discourse surrounding adult social care involves partnership working between care providers - especially older peoples' services – and a single, ring-fenced budget for health and social care. Several efforts to facilitate joint working between health and social care were previously made either strategically or operationally (Rummery and Coleman, 2003), but not holistically. Although some efforts have been made, deep inter-organisational divides - access to care services, different policies, under emphasis on

prevention, and the funding gap between health and social care- continue to affect collaborative working (Petch, 2011).

2.6. The NHS plan (2010-2015): Coordinating health and social care

The NHS Plan is a plan for reform that outlines the vision of a health service designed around the patient: a new delivery system for the NHS as well as changes between health and social services (Department of Health, 2009). The plan sets out strategies for cutting waiting time for treatment and improving health and social care outcomes. It also mentions that elderly care services need to be improved. The NHS Plan provides clear, focused targets for the NHS and social services. The government believes the NHS Plan provides the basis for a national effort to reform the health and social care sector so that it functions as a preventative, people-centred, productive care system (Department of Health, 2009). Again, the government is focused on a preventative care approach that works for all older people, irrespective of their care needs and preferences.

The country's social care sector is experiencing a fundamental transformation as it is faced with limited financial resources and a fragmented health and social care supply network. We are entering a new period of debate about the future of the health care and social care systems. The immense complexities affecting the whole system of care require smarter, more informed decisions in order to improve care outcomes and to achieve better value whilst meeting the needs of individuals. Caring for older people is a

major theme of the political and social culture, and looking for a way to modernise and reform the system is an urgent priority especially for current and future generations as cost, quality, and access issues continue to jeopardise the social care system (Lynn, 2013). This is a major undertaking since there has not been significant reform to the health and care system in the UK since 1948 (Roe and Liberman, 2007; HM Government, 2012). Organisational missions and government discourse indicate deeper issues that are noted in the previous section, profoundly affecting progress and partnerships between the NHS and local authorities.

In 2009/10, state-funded social care in England cost £19 billion, of which £8.6 billion went to care for adults aged 65 and over. Furthermore, the coalition government has promised £2 billion per annum of additional funding by 2014-15 in an effort to further support adult social care (The Health Committee, 2012); the money will come from NHS allocations to clinical commissioning groups and should encourage integration between health and social care (Morse, 2014). Of the £2 billion, £1 billion "will go directly into local authority revenue grants and, with no ring-fencing, there are inevitably concerns about how much of that will end up being spent on social care" (Stone, 2010). There is growing concern in the social care sector that this additional money is not the solution, but a "temporary-fix" to social care reform (House of Commons Public Accounts Committee, 2014). Social care reform needs to go beyond government and costs as the current care system has failed to keep pace with changes to society; there are unacceptable variations in a council's standard of care because of social, economic and demographic factors.

According to the Office for National Statistics (ONS), the proportion of people aged 65 and over increased from 15% to 17% from 1985 to 2012, an increase of 1.7 million people. An increase in the ageing population is often regarded as a major cause of increasing pressure on health and social care costs. More staggering is the number of people aged 85 and over, which doubled from 690,000 in 1985 to 1.4 million in 2012, and is projected to increase to 3.6 million by 2037, raising the demand for care services well above the current capacity (Cangiano and Shutes, 2010). This, combined with the fact that many local authorities are now offering social care only to those with "substantial" or "critical" needs, illustrates the extent to which councils have to ration their adult social care services to keep pace with demand (Butler, 2013). Failing to address this will force frail elderly people to live without the necessary care services (Lynn, 2013).

In 2015-16, the Department of Health is investing £2 billion per annum in social care services (The Health Committee, 2012), despite a total of £2.7 billion of public spending cuts to adult social services since 2010 (Murray, 2013). Clearly, the additional funding from the Department of Health does not account for councils' already shrinking adult social care budget; public spending for social care has substantially decreased over the last 5 years (House of Commons Committee of Public Accounts, 2014). An article published by The Economist (2011) states "A survey by the Association of Directors of Adult Social Services showed that councils in England intend to cut spending on adult social care by 7% this year, although they hoped to achieve much of that reduction in outlays through efficiency measures rather than service cuts". Acutely aware that such

changes could re-shape the delivery of social care services, local authorities are looking for ways to cope with these financial cutbacks without affecting older peoples' care. This could lead to increasing pressures on emergency services and hospitals, as hospital beds could be blocked because the support services older people require after discharge will not be available. Increasing pressure is being placed on adult social care services because of the ageing population, ongoing public spending cuts, finite resources and growing care preferences. At the same time, improvement cannot be made to adult social care by simply pouring more money into a system that does not work (HM Government, 2012); the government has identified £335 million as the cost of preparing for the reforms to social care funding, including the offer of universal deferred payments in April 2015 and the cap on care costs from April 2016 (Cozens, 2013). The future care and support system must be more affordable, accessible and fairer. The government said councils were getting extra money to fund the change (Triggle, 2014), but developing interventions tailored to improving care services for older people involves time and money.

2.7. From traditional "rehabilitation" to modern "home care re-ablement"

Traditionally, "rehabilitation" home-care services for older people used a framework largely designed around "doing" rather than "enabling" people to regain or relearn the skills needed to live independently in their own home. This type of service was offered in hospital, which led to longer hospital stays and bed blocking. Because of this, the provision of care for older people needed to be restructured so that some could receive care support at home instead of hospital. Today, this is known as home care re-ablement.

Rehabilitation is defined as "services by nurses and other therapists designed for specific improvement or restoration of functioning" (Kane, 1999:303). In the late 1990s to early 2000s an increase in demand for care services began to have an impact on the total cost of care and the services' ability to deliver quality care (Stevenson, 1999). Because of this, the demand for long-term care services increased as a result of there being no other alternatives at the time. This became another issue for councils and they needed to avoid similar pitfalls to long-term care services; pitfalls include quality assurance, cost, regulating and training its workforce, and access to specialist skills (Wiener et al., 2007). Since councils are responsible for adult social care, they needed to change how they served and supported their community. It resulted in a short-term, specialist home care service referred to as "home care re-ablement".

2.8. What is home care re-ablement?

By contrast with home care re-ablement, intermediate care is "an approach to health care intended to facilitate patients' transitions from illness to recovery, or to prevent their transition from home managed chronic impairment to institution-based dependence, or to help terminally ill people be as comfortable as possible at the end of their lives" (British Geriatrics Society & Age Concern, 2002; Melis and Rikkert, 2004). Re-ablement is one service on a continuum of intermediate care. Intermediate care is a qualifying service which consists of a structured programme of care provided for a limited period of time to assist a person to maintain or regain the ability to live in their home (Age UK, 2014). It is important to be clear about the differences between intermediate care and home care re-ablement because in some ways they appear to duplicate each other (Department of

Health, 2010; Parker, 2014). To distinguish intermediate care from home care re-ablement and other health and social care services it is important to identify the key characteristics of both intermediate care and home care re-ablement.

Home care re-ablement is defined as "services for people with poor physical or mental health to help them accommodate their illness by learning or re-learning the skills necessary for daily living" (Social Care Institute for Excellence, 2011:2). Intermediate care addresses health and social care needs and is offered in home or hospital, whereas re-ablement is predominantly a social care service which is delivered in a person's home. Local authorities broadly apply the definition of re-ablement to their service model as if the meaning is clearly understood. However, there are several definitions used across the health and adult social care spectrum. For example:

i. "A process which supports an individual to achieve their maximum potential to function physically, socially and psychologically through support and intervention" (Denbigshire).
ii. "The active process of regaining skills, confidence and independence" (Newport).
iii. "The restoration of optimal levels of physical, psychological and social ability within the needs and desires of the individual and his/her family. It requires the expertise of a number of disciplines within a comprehensive and integrated service which must span agency boundaries" (East Staffordshire).

Clearly, local authorities define home care re-ablement differently, but the key aim that has emerged for home care re-ablement is: supporting individuals physically, socially and psychologically to regain the health, skills and independence necessary for daily living.

There are various terms used interchangeably to describe home care re-ablement such as re-ablement; enablement; rehabilitation; restorative home care; and intermediate care. Home care re-ablement is a loosely used term that remains a mirage of confusing possibilities and benefits; unless local authorities and the NHS can agree upon a clear, simple and standard title and definition (Department of Health, 2010; Lewin et al., 2013; Parker, 2014). Re-ablement is poorly understood (Glendinning & Newbronner, 2008; National Audit of Intermediate Care, 2012; Social Care Institute for Excellence, 2012; Miller, 2013) so what is needed at the outset is a clear and consistent definition. For the purposes of this thesis home care re-ablement is defined as a "service for individuals who require help regaining the health, skills and confidence needed for daily living and well-being". Properly defining home care re-ablement enables us to have a common understanding of it.

Home care re-ablement is becoming central to the health and social care system (Glendinning et al., 2010; Social Care Institute for Excellence, 2013; Parker, 2014). Many re-ablement services are joint ventures whereby local authorities and the NHS are investing in it together to reduce the level of need for care and to prevent unnecessary hospitalisation or bed-blocking; people in need of this service have both health and social care needs. This is a major undertaking since hospital admissions or readmissions are

likely to increase; the oldest age group (85+) consumes three times as much health care per person as those aged 65-74, and twice as much as those aged 75-84 (Alemayehu and Warner, 2004). "Elderly people account for a bigger proportion of NHS hospital activity every year, with the number treated growing at a much faster rate over the last decade compared to any other age group" (NHS Information Centre, 2010). The number of older people going to casualty has increased in recent years (Social Care Institute for Excellence, 2014). Since there is an enormous need for the NHS and central government to reduce hospital usage, more attention to preventative care services is required; preventative care is a major priority for central and local government (Faulkner and Sweeney, 2011; Department of Health, 2012; Department of Health, 2013).

The need for greater investment in prevention and rehabilitation services became clear over a decade ago (Stevenson, 1999; Glendinning & Newbronner, 2008; Glendinning et al., 2010). Since then the Health Select Committee has recommended a move toward a more preventative system (Carr-West, 2012). A service that is geared towards prevention helps to reduce cost and delivers better outcomes (Tinetti et al., 2002; McLeod and Mari, 2009; Ryburn et al., 2009; Glendinning et al., 2010), and is associated with improvements in the health and wellbeing of the people using the service; adult social care in the North West spent an additional £176 million on older people's services in the five years between 2004/05 and 2009, an increase of nearly 15% (Oxford Brookes University, 2010). A major focus on early intervention and prevention services are important because of the cost implications associated with people aged 65 and older.

Local authorities are establishing home care re-ablement services in order to enhance individuals' independence, health and well-being (Glendinning and Newbronner, 2008). It is designed to bridge the gap between hospital and home (Department of Health, 2000). Many local authorities are joining up with NHS partners to develop re-ablement services that enable timely discharges from hospital and reduce hospital usage (bed blocking). Achieving this is challenging but the Department of Health supports the need for re-ablement services and acknowledges its cost-savings benefit to the NHS (Department of Health, 2010). It is difficult to calculate the exact savings of re-ablement in terms of money, so more evidence is needed to demonstrate its financial impact; the government announced £5.3 billion for local services to give elderly and vulnerable people an improved health and social care system and from that amount £300 million will come from the Clinical Commissioning Group (CCG) to spend on re-ablement services (Bennett and Humphries, 2014; Osterloh, 2014). Clinical Commissioning Groups (CCGs) are overseen by NHS England and are groups of General Practices that work together to plan and design local health services in England (Birmingham South Central Clinical Commissioning Groups, 2014). A major responsibility of the local Clinical Commission Group is to commission health and care services, and work with patients and health and social care partners to ensure services meet local needs. Since funding has been directed via health to encourage integrated planning between local authorities and health (Social Care Institute for Excellence, 2014) financial support is starting to be forthcoming for re-ablement services.

2.9. The current state of home care re-ablement

Home care re-ablement should be the focal point of health and social care because of its role in early intervention and prevention services. The ability to remain independently at home for as long as possible has become a public health and social objective (Department of Health, 2010a). Re-ablement promotes independence, health and well-being, and social connectedness (Parsons et al., 2012), and adds much value within the health and social care environment and has been shown to deliver cost efficiencies, and the highest impact for the lowest spend (Glendinning et al., 2010; Slasberg, 2010; Social Care Institute for Excellence, 2011). Re-ablement removes or reduces the need for commissioned care hours in comparison with rehabilitation (Social Care Institute for Excellence, 2013). In 2010, the then Secretary of State for Health, Andrew Lansley, allocated £70 million to the NHS to spend on re-ablement services in order to assist all people leaving hospital after illness or injury (Department of Health, 2010). Extra money was then added by the Coalition Government to help support re-ablement services (Wood and Salter, 2012; Social Care Institute for Excellence, 2013); the Department of Health set aside £150 million in 2011/12 followed by £300 million/year over 2012-15 for re-ablement spending (Commission for Social Care Inspection, 2009; Department of Health, 2010; Department of Health, 2011; The Health Committee, 2012; Moore and Jones, 2012; Parker, 2014). Clearly, re-ablement is one area where the government is not cutting back (Wood and Salter, 2011). Based on this report the proportion of older people who were still at home 91 days after discharge from hospital into re-ablement services was broadly stable at 81.4% in 2012/13, compared to 82.7% in 2012/13 (Department of Health, 2013). Clearly, the extra money provided by government for re-

ablement spending is producing positive results but more data is needed to reflect improved outcomes for older people. Developing further measures of the effectiveness of preventative services remains a key priority for the Adult Social Care Outcomes Framework (Department of Health, 2013) especially since an aging population and increased prevalence of long-term conditions continue to affect health and social care services (Ham et al., 2012).

Establishing a home care re-ablement service delivery model with stronger process controls needs more attention in order to monitor the health and social care outcomes of older people and to provide the highest quality at the best cost (Department of Health, 2013). It is important to monitor re-ablement processes to show how it is performing and how the process and capabilities are affected by change to its processes. Maintaining tight control over the various steps involved in the production of re-ablement is important because, without it, costly mishaps are likely to occur, e.g. duplication, delays to service, bed blocking, increased admission to accident and emergency (Department of Health, 2013). Home care re-ablement is a complex system with no single delivery model; it must be coupled with other components of the delivery system, provide resources, create economies of scale, and implement accountability for performance and needs to encourage cross-functional, multi-disciplinary communication and problem solving (VanVactor, 2013). Without a more standardised model of care delivery ineffectiveness, errors and resource constraints threaten home care re-ablement services.

In England there are approximately 2.5 million older people facing frailties and disabilities, so they require care assistance with day-to-day activities such as dressing, eating, washing and going to the toilet (Forder, 2007), and approximately 1.2 million rely on social care that is provided, purchased or supported by a local authority (Poole, 2009). Because of large and growing demand, local authorities have to become more innovative to achieve improvements in efficiency and effectiveness of care-service delivery since the future of adult social care services remains uncertain. The central government is addressing this by placing heavy emphasis on the importance of home care re-ablement and is of high priority across England's adult social care policy (Department of Health, 2012, Care Bill, 2013; Department of Health, 2013).

2.10. Referral process

Referrals to home care re-ablement are made by phone or by completing a referral form and involve health and social care professionals working in a hospital or the community, the patient, and a relative or a friend of the older person (referee). In England, each referral is screened for eligibility according to the "Fair Access to Care Services" (FACS) eligibility framework for prioritising the use of adult social care resources fairly, transparently and consistently (Social Care Institute for Excellence, 2013). This was introduced by the Department of Health in 2002 to help local authorities with the decision-making process. In 2010, it was revised to reflect changes to practice, NHS reform, rising demand for care and support, the economy, legislation, policy and provision (Social Care Institute for Excellence, 2013). Though the guidelines were set by

government, local authorities decide whether re-ablement services are subject to FACS or not; the FACS banding system remains the basis for assessment and eligibility decision-making across all authorities (Social Care Institute for Excellence, 2013). There are four bands used by local authorities to determine eligibility for individual packages of services: critical, substantial, moderate, or low needs (National Audit Office, 2014). 85 % of those aged 65 and older live in local authorities that only provide services to those with substantial needs or higher (National Audit Office, 2014). The 2010 FACS policy guidance will remain in place until the Care Bill comes into law (Department of Health, 2012; Department of Health, 2013; Social Care Institute for Excellence, 2013). Clearly, home care re-ablement is a service that is still evolving.

Local authorities are responsible for managing home care re-ablement referrals and their varying procedures. Some local authorities put all care referrals through re-ablement except those that may have end of life care needs. This is known as an "intake" re-ablement service. Other local authorities operate a more selective process and refer only those who will benefit most. This is known as a "selective" model. No single "best practice" has yet been identified since local authorities have responsibility for their own home care re-ablement (Care Services Efficiency Delivery, 2007; Francis et al., 2011, Social Care Institute for Excellence, 2014). Since re-ablement is defined by local circumstances, it remains unclear as to which referral process works best (Department of Health, 2010; Social Care Institute for Excellence, 2011; Social Care Institute for Excellence, 2013).

Re-ablement services are important to the NHS because they can reduce the length of time that people spend in hospital or long-term residential care (Glendinning and Newbronner, 2008). They are valuable to hospitals because delayed hospital discharges are a major problem and limit the number of available hospital beds (Manzano-Santaella, 2010); "the cost to the NHS of keeping a patient in hospital when they are ready to be released is estimated at £260 a day" (Triggle, 2012). Re-ablement can have a positive impact on reducing hospital usage but further research is needed to establish its longer-term impact on hospital outcomes (Francis et al., 2011; Wood and Salter, 2012; Lewin et al., 2013; Social Care Institute for Excellence, 2013). The evidence suggests that effective re-ablement can facilitate faster hospital discharges and generate savings for health and social care.

Re-ablement needs to be clear and concise so that the care delivery process is timely, accurate and effective; a frail elderly person in hospital for even a few extra days suffers a great risk of deconditioning and loss of function (Covinsky et al., 2003; Landefeld, 2003). There are over 2 million unplanned hospital admissions each year among elderly people in England, which accounts for 68% of emergency bed use (Imison et al., 2012). Adults 65 and older spend an average of 9 days in hospital when admitted through urgent and emergency care (Imison et al., 2012). Because of this, completing a comprehensive re-ablement assessment of the patient as soon as they are admitted to hospital could reduce delays in discharge and/or hospital usage. This reinforces the need for a well-documented referral process so that it involves health and social care services.

2.11. Why re-ablement?

Since the central government is increasing pressure on local authorities to cut costs, re-ablement is a good way to prevent hospital usage and reduce cost. The Department of Health has introduced a system whereby NHS hospitals face penalties if patients are readmitted within 30 days of discharge (NHS Confederation, 2011). Re-ablement services are known to reduce readmissions (Social Care Institute for Excellence, 2013), thus creating an even more value saving for health. It is clear that money spent on older people continues to make up the majority of the total adult expenditure on social services (The National Health Service Information Centre, 2011). The cost of home care is forecast to rise from 1% of the UK's GDP now to between 2% and 4% by 2050 (Rostgaard et al., 2012; Social Care Institute for Excellence, 2014).

In 2003 the previous Labour government approved additional funding for health and social care by introducing a policy called The Community Care Act. The purpose of it is to reduce delays in hospital discharges. The Act encourages hospital trusts to charge local authority Social Services Departments (SSDs) £100 per day for delayed hospital discharges (Godden et al., 2009); the Department of Social Services (SSDs) is responsible for personal social services and is led by the Director of Social Services (My Home Care Information, 2014). For SSDs being penalized for any delayed hospital discharges is a major financial issue for them since hospitals trusts are increasingly referring patients to re-ablement services to offset hospital costs. Once a patient is discharged from hospital SSDs become responsible for providing and paying for any of their care and support; SSDs become liable for patients once there is a delay in the

discharge-planning process (Manzano-Santaella, 2010). To put it simply the amount of time and cost associated with this is sizable.

2.12. What is supply chain management?

Practitioners and researchers cannot use a supply chain management approach effectively if they do not understand how to define it (Mentzer et al., 2001). There are numerous supply chain management definitions available in the literature and among various professional associations (Cooper et al., 1997; Lambert et al., 1998; Walters and Lancaster, 2000; Lummus et al., 2001; Eng, 2005; Gibson et al., 2005; Burgess et al., 2006; Slack et al., 2007; Stock and Boyer, 2009; Wisner et al., 2012; Ahi and Searcy, 2013). As with home care re-ablement, a fundamental challenge in supply chain management is a universally accepted definition across organisations and industries.

Supply chain management evolved from the fields of production management and logistics that traditionally involved the management and transportation of tangible resources (Giannakis and Croom, 2004; Giannakis, 2010). Since the roots of supply chain management are mainly in manufacturing, lessons from it and health care are used to understand how to apply supply chain management to older peoples' care. The social care sector has not adopted a supply chain management approach to improve its system in terms of workflow, access and availability. The literature based in supply chain management and social care sector provides limited insight into a supply chain

management approach for the area of social care, particularly as it relates to home care re-ablement. This thesis is a step towards filling this gap in the literature.

Home care re-ablement is part health care and part social care. Re-ablement encompasses a broad array of services delivered in home to frail and disabled individuals, with various complex health and social problems, who need assistance with activities of daily living (Kodner, 2006). However, there is little research into how best to manage home care re-ablement activities despite a growing interest from central government and local authorities to create a more efficient and effective service. The quest to improve re-ablement services still remains. 152 local authorities across England offer re-ablement services to people so they can remain independently at home whilst receiving the health and social care they need without going to hospital. Based on several case studies as well as information collected from other councils regarding their home care re-ablement service, it has been noted that local authorities are currently implementing supply chain management techniques to overcome the barriers to efficient and effective home care re-ablement, typically without explicitly realising this. Supply chain management techniques were captured inadvertently during conversation with a local authority. Examples include brokerage, commissioning and assessment (Wirral, 2010; Knowsley, 2011; Liverpool, 2011). If the hypothesis is true, that this is piecemeal implementation of supply chain management, what we really need is systematic implementation to design and manage the whole system of care.

There is a growing body of literature on various whole systems models of long-term care partnership working, particularly prototypes which are nested in single structures designed to bridge the gap between health and social care (Kodner and Kay Kyriacou, 2000; Kodner, 2002; Johri et al., 2003; Kodner, 2004; Kodner, 2006) yet no academic interest reported in home care re-ablement services. Much can be learnt from case studies because the core of the work surrounds integrating health and social care services, in particular, financing, service delivery, integrated information systems, case management by multidisciplinary teams and a focus on preventative care services. Many local authorities are looking to make improvements to their current re-ablement service model. There are major differences between local authorities in terms of geographic size and population, funding streams and service model. Because of these differences, changes to a council's re-ablement service need to be made locally. Despite the complexities involved with integrating health and social care services for older people (Leutz, 1999; Christiansen and Roberts, 2005; Kodner, 2006; Dodd and Allen, 2014), an important concern is that supply chain management theory is not applied to home care re-ablement services to help with the whole process. The purpose of the home care re-ablement service is to provide coordinated, patient-centered care for people to remain at home independently. Despite the appeal of the home care re-ablement service model, it has lacked a robust body of research to help drive the evolution and adoption of supply chain management theory. However, Davies and Drake (2007) use supply chain management theory, such as sourcing strategy. The authors analyse and compare home care outsourcing strategies, including contract types, used by local authorities in Wales seeking best practice in the commissioning of home care from the independent sector; a

mixed economy of care is being implemented by Welsh local authorities to reduce costs. Clearly, outsourcing strategies appear to differ between local authorities but this study applies supply chain management theory to the home care sector.

Evidence is limited between supply chain management theory and social care so the application of supply chain management theory within other industries/sectors is used to address the same issues as those seen in contemporary social care. Despite limited evidence of supply chain management theory in social care, interest in supply chain management theory has grown within health care, mainly to improve performance in terms of cost and availability (Plantin and Johansson, 2012). Unlike the NHS, local authorities are not using supply chain management theory to capture similar process improvements for re-ablement.

A new approach for managing older peoples' care should be considered by health and local authorities to improve their service operations, and to identify specific bottlenecks that are slowing down the movement of information, goods and services (Blanchard, 2010). In England, the Department of Health has articulated a vision for the integration of health and social care services, with a greater focus on individualised preventative services to delay the need for more costly forms of care (Xie, 2012; Cochrane et al., 2013). Clearly, the Government's document does not specifically explore supply chain management theory as a solution, or control system, for social care.

Since home care re-ablement was established in the mid-1990s, local authorities have been working to make improvements to it. Unfortunately re-ablement was seen as a separate entity to the health-care system. The way health and social care services are delivered require an integrated care approach. Re-ablement is now viewed across the whole health and care spectrum by health and local authorities. Local authorities need to coordinate their activities with members of their supply chains to face dynamic and complex situations. The lack of coordination between supply chain members can lead to uncertainties in supply and demand. Re-ablement is becoming an integral part of the care-delivery process since it involves a complex set of processes that includes strategic planning of operational activities; organising the procurement of products and services; assessing peoples' care needs; and coordinating the flows of information between care providers.

The research is intended to inform local authorities throughout England about any possible process improvements than can be made to their home care re-ablement service by applying supply chain management theory. This includes providing insight into a whole-systems' approach, which means bringing together health and social care under one roof (Kodner, 2006), because home care re-ablement services deal with a large number of stakeholders whose activities need to be coordinated; connections and ties between different stakeholders within organisations need to be clear to maintain or even improve the service level (Korpela et al., 2012). Many local authorities and their local NHS affiliates function in different organisations whereby different stakeholders arrange services separately; a supply chain consists of disparate but inter-dependent members

who are dependent on each other to manage various resources, e.g. inventory, money, information (Kumar et al., 2013). Health and local authorities could manage their activities and resources more effectively and efficiently by implementing a supply chain management approach.

It is important to efficiently and effectively coordinate a person's care activities between health and local authorities to ensure the right product/service at the right time to the right person. However, there is no system in place (Ham et al., 2012) that coordinates care activities between health and local authorities. In the traditional model, patient information is shared manually or verbally between providers. Health and local authorities need an internet-based communication platform to facilitate peoples' care information more efficiently and effectively; supply chain management leads to benefits such as coordination of processes; improved performance through optimisation; and improvement of the client interface (Giannakis, 2010). An internet-based supply chain management system needs to be implemented to support working partnerships between care providers (Pramatari, 2007); an internet-based supply chain management system would reduce the uncertainty of supply and result in better performance (Mentzer et al., 2001). In social care supply chains, the principal suppliers include manufacture (medical equipment and hospital medical supplies), distributors, medical service providers, medical and social groups and users of health and social care services.

A major issue for many local authorities is the home care re-ablement delivery process. Many local authorities are not flexible in terms of availability and access. This leads to delays in peoples' care and could lead to admission or re-admission to hospital. "A delay in someone's care stems from lack of teamwork, fragmented suppliers and limited access to a person's health and social care record" (Wirral, 2010). Because of this, systems-level changes need to be implemented to support care coordination and delivery of re-ablement. A systems-change approach pays attention to the relationships among all stakeholders, and is able to adapt to any changes that could occur between organisations, e.g. hospital and home care re-ablement. The lack of a comprehensive health-information-technology system is the key to improving and creating a whole-systems approach (Wulsin and Dougherty, 2008; Pedroso and Nakano, 2009; Hook and Grant, 2010).

The relationship between health and local authorities is extremely important for successful re-ablement outcomes because re-ablement is significantly associated with better health-related quality of life and social care-related outcomes compared with conventional home care (Francis et al., 2011). Re-ablement can prevent hospitalisations by helping people to remain at home independently. Re-ablement is an area affected by many bottlenecks that directly or indirectly affect peoples' care. Health and local authorities need to re-think their provision of care to understand how a supply chain management approach could help to achieve an efficient and effective care system. "Effective supply chain management processes and supporting information technology systems could have a major impact on both the service level and the operating costs, and

thus the focus must be put on these areas in public health and social care organisations" (Korpela et al., 2012). A supply chain management approach should lead to stronger alliances between health and local authorities.

2.13. Health care supply chain management

Similar to home care re-ablement, hospitals consist of specific priorities that reflect their patient bases, community roles, resources, and clinical agenda. Since local authorities are responsible for overseeing many activities, it is important for them to design a supply chain management system that coordinates all of the different pieces of their chain as quickly as possible without jeopardizing peoples' care outcomes and whilst keeping costs to a minimum. "One-size-fits-all supply chain strategies are destined for failure" (Agudelo, 2009:37). Since there is no one-size-fits-all supply chain management approach, it is important for local authorities to design a supply-chain management approach specific to their local circumstances that serves their community's care needs and preferences (Francis et al., 2011).

As with hospitals, re-ablement is a service with variable-demand and supply-uncertainty. For example, local authorities receive more re-ablement referrals during the winter compared to any other season. This means additional care staff and equipment are needed to cope with this. However, during quiet periods if there is not enough work for care staff then they are assigned to in-house care homes. If the supply does not match the demand it could lead to scheduling and performance issues, which ultimately affect

peoples' needs and care outcomes. Local authorities should take the lead in coordinating and implementing supply chain activities for their re-ablement service. Councils should work with, or consult with, hospitals that have adopted a supply chain management approach to identify problems that affect their supply chain whilst also managing their chain of activities. Judd and Moore (2011) propose a model for holistic care management for older people that includes an autonomous care manager, a single interagency plan of care and ongoing monitoring that is client-centered. The purpose of this model is not only to immediately address peoples' health and social care needs but to provide for an ongoing relationship that is fluid and can impact physical, mental and financial issues before they rise to the level of crisis. Although the authors provide information for a holistic care management programme for older people, which is grounded in supply chain management theory, the challenges of implementing this kind of model are costly in terms of money and technical support. People develop models using various approaches and methods to understand, analyse and improve supply chains (Bhaskaran, 1998; Christopher, 1998; Kasi, 2005). A supply chain management approach for a home care re-ablement service should help councils to solve some supply chain management problems that include supply and demand uncertainty.

A supply chain management approach for hospitals is necessary due to the large number of activities that take place to satisfy client needs: purchasing, receiving and delivering products and services, inventory management, management information systems, telemedicine, food services, transportation, and home care services (Aptel and Pourjalali, 2001). The ultimate goal of a supply chain management approach in health care is to

efficiently and effectively fulfill a patient's care needs and to reduce operating costs and waste (Lee et al., 2011). As for hospitals, a supply chain management approach is a great opportunity for local authorities to respond to the market place and peoples' care demands.

2.13.1. Hospital procurement strategy in the United Kingdom

In the UK, the Department of Health published the eProcurement Strategy for the NHS. The strategy estimates that hospital trusts can save £1.5 billion by the end of 2015-16 by taking a cohesive approach to procurement based on global GS1 Standards, national infrastructure and local systems delivery (Finance & NHS Directorate, Procurement, Investment & Commercial Division (PICD), 2014). The GS1 Standards system enables a single global source of master data to be created, captured and shared across supply chains, from the brand owner through to the end user (Finance & NHS Directorate, Procurement, Investment & Commercial Division (PICD), 2014). GS1 Standards include:

i. Global Trade Identification Number (GTIN)- this is a unique number used to access an electronic record held in a database that can contain hundreds of attributes concerning a specific product. Attributes include data such as product description; manufacturer product code; product weights/dimensions; and packaging hierarchies;
ii. Datapools and the Global Data Synchronisation Network (GDSN)- GS1 has certified 29 datapools across 24 countries that provide repositories for suppliers to place master data. These datapools are linked by the GDSN

network that enables master data to be synchronised in near real time and shared globally with buying organisations;

iii. Healthcare extension- some sectors require additional attributes and GS1 provides different extensions to cover these requirements;

iv. Data carriers- the GTIN is encoded to a GS1 data carrier standard for barcodes and Radio Frequency Identification (RFID) tags, enabling the generation of a barcode that can be read by a scanner. Scanning the barcode provides an electronic key to access a database of product specific attributes (Finance & NHS Directorate, Procurement, Investment & Commercial Division (PICD), 2014).

The report mandates the use of GS1 Standards for the following:

i. All NHS suppliers and providers must adopt Global Location Numbers (GLN) which will be centralised in a GLN registry provided by the Department of Health;

ii. All NHS suppliers must provide a Global Trade Item Number on all their items (products and services);

iii. Suppliers are required to place product data into a GS1-certified datapool to enable master data to be synchronised in near real time and shared globally with buying organisations (Finance & NHS Directorate, Procurement, Investment & Commercial Division (PICD), 2014).

The purpose of the Department of Health's document is to:

i. define standards to ensure NHS e-procurement systems work together, e.g. integrate;
ii. require the adoption of standards by the NHS;
iii. invest in technology solutions that will support e-procurement implementation by the NHS;
iv. establish a single NHS spend analysis and price benchmarking service (Finance & NHS Directorate, Procurement, Investment & Commercial Division (PICD), 2014).

There is much effort by the Department of Health to help NHS trusts save money whilst becoming a more efficient and effective service. Local authorities could also adopt GLN or a similar strategy to improve their care services. GLNs are used by organisations to solve supply-chain problems such as duplication, fragmentation and communication (Finance & NHS Directorate, Procurement, Investment & Commercial Division (PICD), 2014). The benefit of implementing GLN is that it provides for accurate identification and communication of information regarding products, assets, services and locations (Finance & NHS Directorate, Procurement, Investment & Commercial Division (PICD), 2014). Home care re-ablement services cannot be delivered to people without the goods and services provided by various suppliers so the GS1 GLN could provide councils, such as Wirral, better communication pathways with all of their suppliers and the ability to reduce costly transaction discrepancies such as incorrect or inaccurate placed orders. If health and social care services were "integrated" then the Department of Health's plan would also have included home care re-ablement services.

2.14. What is logistics?

Logistics management is "the part of the supply chain management that plans, implements, and controls the efficient, effective forward and reverses flow and storage of goods, services and related information between the point of origin and the point of consumption in order to meet clients' requirement…Logistics management is an integrating function, which coordinates and optimizes all logistics activities, as well as integrates logistics activities with other functions including marketing, sales manufacturing, finance, and information technology" (Council of Supply Chain Management Professionals, 2011). Logistics is the operational component of supply chain management and should be an area of focus for local authorities because home care re-ablement includes various activities such as transportation, inventory of carers and supplies such as care equipment, commissioning, and distribution. These activities should be efficiently and effectively organised once logistics management thinking is applied.

A major issue for many local authorities is transportation. Transportation is a problem for local authorities because it is largely planned in a traditional way. Some carers do not own a vehicle and have to rely on public transportation to and from work. Because of this, councils have to organise and plan each carers' schedule so that the carer arrives at a client's home on time. Currently, local authorities tend to look at their demand for re-ablement care in order to determine how they will supply their clients. To overcome this, local authorities need to identify their demands-and-constraints issues, such as capacity

and cost. These issues are going to affect each local authority differently. Without a transportation strategy, each local authority is going to continue to have problems throughout the entire home care re-ablement delivery process.

Little is known in terms of how the application of logistics and supply chain management could improve a local authority's home care re-ablement service. More research needs to be conducted by practitioners and clinicians to show how logistics and supply chain management could improve health and social care (Vissers and Beech, 2005; Langabeer, 2007; VanVactor, 2011; VanVactor, 2012). A better logistics design should help to reduce pressure on local authorities and the NHS (McNeil and Hunter, 2014). For many local authorities, its transport capability is being squeezed because of limitations imposed by the demand for re-ablement and an insufficient technological infrastructure. How can councils plan for increased demand of re-ablement care if their local NHS does not share demand information? Demand could be predicted much better if all the care providers along the supply chain collaborate and share demand information.

Logistics and, in a wider sense, supply chain management are major cross-functional activities in any organisation (Wieser, 2011). By collaborating with cross-functional departments, better logistics and supply chain management could create value, especially in the context of making a decision about a person's care plan and the delivery of it. The collaboration of health and social care services should also provide strategic opportunities for them in terms of cost containment and minimise delays to service delivery time; local

authorities need to have a basic understanding of supply chain management since it provides a framework, whereby logistical strategies are developed and executed (Bowersox et al., 2012). A well-developed logistics framework evaluates alternative distribution strategies, plans for seasonal peaks and troughs and integrates separate operations to improve overall efficiency (Paragon, 2014). Logistics is integral to ensuring efficient and effective home care re-ablement delivery. Since hospitals will not be reimbursed for admissions within 30 days of discharge following an elective admission, health commissioners should work with their local authority to invest savings in better re-ablement and post-discharge support initiatives (Knowsley Clinical Commissioning, 2013). Partnership working between local authority and hospital may yield reductions in emergency re-admissions within 30 days of discharge from hospital. Home care re-ablement services may play a major role in reducing emergency re-admissions; rapid response service. Clearly, there is a limit to what any organisation can achieve without interagency support during emergencies (VanVactor, 2011) so coordinating health, social care and independent care providers to provide efficient and effective care services to people is important.

There are local authorities that have a collaborative relationship with health (Essex, 2010; Kent, 2010; Redbridge, 2010). However, many local authorities still have a traditional way of managing and coordinating a person's health and social care which means local authorities and health have minimal involvement with each other regarding a person's care plan (Sefton, 2010; Wirral, 2010); health and social care should no longer be seen as separate activities in a closed-box vision of separate departments. An efficient and

effective information-and-technology-communications infrastructure should improve fragmentation across all care sectors; the information system is the most common major problem confronting any organisation today (Weiser, 2011). A coordinated and shared electronic care platform allows care providers to track, share and identify the needs of older people more accurately from point of entry to hospital through discharge to re-ablement; leading to better service turnaround time because demand and capacity information is available in real-time to care providers along the supply chain. However, there is a strong body of evidence demonstrating that structural integration between health and social care does not deliver the effective service improvement that has been anticipated (Petch, 2011). The ethos of an organisation can have a positive or negative impact on the process. An information-and-technology-communications system is not the only viable solution for integrating health and social care services and moving clients through the care system. A supply chain management strategic plan with a foundation built on logistics will provide a healthcare organization with the ability to procure, receive, warehouse, and move all key supplies through an entity at the lowest total delivered cost while ensuring clinicians have the right product at the right time to deliver the highest quality healthcare in the markets that they serve (Association for Healthcare Resource & Materials Management, 2003). The adult social care sector- local authorities- could learn much from other industries that have developed their own logistics and supply chain management approach; a supply chain management approach, with a focus on logistics, should be used as a way to identify potential bottlenecks and inherent threats to the supply chain. An interdisciplinary approach that involves information and communications technology could make improvements to health and

social care in terms of hospitalisations and re-ablement outcomes. However, successfully implementing this requires a redesign of workflow that is based on the new system and it should be done incrementally to minimise cultural differences between health and social care services.

In an effort to manage its home care re-ablement more efficiently and effectively, local authorities should consider how their "hub and spoke" structure is organised. The distribution centre (hub) is the local authority and the radial links (spokes) are the care providers. There are variations of the hub-and-spoke model that include virtual and premises-based models, e.g. virtual hub, virtual hub with face-to-face mobile unit, virtual hub with face-to-face at community centres, premises-based hub, premises hub with mobile unit etc. (Croydon, 2015). A local authority needs a service-delivery model that is most suitable for the community. Irrespective of the type of model used, it needs to support a working partnership between the health and local authority for the sake of health and adult social care and its recipients. The planning and process dimensions are important characteristics in a supply-chain-management system (Liu et al., 2012). For local authorities, the hub-and-spoke method is a realistic community-based approach, whereby information, people, material and money flow along radial links to facilitate integration of care throughout the local authority's supply chain. In the area of home care re-ablement, all processes have to be in alignment in order to connect providers with their clients efficiently and in a timely manner. The failure to provide home care re-ablement to older people in need of it could lead to unintended consequences for health and local authorities; it creates pressures downstream if a person's care needs are unmet.

2.15. The hub-and-spoke model

A hub-and-spoke model is a logistics term used to describe a transportation network of routes connecting origins to destinations (Horner and O'Kelly, 2001; Hudson, 2004; Yaman, 2011). This is a concept used by many industries yet is loosely used by local authorities. For local authorities, transportation does not always represent a physical vehicle. Instead, it could be a virtual vehicle that connects origins to destinations with fibers and technical equipment (Yaman, 2011). For local authorities, the goal is to consolidate their distribution centres to as few as possible without jeopardising peoples' care. The goal should be to create a "one-stop" source for clients without compromising service levels to all stakeholders.

Creating a hub-and-spoke model, or community network leads to: economies of scale; efficiency and efficacy; and cost savings (VanVactor, 2012). The hub-and-spoke model decreases the complexity of distribution, or capacity planning. The disadvantages of this model are: disruption at the hub especially if there is only one main centre, limited hub capacity can cause bottleneck problems, and increased bureaucracy because all decisions are made by the logistics centre which causes time delays. For local authorities, they should improve working partnerships between council and health because there would be fewer distribution centres involved in home care re-ablement planning

2.16. Summary

In order to understand adult social care, it is important to understand some of its history. It helps to give a clearer picture of its problems and how it functions. Understanding the legislation and policy that influences adult social care is helpful when seeking solutions to its problems. Many of the earliest social problems that resulted from poor coordination of health and social care services are still with us today.

Adult social care plays a vital role in society. "Local authorities across the country are struggling to meet their responsibilities in a very difficult financial and policy context. With higher levels of need, higher public expectations and widespread cuts, the previous approach to adult social care feels fundamentally unfit for purpose" (Glasby et al., 2013). As the aging population increases and local authority budgets are cut, meeting the social care needs of older people creates challenges for each local authority and the NHS.

Local authorities are struggling with how to deliver and coordinate care services. With 152 local authorities in England struggling for adult social care funding, each is under immense pressure to deliver better care services more effectively and efficiently. "England has an inappropriate model of health and social care to cope with a changing pattern of ill health from an ageing population" (The Select Committee on Public Service and Demographic Change, 2013). Many older people are dependent on both health and social care services, and have multiple care needs and preferences that require both

services. Thus, a well-coordinated health and social care system should enhance a client's care experience and outcome, and reduce re-admission to hospital.

Within the last few years, increasing media-attention regarding adult social care has risen especially since "older people make up 60% of the patients in NHS-wards" (Carvel, 2012); more than 9% of people aged 75 and over across England experienced at least one emergency hospital admission for a potentially avoidable condition (Care Quality Commission, 2013). In other words, older people are increasingly being admitted to hospital unnecessarily. This leads to bed-blocking whereby older patients who are waiting for support and care to be put in place "block" acute hospital beds, and increase the cost to the NHS by occupying these expensive units. Reducing this blocking would be possible if the NHS and adult social care services were integrated.

Adult social care is the responsibility of local authorities because social, economic and demographic needs differ from one local authority to the next (Care and Support Bill, 2012; Health and Social Care Act, 2012; The Health Committee, 2012). Local authorities have a legal responsibility to find out what social care services their local residents need, and to provide or commission those services effectively (Association for Public Service Excellence, 2008). The provision of adult social care services by local authorities is supported and encouraged by the UK Government through several government documents such as *A Vision for Adult Social Care: Capable Communities and Active Citizens* (Department of Health, 2010a), *Healthy Lives, Healthy People: Our strategy for public health in England* (Department of Health, 2010b) and *The State of Health Care*

and Adult Social Care in England in 2012/13 (Care Quality Commission, 2013). Whilst legislation alone is not sufficient to reform adult social care, it provides the national leadership necessary to support this particular area.

Local authorities retain responsibility for organising, developing, and managing adult social care services. Planning and coordinating each transaction is difficult because it involves multiple care providers; a fragmented supply network affects information flow and ultimately leads to long service delivery times. Overcoming this is possible with inter-organisational partnerships between health and adult social care (Jones and Thomas, 2007). Health and local authorities need to change the way they organise and deliver care to people. Despite the ongoing rhetoric surrounding integration, the problem has yet to be "solved". Initiatives for improving continuity and integration of care for older people across the health and social care spectrum together with public and private providers continue (Davies et al., 2011).

The divide between health and local authorities is likely to worsen especially since pressures on financial resources coupled with growing demand for care services are likely to continue. The history of adult social care until now implies the need for joint working between health and social care services; better coordination between services; and increased integration between intermediate, primary and secondary care as the key areas for development in fostering the whole systems approach advocated in government policy (Department of Health 2002, Regen et al., 2008; Cameron et al., 2012; Department

of Health, 2013). Health and local authorities have an opportunity to integrate older peoples' care services more effectively and efficiently. It is suggested here that radical improvements should be done through home care re-ablement services. Chapter 3 presents methodologies and relevant methodological issues utilised in this research.

Chapter 3: Methodology

The purpose of this chapter is to introduce the research methodology used for this study and how it has guided data collection, analysis and development of theory. "Methodologies for health research should be diverse and selected to suit the problem being investigated" (Baum, 1995:466). Perhaps, a great deal of rich data is used to establish a link between home care re-ablement and supply chain management techniques.

3.1. Introduction

The purpose of the research methodology is to describe the research paradigm chosen to reflect personal beliefs and assumptions, and to understand the format of the research project. Ideally, the research method attempts to gain a holistic view of issues within an organisation. The decision regarding which kind of research method to use is based on the researcher's own experience and preference, the population being researched, the proposed audience for findings, money, time, and other resources available (Taylor, 2005).

Quantitative measurements, also referred to as deductive reasoning, is not the preferred research method to use when answering interview questions because it focuses on questions such as "who", "what", and "how many" (Yin, 2003). A quantitative strategy may be useful in measuring attitudes across a large sample. Instead, questions are

answered by qualitative research methods through observations in each participant's environment. This allows the subjects being interviewed to give detailed explanations to questions that may provide valuable insight. Kaplan and Maxwell (1994) argue that the goal of understanding a phenomenon from the point of view of the participants and their particular social, and institutional context, is largely lost when textual data are quantified.

Deductive reasoning places importance upon systematic protocol and technique, whereas an inductive approach, or qualitative, is subjective. This type of research method limits the opportunity for in-depth exploratory responses, and tends to yield responses that are easily quantifiable. This is in sharp contrast to the inductive reasoning approach (Gill and Johnson, 1997). It was not important to focus on a top-down approach that is aimed at identifying the number of local councils in England that have a home care re-ablement organisation, but rather to study how respective councils function with hospitals and independent care providers in order to deliver re-ablement to clients. The end result of inductive reasoning is a result of observation combined with in-depth theoretical understanding.

This research study has a number of inter-related objectives within the context of supply chain management of health and social care; especially in the field of home care re-ablement. Therefore, employing qualitative analysis to this work demonstrates how a local authority's home care re-ablement model can be applied to supply chain operations.

3.2. Qualitative analysis

An inductive reasoning approach, known as qualitative research, allows "relevant avenues of themes to emerge" (Corbin and Strauss, 1990). One cannot conclude that "A" will cause "B", especially when observing the supply chain management approach of a local council, which is an example of a deductive reasoning technique. Importantly, Glaser and Strauss (1967) argue that theory developed inductively is likely to be most useful and most accessible to practicing managers because it is more likely to "fit" the data. This work promotes the benefits of an inductive reasoning approach and avoids the "highly-structured" deductive approach.

Two arguments support the application of an inductive approach to this research study. Explanations of social phenomena are more likely to fit the data because theory building and data collection are closely interlinked (Wiseman, 1978), and are more plausible and accessible (Glaser and Strauss, 1967). Explanations of human action are produced by gaining access to the conceptual world. This is achieved through inductive research.

The opportunity to gain a comprehensive understanding of various local councils' home care re-ablement through multiple professional viewpoints is based on empirical research, and referred to as a case-study analysis. The objectives are designed to explore several local councils' Department of Adult Social Services (DASS), and to discover stakeholder views, including the drivers and the barriers to implementing and managing an effective and efficient supply chain management approach for home care re-ablement. This type

of research contributed significantly not only to the overall study of supply chain management in home care re-ablement, but also to a more comprehensive understanding of the importance of supply chain management for health and social care. Qualitative research does not merely produce empirical descriptions of social phenomena but moves towards understanding and interpreting the environment (Guba and Lincoln, 1989). Several local councils are included in this research to enhance the accuracy, validity and reliability of the results. A case-study analysis of several councils captured the holistic essence of a supply chain management approach towards home care re-ablement.

Qualitative research can be of value for improving health and social care by exploring the supply chain management impact in other areas of research. Using qualitative research methods to collect information from local councils was necessary in order to gain an inside view and understanding of home care re-ablement. The following sources were used in order to proceed with research into local councils with social care responsibilities: unstructured participant and non-participant observation, informal conversations, academic literature on social care policy and operations management, reports produced by government agencies, and websites and other public domain literature produced by local authority and user-support agencies. This produced a great deal of data that was used for establishing a link between home care re-ablement and supply chain management.

The qualitative research methodology is used to collect data. As part of the data collection process, a wide array of different perspectives is used to understand the fundamental problems of home care re-ablement experienced by many councils. With this opportunity, the researcher is able to present all preliminary research collected from the area of home care re-ablement and supply chain management thinking. Perhaps, the most important part of presenting scientific data and information at a professional conference is to receive feedback and suggestions about the research from colleagues who share a similar research interest.

There are two diametrically opposing opinions among researchers regarding appropriate research methods. Employing a qualitative approach to this research entails the application of inductive reasoning rather than deductive reasoning (Denzin and Lincoln, 1994), and are "grounded" in regards to grounded theory. This research seeks to develop new theory that is useful to the academic community in operations management and for industry practitioners. The results are grounded (Glaser and Strauss, 1967) in several case studies that were carried out in their natural environment.

3.3. Grounded theory: Emergence and development in action

Grounded theory originated in the 1960s in the United States by Barney Glaser and Anselm Strauss in the fields of health and nursing. Grounded theory is inductively derived by the discovery of theory from data systematically obtained from social research (Glaser and Strauss, 1967). The purpose of using grounded theory is to create new theory

rather than to test existing theories. It provides useful tools to learn about individuals' perceptions and feelings regarding a particular subject area. The decision to use grounded theory methodology is further supported by the lack of existing theory regarding supply chain management and home care re-ablement. Various sources of data are used to collect information until theoretical saturation is reached, or until no new or relevant data emerges regarding a category and relationships between categories are established (Strauss and Corbin, 1998).

3.4. Qualitative research

An "interpretive" researcher believes that an understanding of the world is accessible through day-to-day social interaction. This research is carried out by using qualitative methods in order to gain an understanding of the constructions held by people in that context (Mertens, 1998). In particular, the interpretative perspective supports the objective of gathering a variety of individuals' perceptions in order to gain an understanding held by the individual people within adult social care in the context of a home care re-ablement environment.

Despite ethnographic research being fraught with ambiguity, often regarded as unreliable and lacking in validity and generalisability (Vrasti, 2008), it can provide a depth of understanding that is lacking in other approaches to investigation. Ethnography refers to the textual transcription/translation of holistic descriptions and experiences gathered through fieldwork (Vrasti, 2008). Since ethnographic research occurs in natural, unique,

and personalised settings that are undertaken to record processes of change, it cannot be reconstructed in a precise format. An exact replication of research methods could fail to produce identical results due to environmental differences, with human behavior that is never static. Since this process can be particular to the individual researcher, and varies with respect to individual environment and local authority's home care re-ablement structure, any failure to precisely record data, and objectively describe one's findings could potentially jeopardise the reliability of results obtained.

The research style demonstrated is a predominantly qualitative preference. Qualitative researchers study things in their natural settings, attempting to make sense of, or interpret phenomenon in terms relative to the meanings people bring to them (Denzin and Lincoln, 1994), whereas the quantitative methodology tends to be used in the natural sciences to study natural phenomena, using techniques such as laboratory experiments and mathematical modeling. The intention of this study is to pursue a systems-level understanding of supply chain management and home care re-ablement, and to contribute to the knowledge and research within the supply chain management community and to the adult social care sector by collecting data from people in their normal everyday settings.

3.5. Triangulation

The concept of triangulation is used to validate different accounts of the same phenomenon. This method is used to compare and contrast the use of two or more

methods of data collection and can be used to map out, or explain more fully, the richness and complexity of human behavior by studying it from more than one standpoint (Cohen and Manion, 1995). Using various qualitative approaches to collect data on re-ablement helped to gain insight into the health and social care situation, and provided an in-depth understanding of its application. A triangulation method was applied to strengthen qualitative research findings. This was achieved through participant and non-participant observation, interviewing, and documented sources. Although each strategy used to collect data had strengths and weaknesses, they corroborated each other's findings.

3.6. Data collection

Action research is defined as "an informed investigation into a real management issue in an organization by a participating researcher, resulting in an actionable solution to the issue. It is a method by which the researcher may bring new knowledge to organizational members, and discover a workable local theory of benefit to the organization, which may also inform the research community" (Harris, 2008 in Thorpe and Holt, 2008). The aim of this research is to contribute to the adult social care sector through active involvement with local councils. Action research forms a bridge between practitioner understanding and the generation of theoretical knowledge to inform action through which knowledge generation and the development of new practices are integrated and theorized (Somekh, 2006). The goal is to work within the adult social care system and to educate councils by engaging them, to some extent, in research.

An ethnographic approach to collecting data was fundamental to this research. Whilst ethnography is mistakenly used as a blanket term to refer to various qualitative methods, ethnography captures the totality of social life in a particular setting (Kielmann, 2012 In Gilson, 2012). Ethnographic research is used to focus on home care re-ablement and to understand its issues.

Several data collection techniques were used to gain insight into each individual's point of view and subjective apprehensions related to the operational activities of home care re-ablement. Unstructured discussions were used to collect qualitative data. Yin (2003) believes that "interviews are essential sources of case study information", primarily because many studies involve human interaction, and interviews can provide much-needed insight into relatively complex situations. Unlike the quantitative framework, unstructured discussions are intentionally less intrusive, and used to encourage a more genuine and open discussion. Several types of data collection techniques such as discussions, observations, documents and case-study research were used; a literature review was performed to learn whether any similar research had previously been conducted in this field of study.

3.6.1. Discussions

Discussions were "partially non-directive". In other words, each discussion avoided leading questions and started with some notion of the topics that seemed to be of theoretical importance but then became more unstructured as relationships developed

between the participants and researcher (Gill and Johnson, 1997). Developing relationships with participants from several local councils and taking a non-judgemental stance about this particular area of study was valuable; allowing access to important confidential information and knowledge regarding operational activities of home care re-ablement. The senior managers from several local councils, all of whom maintained very busy schedules, were very supportive of the research especially after the researcher attended local council DASS meetings and sub-regional re-ablement group meetings. Table 2 shows the number of interviewees and their associated roles in the case study per council.

Table 2: Number of interviewees per council

Council	Job Role	Number of interviewees
Wirral	Service Development Manager	1
Wirral	Registered Manager	2
Knowsley	Registered Manager	1
Liverpool	Senior Development Manager	1

Participant and non-participant discussions were conducted because they provide perceived causal inference from the subject's point of view which is most desirable within inductive research (Yin, 2003). The goal of the discussions was to engage multiple senior managers to discuss their current state of management of home care re-ablement as well as their experiences, challenges and general opinions of re-ablement. Discussions can provide insights that are not available to researchers working with large

survey samples. No attempt is made to manipulate the situation under study as is the case with experimental quantitative research. Discussions from several meetings led to an established understanding of individuals' experiences and attitudes, with subjective meanings applicable to explain the processes of decision-making and action. This particular data-collection method involved extensive fieldwork and was time-consuming; yet it helped to gain a holistic understanding of the situation.

A set of research questions and topics were prepared prior to the discussions, and were designed based on unstructured interviewing techniques. The unstructured interview, as opposed to structured interviewing, was more flexible. If discussions are too structured then it affects the phenomena under investigation. The questions are carefully designed to provide adequate coverage of each topic, and are open ended in order to retrieve facts regarding the management of adult social care operations for each local council. This is achieved by ensuring that the discussion had the features of a conversation and not an interrogation. Statements from staff were useful in order to gain an understanding of the topics that needed to be pursued further. The purpose of each meeting is to achieve a clear understanding of the key problems affecting re-ablement, and highlight inadequacies of existing supply chain policies. The aim is to gather personal views and factual evidence from professionals within a "real-world" setting of adult social care.

Each in-depth discussion provided an excellent means for collecting valuable data. It is a simple, efficient, and practical way of gathering data, but it depends on the

communication skills of the interviewer and comfort of the participant. The objective is to understand the subject's point of view, rather than create generalisations about behavior. Discussions provided an open framework of questions which allowed the interviewer to focus on a participant's statements. Unlike a questionnaire framework, rigid in its approach, an unstructured discussion was more flexible, enabling the participant to openly discuss and answer questions more completely. Discussions were not restricted to the questions that the interviewer initially intended to pose.

An unstructured discussion provided participants' time and scope to discuss their views on a particular topic. Many questions were created during the meeting, providing the interviewer and participant flexibility to probe for details, or to discuss relevant issues in more detail where necessary. An advantage to this ethnographic approach was that the participants could easily discuss sensitive issues. Unstructured discussions disclosed emergent themes, and ideas, and were an integral part of data-collection. Concepts and questions were designed in advance for the meeting, and were only used to supplement ongoing dialogue throughout each meeting. Caution should be exercised to ensure a laudable selection of subjects to prevent a skewed interpretation of data. A variety of data-collection techniques are used to ensure a non-skewed interpretation of data.

3.6.2. Participant and non-participant observation

The purpose of collecting qualitative data is to learn, and understand how a given local council manages and operates home care re-ablement. Data is obtained by conducting

participant and nonparticipant observations, and is referred to as ethnography. To explore aspects of the home care re-ablement environment, time must be spent observing and interacting with participants to enhance the understanding of supply chain management. This provides a clearer description of subject influence on each specific organisation. The researcher can share each subject's experiences by not only observing what is happening, but by observing their emotions and behaviors (Gill and Johnson, 1997).

Participant and non-participant observation was useful because of its flexibility, particularly in exploratory research (Gill and Johnson, 1997). A disadvantage of an observational approach is that behaviors being observed can change because they are being scrutinized and noted (Myers and Barnes, 2005). This approach can be of limited value or is difficult to validate yet was reliable when combined with other data-collection methods. For example, participant and non-participant observation in the adult social care environment provided valuable background information. The researcher has two roles in a participant observation; as observer and participant. In particular, the role as an observer and participant was adopted during the sub-regional re-ablement meeting and other local council meetings with professionals from re-ablement. A non-participant role was also adopted since the researcher did not work in the adult social care environment. For example, a non-participant role was assumed during a local council meeting that involved several senior administrators from DASS. There were great advantages to both approaches. "There is time to build greater intimacy, allowing access to covert information and to the motives of informants; and uniquely equipped informants can be

treated differently and access to confidential data enabled by a selective and informal process" (Gill and Johnson, 1997:102). The goal was to understand the real-world situation within the adult social care environment from the position of the managers, and be able to interpret the symbols and meanings underpinning operational activities (Cooper et al., 2004). This was particularly useful in trying to understand the philosophy of a local council's DASS. Observations were supplemented by several documents.

3.6.3. Documents

A wide range of documents such as newspapers reports, memoranda, policy documents, minutes of meetings, and reports were studied and are listed in Table 3. This produced qualitative information and made important contributions to this research. Local councils provided access to policy documents in order to understand some of the processes it was going through. For example, documentary analysis of the provision of re-ablement services in a particular local council provided insight and access about its situation, and its approach to health and social care reform. This type of documentary analysis helped to focus on a supply chain management approach in the provision of home care re-ablement. The goal was to explore the full rich set of supply chain management techniques to home care re-ablement.

Table 3: Documents collected for analysis

Type of document	Number of document(s)
Newspapers reports	13
Memoranda	3
Policy documents	91
Minutes of meeting	3
Reports	23

3.6.4. Case-study analysis

Case-study research was adopted as a methodological strategy for data collection and analysis. It was used in conjunction with other data collection techniques and contributes to current knowledge of supply chain management and home care re-ablement; the gap between supply chain management and re-ablement remains wide.

The case-study approach was detailed and rigorous. It was used to probe deeper into local councils with social care responsibilities, and explored new and emergent themes within the supply chain that could improve service user outcomes. According to Yin (1989), a case study refers to an event, an entity, an individual, or even a unit of analysis. Selections of case studies were used to focus on specific issues pertaining to the subject matter and its objectives. Several case studies were conducted to provide insight into the complex, real-life activities and issues that surround a supply chain management approach in home care re-ablement.

Yin (2003) defines a case study as: *"an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident"*.

Yin distinguishes a case study from other research methods. An *experiment* intentionally separates phenomenon from context. *Historical* research involves non-contemporary events, whilst integrating phenomenon and context. *Surveys* generally lack the in-depth investigation of a case study but can investigate phenomena and context together. Therefore, historical research is used to collect information and to understand supply chain systems. This data-collection strategy involves people, agencies and organisations, and is used to uncover information that is used to understand the activities surrounding supply chain management.

There are limitations to adopting a case strategy approach and it is not without criticism. Robinson (1951) argues that case studies are inadequate because they result in the articulation of only "the necessary, and not the sufficient conditions for the phenomenon to be explained". A case study analysis can fail to analyse situations in which the phenomenon does not occur, but Cressey (1953) suggested that conditions that are not always present when the phenomenon is present should not be present when the phenomenon is absent. Case studies are not intended as a study of the entire organisation, but, rather, are intended to focus on specific issues that provide a better understanding, in this case, of the operations management in home care re-ablement within various local councils. This method does lack scientific rigor and reliability, and

does not address the issue of generalisations (Johnson, 1994). However, case study research can be useful in capturing the emergent and immanent properties of life in organisations, especially where it is always changing (Hartley, 1994). It enables a holistic view of specific phenomenon, and provides a clearer "snapshot" of supply chains since sources vary in terms of evidence used.

Yin believes that the criticism against case study analysis on the basis of an inability to generalise is callous. Similar types of criticism can be directed toward other types of research methods. Yin (2003:10) states, "However, consider for a moment that the same question had been asked about an experiment: How can you generalize from a single experiment?" Typically, generalisations are developed through repeated experiments, and generalisations from multiple case studies are, similarly, derived through repeated case studies. Hoaglin et al., (1982) recognizes the benefits of integrating case study as a method for researching, but recognizes that it is not easy to understand or implement and, for that reason, it receives undeserved criticism:

"Most people feel that they can prepare a case study, and nearly all of us believe we can understand one. Since neither view is well founded, the case study receives a good deal of approbation it does not deserve".

The "validity" of a case study method is criticised by the research community. Several case studies are used to support this research in order to avoid potential inaccuracies and authenticity-related issues. Case studies are subject to both internal and external criticism. Internal validity is problematic in causal (explanatory) cases, and can be dealt

with using "pattern-matching" (Campbell, 1975), which is supported by several documented sources of information for a specific case in order to develop a theoretical proposition. External validity is related to the genuineness of the results from case study material. Many criticisms originate when a single-case study approach is taken, as opposed to using multiple case studies to support data. A case-study method is used to bridge the gap between theory and practice and is supplemented with secondary data.

Case-study research is an appropriate way for researching an unexplored area of interest and a viable research method for learning and understanding the complexities about the home care re-ablement environment. Using secondary sources alongside a case study approach helps to avoid duplication of research effort and investment.

The research techniques used are supported by multiple, reliable, documented sources, to ensure validity is maintained. It is important to recognise that each local council is independent, and this research does not represent all local councils in England. Results are gathered from multiple organisations in order to improve home care re-ablement by enabling management to progressively amend and develop their local authority's home care re-ablement based on needs and relative interests.

Academic and practical contributions continue to identify key issues affecting home care re-ablement organisations (Glendinning, 2003; Glendinning and Newbronner, 2008),

but fail to restructure current systems in order to highlight service user needs and expectations. Attempting to understand what is happening in a particular setting illustrates an apparent disparity within individual supply chains, and its potential economic value to health and social care. Perhaps the inability to implement change and restructure the adult social care environment relates to the current political and economic climate, and the lack of support for supply chain research.

3.7. Ethics issues

Ethical issues were addressed prior to each discussion. Prior to the start of most meetings with senior managers from different councils, the notion of anonymity and confidentiality was crucial in the research participant-researcher relationship. Senior managers often indicated that the information they were going to share was highly-sensitive, and at times was not to be included in the record of data recorded. Subsequently, this type of data collection technique could be seen at times to be problematic and unreliable because the interviewer is relying on the personal opinion of the senior manager and must respect their wishes. This technique led to a deepened appreciation of how each individual felt, and what they thought about their organisation's current operations management practices.

3.8. Data analysis

The principle aim of this research was to understand and explore how local councils manage its home care re-ablement operational activities and how it is currently implementing supply chain management techniques without explicitly realising it.

Ideally, the study would have engaged with all 152 local councils throughout England, but this was not feasible due to time limitations, and would have been beyond the capacity of a single researcher. Information was obtained through meetings arranged with individuals from three local councils: Wirral Council Department of Adult Social Services; Knowsley Home Care Re-ablement; and Liverpool Council Adult Services and Health.

3.8.1. Memo writing and analyses

Memo writing is an essential part of qualitative research; writing memos helped to support coding and developing categories. Scholars from diverse disciplines (Mishler, 1984; Sandelowski, 1994; Tilley, 1998; Lapadat and Lindsey, 1999) acknowledge the importance of it in qualitative research (Poland, 2002). Memos, or a set of notes, are continuously kept to record thoughts and ideas. At later stages in the research process it is extremely useful when needed to reflect on, and compare, discussions or meetings.

Various data collection methods helped to build a comprehensive picture of context in each organisation. In particular, each discussion was transcribed through note taking. Writing during each meeting was arduous, but enabled an environment more conducive to a natural interview, as opposed to the use of a tape recorder, which could introduce anxiety and blatant discomfort. The transcribing of discussions was sensitive in many ways. Quotations may cause potential concern for any given participant if identifiable, and could only be included if prior permission was granted.

After every meeting and discussion, each transcription was re-written, downloaded, and saved for analysis. The notes were not analysed using computer software programs for qualitative data analysis such as NUDIST or NVivo, which can manage information efficiently, yet cannot ascribe meaning to this material (Weitzman and Miles, 1994). Instead, careful examination of individual transcripts was adopted with a more traditional "hands-on", manual approach. During this process, themes and sub-themes emerged and problems were identified that had been expressed by participants. This would not have been recognised by computer software. A conventional method was arguably more useful and helped to understand and analyse each meeting, interview and document in a more valuable way, especially since supply chain management concepts are new to adult social care.

3.9. Summary

This chapter has introduced and discussed the choice of grounded theory as a suitable research methodology for this study. The views of several senior managers from various local authorities are necessary to be captured as information about how home care re-ablement is managed is important to this research.

A qualitative method was used after multiple forms of literature on "research methods" were reviewed (Danity, 1991; Denzin and Lincoln, 1994; Pettigrew, 1996; Houghton et al., 2013). Traditional methods in the form of action research, case studies discussions, observations, and documents were used to analyse and report qualitative data (Corbin and Strauss, 1990; Kvale, 1996; Houghton et al., 2013). The work produced by participants

through these various data collecting techniques constitutes an integral component of the research process. Despite the growing significance of supply chain management in other industries such as manufacturing and service, supply chain management concepts have not evolved within adult social care.

An inductive, qualitative, methodological procedure provided answers to questions about local councils' DASS that were not possible to capture quantitatively. Data triangulation was used to avoid potential issues that could arise from single case-study analyses. Triangulation involved multiple-data sources in order to support a principle theory. Of the plethora of different approaches that could be applied to this research, inductive reasoning is the preferred option to represent the objectives discussed.

Local councils with adult social care responsibilities still struggle with creating a framework and the best ways to manage its operational activities. They continue to seek out best practices for identifying and managing key problems of home care re-ablement that require a better approach. The most salient feature throughout the data collection process was the lack of research and awareness of supply chain management concepts among adult social care managers; a supply chain management approach should be seen as a valuable resource to local authorities. Reforming adult social care has become such a major political issue yet what is really needed is systematic implementation to design and manage the whole system of care. This became more apparent after an in-depth historical review of adult social care. It led to a better understanding of the structural

barriers affecting several local authorities home care re-ablement service in the North West of England as discussed in Chapter 4 and 5.

Chapter 4: Knowsley Reablement Service

The chapter focuses on a home care re-ablement service located in Knowsley, Merseyside. This experience was a source of important insights into other home care re-ablement service models, enabling a number of design challenges that affect care planning, care delivery and preventable hospital usage to be identified.

4.1. Introduction

For re-ablement to be successful, local authorities must have a better understanding of it in order to make the right improvements to it (Baker et al., 2001; Hibberd, 2008; Rabiee & Glendinning, 2011). A better understanding of re-ablement was made possible by conducting several case-study analyses. The case studies were performed at different times throughout the North West of England whereby several senior organisers have been asked to define re-ablement. They understand it, yet describe it in different ways. The complexity and variability of definitions are confusing even to members of the council and to the public. This confusion leads to unmet care needs, delays in receiving appropriate care, hospital usage and long-term care support (Department of Health, 2010). Without a concise, meaningful and generally applicable definition of home care re-ablement by local authorities it is difficult to establish and implement appropriate strategies to make system improvements (Peet et al., 2002; Department of Health, 2010; Lewin et al., 2013; Social Care Institute for Excellence, 2013; Parker, 2014).

4.2. Knowsley case study

A case-study analysis of Knowsley Reablement Service is used to understand home care re-ablement more deeply. In this sense, speaking to members of the Social Services Department provides a rich description of the field that would not have been possible by conducting a survey (Zainal, 2007). The senior manager mentions several complex issues such as capacity, referral process and integration. Once these issues were mentioned it became very important to further explore how they affect their re-ablement service. Since case-study research is not limited to a single source of data, multiple sources of evidence such as discussion, observations, and documents are used to deepen the understanding of the operational challenges. Combining data from multiple sources is instrumental to research because it helps to understand Knowsley's re-ablement service and the issues they face.

Knowsley Reablement Service became operational as an in-house re-ablement service in 2009. The service is available for adults aged 18 and older and living in the boroughs of Halton, Knowsley, St Helens, Warrington and Wigan. Knowsley Metropolitan Borough Council runs the Knowlsey Reablement service. The council decided it was in the best of their residents' health and wellbeing to form partnerships with 5 boroughs. In addition, having a partnership with 5 boroughs allows the council to commission health and social care services from a larger network of care providers. Commissioning a variety of providers increases competition and improves value for money. This kind of market

should support the kind of self-directed social-care services people need to access in order to meet their individualised needs.

In 2011 the population of the Metropolitan of Knowlsey was 145,900 (Office for National Statistics, 2011); as of 2011 the total population of the Metropolitan Borough of St Helens was 175,308 (Office for National Statistics, 2011), Borough of Halton was 125,746 (Office for National Statistics, 2011), Warrington was 202,200 (Office for National Statistics, 2011), and Metropolitan Borough of Wigan was 317,800 (Office for National Statistics, 2011). In the Metropolitan of Knowsley, adults 85 and older are set to outnumber any other age group by 2019 (Cammell, 2010). These demographic changes are an indication of what lies ahead for the local authority.

In November 2011 a meeting was organised with a manager from Knowsley Reablement Service to discuss the service. The service provides up to six weeks of re-ablement for those needing help to return to independent living; the service is used the most by adults' aged 80 and older. According to data provided by a manager from Knowsley "a total of 48 adults aged 80 and older were receiving re-ablement care from Knowsley Reablement Service compared to a total of 40 adults aged 65-79 in March 2011; in February 2011 a total of 45 adults aged 80 and older and 41 adults aged 65-79" were receiving re-ablement care from Knowsley Reablement Service (Knowsley, 2011). The source of most of the referrals was from the Hospital Care Management Team; they had increased

the capacity of bed-based intermediate care to meet rising demand. Since most of the referrals were from hospital a major focus was on preventative care services - such as falls prevention and community therapy - in order to reduce future demand for health and social care services.

In 2010 Knowsley budgeted £1.7 million for re-ablement and in 2011 this was reduced to £1.4 million; in 2013-14 funding was £1.015 million (Knowsley Clinical Commissioning Group, 2013). Part of central government's care and support reforms is drawing out efficiencies across the health and social care system (Local Government Association, 2013). Note, additional funding for social care was allocated in 2010 Spending Review but, since councils spend more than one third of their budget on adult social care, they had to make service reductions by 2.68 billion, or 20% of the budget. This is a way for councils to produce savings albeit it placing a lot of pressure on them to run an efficient and effective re-ablement service (Local Government Association, 2013). Clearly, major funding cuts are affecting them and the community and are an ongoing problem. Because of this, more efficient and effective strategies have to be considered without reducing access to needed care services or creating burdens for providers.

An integral part of the organisation and delivery of re-ablement by Knowsley is the referral process. Referrals are made by hospital and community teams; the hospital discharge team accounts for approximately 60% of referrals and the community teams account for 40%. It is fraught with flaws - inconsistent quality of referrals and

assessments, need for streamlined paperwork and supportive information and communication technology arrangement - that often lead to service delays because hospital and community teams work independently and use different referral forms and methods albeit there is a referrals office that houses health and social professionals. For major change to occur to Knowsley Reablement Service, health and social care need to collaborate in the referral process in order to reduce errors, delays in service delivery, hospital admissions, and long-term care use. Unlike Knowsley Reablement Service, some health and social care services are working to remove paper-based processes in order to create an efficient and effective care system.

Aintree University Hospital NHS Foundation Trust has actually implemented a new electronic medical records system to improve the quality of patient care, enhance operational productivity and reduce cost (Pearson, 2014). The Trust's new electronic medical records system provides clinicians instant access to patient information, guarantee notes availability and reduce the costs, risks and space associated with paper handling and storage (Pearson, 2014). Like Aintree University Hospital, Knowsley should implement a similar electronic records system as a solution for all the problems associated with their referral process. Also, it enhances collaboration among care providers irrespective of location. Clearly, re-ablement harnesses the joint input of health and social services (Social Care Institute for Excellence, 2011). Knowsley's Clinical Commissioning Group should be working and commissioning collaboratively with their local council so that a person's re-ablement needs are being met.

The referral process is not a static process, but dynamic (Department of Health, 2010). Instead of a single, one-off assessment, a service user's care or support package needs to be continually reviewed and reassessed in order to provide the right kind of care package. For it to be successful, it needs to be accurate and timely. To achieve this, local authority and hospital should work together so that people receive care packages based on their care needs and preferences.

In 2011 a major focus of Knowsley was to develop a thorough and generally applicable definition of home care re-ablement. Progress can be stymied and process improvement may be severely limited if there is no clearly defined definition and process (VanVactor, 2013). Knowsley Metropolitan Borough Councils and NHS Knowsley have adopted their own working definition of re-ablement: "The restoration of optimal levels of physical, psychological and social ability within the needs and desires of the individual and his/her carer" (Joint Improvement Partnership South East, 2010; Wood and Salter, 2012). It was important to Knowsley to clearly define re-ablement in order to improve their relationship with health.

4.3. Findings: Key problems affecting efficiency

As the study unfolded and more data is collected for analysis, along with coding and memo-writing, it became clear what the underlying problems of re-ablement are and the factors detracting from it performing effectively and efficiently: availability and access;

knowledge and skill of occupational therapists; staff capacity planning and control; and a working multi-disciplinary partnership between hospital and Knowsley.

4.3.1. Availability and access

Knowsley Reablement Service and hospital are working together to provide re-ablement to people in its community. Local structures need to be developed by the re-ablement service and hospital so that they have ongoing channels of communication and access to each other's services. To achieve this, Knowsley setup a Rapid Response Social Work Team in order to receive referrals that were either faxed-in or called-in via telephone by the hospital discharge team; at the time of research the form was not available online because Knowsley and NHS Knowsley did not use the same electronic interface. Once someone from the team receives a person's referral application and the person is accepted for re-ablement, the application is re-copied by hand onto another 26-page application; NHS Knowsley Hospital Care Management Team has a different referral application process. This is extremely time consuming and costly since Knowsley Reablement Service and NHS Knowsley computer systems do not "speak" to each other.

Communication between health and social care is vital during the referral process; to be successful requires the integration of hospital and local authority (Social Care Institute for Excellence, 2013). This became more apparent during discussions with Knowsley. Its goal was to overcome this barrier with the hospital since disjointed relationships place unnecessary constraints on relationships among various entities and affect the delivery of

care services (VanVactor, 2013). What was needed at the outset was a well-coordinated and comprehensive referral system. This would encourage them to participate in discussions with each other about a person's care plan. Despite them knowing this, access and availability continue to be a major problem for Knowsley Reablement Service and hospital. At the time, major problems for the re-ablement service included delayed hospital discharges, bed blocking, budget constraints and communication issues between the hospital trust and re-ablement service. As of 2012/13, the responsibility for commissioning and providing re-ablement shifted from local authorities to acute trusts and clinical commissioning groups (CCGs). This means that hospitals are responsible for following their patients for a period of 30 days following their discharge from hospital in order to prevent readmission, otherwise, the hospital will face financial penalties. To avoid financial penalties, hospital trusts such a Knowsley, need to plan carefully for hospital discharge and provide suitable post-discharge support so that readmissions to hospital are avoided (Wood and Salter, 2011). This should significantly increase the demand for re-ablement services.

4.3.2. Knowledge and skill of occupational therapists

There were no occupational therapists working with the re-ablement team. There are no rules about the composition of re-ablement teams (Wood and Salter, 2011) so it is not critical for occupational therapists to be embedded in the service but they do have an important role in the delivery of re-ablement (Social Care Institute for Excellence, 2013). This is an emerging issue for Knowsley because they realise occupational therapists help

to improve a person's care outcome since they are more qualified and trained to understand the medical, physical, and psychological impact that is pivotal to restoring and aiding in recovery. Many of them are likely to have working experience in health and social care settings, and such access to specialist skills within the re-ablement team may contribute to successful and efficient care services (Rabiee and Glendinning, 2010). They have unique skills and training in all aspects of rehabilitation, recovery, and enablement (College of Occupational Therapists, 2013). Occupational therapists should be involved in discharge planning as they could examine an older person's ability to independently and safely function within their own environment (Atwal et al., 2008; Wales et al., 2012). If NHS Knowsley and Knowsley Reablement Service combined discharge planning and occupational therapy practice it could lead to better outcomes and reduce hospital admissions (Heywood and Turner, 2007; Allen and Glasby, 2010; Francis et al., 2011; College of Occupational Therapists, 2013). At the time of research, it was not clear if NHS Knowsley and Knowsley Reablement Service would ever join up to do this. However, according to a public document published in 2012 Knowsley Council developed the Integrated Discharge Team at Whiston Hospital, in partnership with St Helens and Halton (Knowsley Council, 2012). The team now includes occupational therapists and works to ensure people are safely discharged home with the support of re-ablement services. It is not clear how the Integrated Discharge Team at Whiston Hospital is working together to reduce hospital readmissions or bed blocking.

4.3.3. Staff capacity planning and control

During the meeting in Knowsley, staff capacity planning and control was mentioned as a major weakness. "Re-ablement carers were not efficiently and effectively utilised by it" (Knowsley, 2011). It was affecting the amount of time and money spent on the service along with the quality of care they provided to people who need it.

A major concern of the local authority was "the amount of downtime that occurred between 2pm and 4pm each day" (Knowsley, 2011). This happens to be the time of day few people request re-ablement. Since many older people need assistance in the morning getting dressed or in the evening preparing for their bedtime, the carers remained on the schedule to work even if there were no appointments requested. As Knowsley was aware of this, a favourable option is to reduce the downtime spent by staff.

Part of the problem is that there is little focus on monitoring and evaluating the re-ablement service. Measuring functions such as cost of service, total time spent by carer including downtime, quality of service, and customer experience for social care should enable Knowsley and all local authorities to better understand the benefits of re-ablement and the benefits it can achieve. Benchmarking and measuring progress in terms of real people's experience of person-centered coordinated care requires commissioners to act on the results (Think Local Act Personal, 2014); benchmarking is an important tool that Knowsley, and other local authorities, can use to reduce expenses and simultaneously

improve product and service quality (Benson, 1994). The process or activity that needs to be benchmarked should determine the types of measurements used. Key performance indicators for the Better Care Fund 2014/15 are being developed and are likely to include:

i. A reduction in delayed transfers of care from hospital to home,
ii. Improvements to unplanned emergency admissions,
iii. A reduction in unplanned admissions,
iv. Improved performance from re-ablement services,
v. A fall in admissions to residential and nursing home care, and
vi. Feedback from service users and carers on their experiences of the care system (Kaiser, 2014)

Key performance indicators are an important part of the information required to determine and explain how well the council's service is doing. This is important but meaningless unless there is an infrastructure in place to track and monitor the key performance indicators set forth by local authorities.

Knowsley council could track and monitor care activity much more accurately by using information and computer technologies. As a benchmarking tool, Knowsley could use it to measure their service progress and costs, revenues, working capital, quality of service, speed or response dependability, and flexibility in order to identify common pitfalls. Greater investment in data collection technology – by local authorities - could relieve much of the human workload and make feedback more timely (Boyce et al., 2014). Clearly, data should be used to evaluate the effectiveness of the service. To measure

success, publicly reported, robust measures of patient-reported outcomes need to be developed and implemented for this population (older people); information has become the currency of success throughout many industries and health care is no exception (Notte and Skolnik, 2013). Many countries are moving towards increased use of information and communication technologies to improve healthcare delivery and performance (Adler-Milstein et al., 2013). It allows organisations to track data and information and measures performance activity against other organisations. The information can be used to determine which areas need improvement.

"The need to measure Knowsley's service is important" (Knowsley, 2011). There could be important benefits to doing this. This can help them to keep track of the progress of the re-ablement service. They are in favour of using technology to evaluate the effectiveness of peoples' care plans but are faced with budget issues. Feedback about the service should also help researchers and policymakers gain a better understanding of re-ablement care and identify potential bottlenecks. Unfortunately, at the time, Knowsley did not have enough money in its budget to invest in the appropriate technology needed to implement a system that measures and captures the performance of their service. As a result the same mistakes and problems they continue to face are being made.

Unlike other industries such as manufacturing and service (Sower, 2007), social care has not fully reaped the benefits of information and computer technologies for benchmarking

purposes. Unlike the NHS, there is very little description in social care of the use of performance measures and techniques supporting internal control: managers monitoring the progress of their organisations in terms of efficiency, effectiveness and other quality dimensions (Bowen and Payling, 1987; Clarkson, 2010). The purpose of measuring performance is for learning and improvement (Sower, 2007) yet much of social care remains poorly measured or unmeasured. From the information gathered during discussions with a senior manager, Knowsley Reablement Service and hospital need to identify performance measures in order to deliver a high quality and effective re-ablement service.

4.3.4. Integrated multi-disciplinary partnerships

For Knowsley Reablement Service and hospital to be successful, they need to be integrated; collaboration between health and local government is commonly considered best practice (Hayes et al., 2012). "Integration, and the need for a more joined-up care service is needed" (Knowsley, 2011). Several government documents such as The Care Act, Caring for our future White Paper, and Shared commitment to integrated care and support highlight the need for an integrated health and social care system (HM Government, 2012; HM Government, 2013; The Care Act, 2014; Think Local Act Personal, 2014). It is important for the service to develop integrated services with hospital in order to achieve the best possible outcomes; models that unite health care professionals and improve communication are likely to be the most successful in providing efficient and cost-effective care (Fabbricotti et al., 2013). To determine if

integrated care does indeed have positive effects on quality or cost, the first step is to decide how it can be measured (Chen and Ayanian, 2014).

Knowsley Reablement Service should determine how many times a person has been admitted to hospital prior to re-ablement. Doing a simple comparative analysis of a person's hospitalisation(s) prior to and after services are rendered determines if there are obvious cost reductions. The average cost of a non-elective, inpatient, short and long stay (excluding excess bed days) in 2012-13 was £1,489 compared with £1,436 in 2011/12 (Department of Health, 2012); two thirds of NHS clients are aged 65 and older (AgeUK, 2014). This has a significant impact on health and social care since money for adult social care is now allocated to the NHS. Knowsley Reablement Service and hospital need to work together to help older people avoid or prevent the onset of illness and reduce the use of accident and emergency services. In order for the service to have a big impact on care spend, it is essential that it be seen as an approach to be adopted across the whole health and social system and not just a type of home care service. Knowsley Reablement Service and hospital need to be willing to work together to achieve an effective and efficient service. The general lesson is that a "hospital at home" type environment is workable but it needs to have the right support in terms of people and money.

4.4. Are there cost savings?

Based on the Knowsley Reablement Service case study, there is good evidence, albeit limited, to suggest that re-ablement requires a substantial up-front investment in terms of money and staff; the overall goal of the service is to reduce the need for costly ongoing care support. The government supports the ongoing development of re-ablement care by providing money to health. Because of this, health via clinical commissioning groups (CCGs) decides how much money is allocated to adult social care services such as re-ablement. A central tenet of government funding for re-ablement has always been that investment in adult social care benefits health services and improves overall care outcomes (Social Care Institute for Excellence, 2013).

Research evidence demonstrates that re-ablement improves wellbeing and independence, prolongs people's ability to live at home and removes or reduces the need for commissioned care hours in comparison with standard home care (Kent et al., 2000; Glendinning et al., 2010; Lewin et al., 2013; Social Care Institute for Excellence, 2013). It is important to understand that successful re-ablement outcomes look different to different people. They are relative to people's abilities at the start of the service and will depend on other variables, including their motivation to make progress and the goals that they wish to set. For local authorities, service outcomes such as "care hours required at the end of the service" are a common measure of the success of re-ablement and are intended to illustrate the extent to which a person has regained independence (Social Care Institute for Excellence, 2013). Based on documents provided by Knowsley Reablement

Service, it had "98 new referrals to re-ablement in March 2011" (Knowsley, 2011). The "number of service users requiring no further support" was 14, and the "number of service users requiring ongoing support", e.g. ongoing domiciliary care, was 49 (Knowsley, 2011). Because of re-ablement care, nearly 50% of their service users were kept out of hospital whilst receiving re-ablement care at home and a total of 156 service users, or 27%, had a reduced package of care. Clearly, Knowsley Reablement Service generated a cost savings to health and long-term care services because it reduced the need for commissioned care hours and reduced hospital admission, or re-admission to hospital, for at least six weeks.

4.5. Summary

Effective and efficient home care re-ablement provides the right service plan to the right person at the right time. It helps to facilitate earlier hospital discharge and reducing hospital usage. Consequences could be far-reaching if a person's transition in care is inadequate, such as hospital readmission and even mortality. This means that health and local authorities must work together to provide efficient high-quality care with minimal waste despite their differences (Cookson et al., 2011); the funding stream to local authorities is different compared to health care funding (Rigby et al., 2011). A major problem that needs to be addressed is uncoordinated health and social care services; the lack of joined-up care is the biggest frustration for patients, service users and carers (HM Government, 2012). Uncoordinated care can lead to unacceptable hospital delays and discharge, and hospital admission or readmission to hospital; coordination of care

activities, such as orchestrating referrals, managing prescriptions, or ensuring that patient information is transferred clearly and correctly between care providers might lessen a patient's susceptibility to a hospital admission (Nyweide et al., 2013). A failure to integrate care services also means that taxpayers' money is not used as effectively as possible, and can lead to increased costs for the NHS (HM Government, 2012).

Chapter 5: Barriers to Efficient and Effective Home Care Re-ablement

This chapter identifies barriers and challenges to achieving efficient and effective home care re-ablement. Whilst re-ablement has shown to generate positive results in its widespread use so far, it still faces several hurdles that inhibit it from operating efficiently and effectively. A case study based in one local authority, along with a literature review in the field of home care re-ablement, is used to identify areas of improvement.

5.1. Introduction

There are significant barriers and challenges to making re-ablement work efficiently and effectively. Because of these barriers and challenges, the future of home care re-ablement remains uncertain. With this kind of uncertainty, there is a strong push by central government for local authorities to re-focus their home care re-ablement service. Research suggests re-ablement is an effective alternative to traditional homecare and reduces the overall cost of social care (Glendinning and Newbronner, 2008, Institute for Research and Innovation in Social Sciences, 2010; Manthorpe, 2011; Lewin et al., 2013). In Australia, people who received re-ablement were less likely to use a personal care service throughout the follow-up period or any other type of home care over the next 3 years which produced a cost savings of AU 12,500 (£6,526) over nearly 5 years (Lewin et al., 2013). Clearly, re-ablement achieves cost savings by decreasing the demand for home care services.

In the US, a study was conducted on the effectiveness of restorative home care, labeled home care re-ablement in the UK, and found that individuals who received restorative home care were more likely to be living at home and show greater improvement in their self-care, had shorter care episodes and had a reduced likelihood of hospital admission during the care episode (Baker et al., 2001; Tinetti et al., 2002; Tinetti et al., 2012; Lewin et al., 2013). In light of the positive evidence on home care re-ablement, more robust evidence is needed to identify the most cost effective service delivery model for re-ablement services in England. Re-ablement is not only central to the government's vision for adult social care reform but also to local authorities. Since central government and local authorities are committed to making re-ablement work more efficiently and effectively, it is important to identify and understand the barriers to achieving this. To understand how re-ablement works and common problems surrounding it Wirral Council commissioned this research in order to identify barriers affecting their service.

5.2. The fundamental flaws of home care re-ablement

Re-developing home care re-ablement as a preventative, productive and people-centered service is difficult for local authorities to achieve (Department of Health, 2009). First, it requires political and economic support from the central government to achieve this because it is their goal, together with local authorities, to reduce health care costs, promote joint working between health and social services and to restore an individual's independence - ultimately improving a person's health and well-being (Department of Health, 2010; Department of Health, 2011); central government is allocating up to £300

million a year to the NHS as part of its commitment to further preventative care (Department of Health, 2010a; Social Care Institute for Excellence, 2013). In 2012, the government published its White Paper entitled "Caring for our Future". The purpose of this report is to:

i. promote preventative care and older people's independence and wellbeing;
ii. give people more control over their own care and support e.g. personalised budgets and direct payments;
iii. integrate care services. A comprehensive preventative care system remains a challenge for central government and local authorities to achieve.

Local authorities and health authorities struggle to promote and deliver joined-up care services (Department of Health, 1998; Department of Health, 2007; Department of Health, 2010; Audit Commission, 2011; Department of Health, 2011). A case-study analysis of Wirral Council's Short Term Assessment and Re-ablement (STAR) service is used to identify what the barriers are and how they create inefficiencies. It is especially important to STAR and council "to sustain the re-ablement service because 65% of referrals complete their package of care and require either no ongoing service or reduced level of care" (Wirral, 2010). The impact and effectiveness of re-ablement can lead to long-term independence for some people.

In-depth discussions with staff from STAR and the Council unearth inefficiencies in the service so recommendations can be made. Initially it was difficult to establish trust with STAR and the Council so several meetings were arranged with both to break the barrier (Wirral, 2010; Wirral, 2011). Due to the nature of collecting information based on the research method chosen, it was important to keep in mind that people behave differently when being observed especially in their workplace and this may affect the validity of the findings. However, based on the information provided by STAR and the Council the barriers are:

i. a lack of academic evidence of the application of supply chain management for home care re-ablement,
ii. a lack of, or poor, integration in the health services supply network,
iii. inadequate information and communications technology,
iv. unacceptable referral process, and
v. poor planning and control in logistics.

5.2.1. Lack of academic evidence

Based on the Wirral case study, and literature on health and social care service operations management, there are gaps in the research evidence. The volume of research is limited and its reliability and relevance to practice could be improved (Francis et al., 2011; Ham et al., 2012). More research needs to focus on the cost-savings benefit to the NHS and long-term care, how this model of care improves older peoples' health and well-being and reduces hospital usage (Care Services Efficiency Delivery, 2007; Anderson and Edie,

2009; Cammell, 2010; Care Services Efficiency Delivery, 2010). Furthermore, there is a major gap in evidence-based practice that requires more attention. McLaughlin and Shardlow (2009:16) in Woolham (2011:27) note that "…the majority of councils that provide services for adults do not have a workforce that is used to carrying out research.....This lack of familiarity with the conduct of research, combined with a tendency to proceduralize, generates an approach to research governance where all risks are managed through ever more detailed and precise procedural requirements. This is grounded in a belief that if the procedure is carried out then risk will be eliminated". In other words, a research infrastructure needs to be put in place whereby it is managed and resourced by a proper research workforce; research requires specific skill and time. Research in this area would maximise the value of home care re-ablement and would contribute to the whole system of care. Research in this area is important because it provides valuable information about disease trends, patterns of care, and health care costs and use; little is known about re-ablement outcomes, e.g. can re-ablement services substantially reduce mortality and morbidity at reasonable costs?

Targeted research about home care re-ablement could help health and local authorities to focus on preventative health care and lead to a systematic, reproducible preventative care-based process; translational research - the convergence of research, education and health and local authorities – involves people from each facility working together to understand how they could contribute to improving preventative care (Crane, 2012). Importantly, engaging people in this way is necessary to understand what changes need to be made for the sake of home care re-ablement to improve older peoples' care outcomes.

Wirral's re-ablement service is "cost-effective and can remove or reduce the need for ongoing care" (Wirral, 2010). There is a small but growing evidence base that describes re-ablement as cost-effective because people may use fewer social care services as a result of using a re-ablement service (Glendinning et al., 2010; Francis et al., 2011; Manthorpe, 2011; Lewin et al., 2013). It is not the cheapest option since re-ablement requires substantial up-front investment with an average cost per user of £2,000 for a six-week period, which is greater than the cost of providing conventional home care which costs approximately £1,392 per user (Le Mesurier and Cumella, 1999; Glendinning et al., 2010; Francis et al., 2011) but is associated with better health-related quality of care and social care outcomes over time compared with the use of conventional services (Glendinning et al., 2010; Lewin et al., 2013). If the average cost of a successful re-ablement outcome is £1,609, approximately £5,000 per annum is not used for long-term care services (Glendinning et al., 2010). Home care re-ablement leads to cost savings in the longer term and fits well with the government's emphasis on prevention and early intervention. The evidence on home care re-ablement is positive albeit limited.

The research infrastructure surrounding re-ablement is limited so Wirral Council provided documentation showing cost savings and, in some cases, "reduces or delays a person's need for ongoing care support" (Wirral, 2010). However, it remains a challenge for the council to provide a cost-effective Wirral-wide re-ablement service with "one-third of staff traveling by public transport and with staff employed on guaranteed hours" (Wirral, 2010). The council agrees that it cannot continue to operate re-ablement in this way and need to improve its systems and processes. It is important to identify how new

knowledge can be integrated with existing practice (Marsh et al., 2005) so council and STAR can efficiently and effectively provide a better re-ablement service to people who need it. Home care re-ablement is new within the home care service and requires an integrated approach between various organisations providing health and social care. However, this kind of intervention in social care is not "new" to occupational therapists. Their unique skills and training in rehabilitation, recovery and enabling have made them valuable to home care services such as re-ablement (Manthrope, 2011). Since occupational therapists usually work within health and social care service settings they should play a major role in the re-ablement service by ensuring re-ablement is delivered appropriately by both care services. Since occupational therapists are commonly associated with re-ablement (Francis et al., 2011), they should have more input into the development of it. Developing a re-ablement service model that includes occupational therapists would also be key to developing a stronger research infrastructure. Clearly, more home care re-ablement research is needed in terms of its financial benefits to health and social care services, and amount of time people independently remain at home after completing a package of care (Marsh et al., 2005; Lewin et al., 2013).

The current disparity between the health and social care research infrastructure reduces the effectiveness of social care in delivering welfare and in reducing inequalities stemming from social factors (Marsh et al., 2005). In other words, investing in home care re-ablement research is important to health and local authorities and could reduce disparities between health and local authorities. Since partnership working - an underdeveloped area of research in re-ablement - is a persistent theme of the health and

social care modernisation agenda, a stronger evidence base is needed for researchers, practitioners and policy makers and encourages a better working relationship between health and local authorities. Having a shared, reliable knowledge base improves policy and practice, and boosts service efficiency and curbs cost by helping to identify and better understand what works in practice (Clohessy, 2013). The current evidence base for home care re-ablement is limited (Glendinning and Newbronner, 2008; Glendinning et al., 2010; Rabiee and Glendinning, 2011; Social Care Institute for Excellence, 2012), and this highlights the need for practice-based evidence; more research is needed that brings together new knowledge and ideas with existing practice. Clearly, there are positive signs of a growing research base for home care re-ablement. The establishment of the Social Care Institute for Excellence (SCIE) provides a focus for the quality of evidence used to improve policy and practice (Marsh et al., 2005). The Wirral Council case-study makes a contribution to health and social care practice and academia.

5.2.2. Health services supply network- Integrating care

It is becoming increasingly important that local authorities and the NHS work together during the whole re-ablement process; Wirral's home care re-ablement service is funded jointly by health and social services and cost £3.6 million during 2009/10. Initiatives that support working partnerships and cultures between providers of care are vital (Davies et al., 2011). "There is a broad consensus amongst people who use services, carers, providers and commissioners that health and social care needs to be coordinated" (Social Care Institute for Excellence, 2013). Doing so could achieve better care outcomes and reduce health and social care costs (Walshe et al., 2006; Rostgaard et al., 2012; Cochrane

et al., 2013; Miller, 2013). A coordinated and integrated provider network strengthens the links between care systems and is seen as a solution to problems of fragmentation and poor coordination in health and social care (Walshe et al., 2006). In many countries, national, regional, local inter- and intra- collaborations have been introduced to improve health outcomes (Hayes et al., 2012); an integrated approach to care is not only good practice but reduces fragmentation and duplicative services. Integrating care services is an opportunity to improve the efficiency and efficacy of re-ablement albeit there is a need for more evidence to prove this (Hayes et al., 2012). Integration between health and local authorities needs to be established and documented to determine if integration of services does yield positive results, e.g. health and cost improvements. A manager from Wirral Council said "this could be achieved by working in co-financed multi-disciplinary teams and having access to a joint budget provided by one common administrative body" (Wirral, 2010). It is not clear whether integrating care services is the answer but it is identified by central government as a way to improve the standards of care services being delivered (Hayes et al., 2012); Wirral Council appeared enthusiastic about collaborating with their local health authority.

Compared with industries such as manufacturing and services whereby suppliers of products and services are carefully managed by organisations. This is referred to as supplier relationship management (SRM). Supplier Relationship Management is the process that defines how an organisation comprehensively interacts with other organisations that supply the products and services that it uses (Mettler and Rohner,

2009; Chartered Institute of Procurement & Supply, 2015). This is not a widely practiced concept between health and local authorities, yet seems to yield positive outcomes in other industries because it streamlines processes between organisations and their suppliers. Clearly, this would be a helpful concept for local authorities and health to use since there are various care providers involved in a person's care. A poorly coordinated supply network could have a devastating effect on a person's care outcome (Christiansen and Roberts, 2005). The Scottish Government has commissioned NHS National Services Scotland to work in partnership with the Scottish Government, NHS Boards, Local Authorities and others to develop a Local Authority Dataset with associated definitions; Health Boards and Local Authorities will integrate all health and social care services from April 2015. This is referred to as the Health and Social Care Data Integration and Intelligence Project (HSCDIIP). The purpose of this project is to link individual level longitudinal health and social care datasets for all Integration Authorities (Whalley, 2014). Their intention is to link health and social care data so that integrated local authorities are able to:

i. effectively and efficiently make better clinical and non-clinical decisions;
ii. have access to costs associated with care delivery;
iii. consider options using a robust evidence base;
iv. establish best practice
v. improve peoples' care outcomes
vi. standardise assessments and screenings
vii. streamline referrals and handoffs between care providers

There is no information about how well the project is working since it is not going to be implemented until 2015. As in Scotland, the Health and Social Care Information Centre (HSCIC) of England - sponsored by the Department of Health – is the national provider of information, data and ICT systems for commissioners, analysts and clinicians in health and social care (Whalley, 2014). It has access to copious amounts of health and social care data and an ICT system that could allow care providers to benefit from it. Instead health and local authorities do not have the system they need to support better care delivery, outcomes, and integrated care services. Wirral Council and STAR were frustrated because "health has a more advanced ICT system that gives health care providers access to peoples' care information" (Wirral, 2010). Clearly, this does not support efficient and effective health and social care integration with all care providers. Central government wants health and social care services to work together and has encouraged it since the 1950s and 60s (Priest, 2012). Integrated health systems are widely considered to provide superior performance in terms of quality and safety as a result of effective communication and standardised protocols, though these outcomes have not been fully demonstrated (Gillies et al., 2006; Suter et al., 2009). Because differences between health and social care still exist, the central government should encourage the NHS and the local authorities to work with the Health and Social Care Information Centre to ensure that every health and social care provider has access to a person's care information in order to make better decisions and minimise duplication.

A major focus by many of the local authorities is on older people and preventative care services. Older people account for the most hospital admissions. This places a lot of

pressure on the National Health Service (Triggle, 2011). For example, in England there were 7,480,930 older people admitted to hospital in 2009/10, and in 1999/2000 there were 4,771,650 older people admitted to hospital; hospital usage by older people has risen by nearly two thirds in the past 10 years (The Health and Social Care Information Centre, 2012). This is mainly due to a rise in emergency admissions to hospital by older people, delayed discharges from hospital and a lack of alignment between hospital and social care services (National Audit Office, 2013). As a result, significant changes are needed as to how health and local authorities currently operate. Improvements are achieved when care providers work together throughout the whole care process (Leurs et al., 2008). Doing so addresses an older person's care efficiently and effectively especially since they are most likely to have multiple chronic conditions such as arthritis, asthma, chronic respiratory conditions, diabetes, heart disease, and behavioral conditions such as mental illnesses and dementia (Meijboom et al., 2003; Christiansen and Roberts, 2005; Parekh et al., 2011). Since life expectancy and number of older people is increasing there will likely be more people affected by these conditions (Parekh et al., 2011). Since the evidence base underpinning joint and integrated working between health and local authority is still weak, there is an urgent need to develop high-quality large scale research studies that can evaluate joint and integrative working in a more robust manner (Cameron et al., 2012). "Improvements to health and social care system could be made if partnership working existed between the Council and its local NHS affiliates" (Wirral, 2010). The Council believes they can reduce older peoples' admission to hospital, or re-admission to hospital, if health and social care systems are integrated. Care coordination can help to improve older peoples' care outcome, and reduce the cost

of treating them, if effective elements of care coordination models are identified and implemented (Eldercare Workforce Alliance, 2014). A major push by Wirral Council to coordinate health and care services is through a preventative care service.

Since many care providers are involved in a person's care, it is important to streamline the care process so that unnecessary hospital usage and increased care costs are avoided (Blum, 2011). The management of a person's care varies between care providers and across local authorities, and this includes the form and operation of its network of suppliers.

Home care re-ablement is essential to the care continuum and helps narrow the existing gap between health and social care. Fostering a cross-functional model of care is important in the design of a comprehensive, integrated and cost-effective package of care (Department of Health, 2010; Department of Health, 2013; Social Care Institute for Excellence, 2013). Restructuring the current home care re-ablement process is important and should lead to a more efficient system, the appropriate use of resources, and the ability of care providers to be responsive to the changing needs of older adults.

5.2.3. Information and communications technology (ICT)

The current ICT system being used by Wirral Council is in need of updating and does not support the health and social care needs of older people in their area. The local NHS and Wirral Council have different ICT systems that pose many challenges. Because many older people have multiple chronic conditions that often require various providers to be involved, it is important to have equal access to a person's care record. Unlike the NHS Wirral's state-of-the-art technology system, Wirral council does not have a system that provides relevant health and social care data. It is possible to implement an information system but developing and implementing it is time-consuming, complex and costly (Suter et al., 2009) and the Council does not have a budget large enough to allow them to invest in this. A comprehensive view of a person's current and past health and social care record is a focus for many health and local authorities. Additionally, the rising number of medical errors, operational inefficiencies, escalating health care costs and care fragmentation are other issues that need immediate attention (Kuperman and Gibson, 2003; DePhillips, 2007). Information and communications technology (ICT) should be used to address any challenges between health and local authorities. Communication among care providers is a major part of information flow in health and social care, especially since older people tend to have complex care needs (Gurses and Xiao, 2006; Department of Health, 2013) but the Wirral Council's current ICT system does not adequately support the collaboration needed between themselves and health. Information and communications technology is used in health care to reduce failures in information exchange and communication (Chen et al., 2004; Mendonca et al., 2004; Gurses and Xiao, 2006). For health and local authorities to work together they must be able to

communicate with each other about a person's medical and care information. Traditionally, health information and communications technology adoption has been slow because the health and care sector is vastly different from others in terms of data sharing and benchmarking standards (Garrett et al., 2006), and because it spends about 50% less of its gross revenues in information and communications technology than most other sectors (Bates, 2002; Kaushal et al., 2005; DePhillips, 2007). Whilst technology is a tremendous opportunity for health and local authorities to improve workflow processes, documentation and patient care, it remains a major challenge because of the barriers such as cost, legal, time, fear and complexity (Kohn et al., 2000; Leape, 2000; Lawton and Parker, 2002; Jackson, 2003; Sage, 2003; Ash et al., 2004; Gans et al., 2005; Wakefield et al., 2005; Garrett et al., 2006). Technology can help to reform and improve these workflow processes.

A standardised information system that connects local authorities and the NHS should be implemented. An information system should improve care outcomes, enable better decision making during the care process, and streamline operational activities (de Vries and Huijsman, 2011). It would have an impact on the structure, organisational strategy, communication exchange, operational procedures, buyer-supplier relationships, and bargaining power (Clemmons and Row, 1991; Bowersox and Daugherty, 1995; Finley et al., 1997; Lewis and Talalayevsky, 1997). Whilst implementing the right technology for health and local authorities leads to many great benefits for care services, it continues to be met with resistance because of cost and possible disruptions to workflow and few examples exist in healthcare today (Bates, 2002; Suter et al., 2009; Schneider, 2013).

In Wirral, 30,000 people aged 65 and older reported in the 2001 Census that they were living with chronic disease (Wirral Clinical Commissioning Group, 2013; Center for Disease Control and Prevention, 2014). For Wirral, and all health and local authorities, using information and communications technology to understand better the extent of chronic diseases could improve preventative care practices and monitor the progress of public health prevention efforts. The Institute of Public Care (IPC) at Oxford Brookes University developed a guide for the Northwest Joint Improvement Partnership. The guide highlights the importance of health and social care integration and data exchange (North West Joint Improvement Partnership, 2010). The NHS and the Council have different organisational requirements, performance measures and governance arrangements" (Wirral, 2010). These differences should encourage health and council to invest in an ICT system that improves care delivery and outcomes.

An Enterprise Resource Planning (ERP) system demonstrated a marked increase in efficiency, reduction in data entry error, a decline in operational costs, and decreasing labor costs (Pan and Pokarel, 2007); an Enterprise Resource Planning system is a management information system that integrates and co-ordinates almost all functional areas in an organisation (Kholeif et al., 2008). There are other operational efficiencies gained in terms of procurement, inventory control and planning whilst eliminating duplication and manual processes. An Enterprise Resource Planning system promotes and enables continuous real-time improvements that can lead to a more efficient and effective care system (Sanja, 2013). It is becoming an essential component of future procurement strategies, providing a benchmark for hospitals worldwide. As

contemporary management methods continue to emerge throughout the health care industry (Aptel and Pourjalali, 2001; Pan and Pokharel, 2008), health and local authorities could improve partnership working between providers, reduce costs and improve care outcomes by adopting a well-developed information Enterprise Resource Planning system. Instead of using antiquated tools - such as spreadsheets - to log re-ablement activity data, health and local authorities could use Enterprise Resource Planning software to store all of its information in a single, reliable application. Enterprise Resource Planning reduces duplication, improves communication, insures quality, offers opportunities for efficiencies and improves value for money.

Communication failure among care providers is a frequently cited cause of preventable harm to patients and delayed hospital discharge (Leape et al., 1991; Donchin et al., 1995; Wilson et al., 1995; Bhasale, 1998; Chassin and Becher, 2002; Gurses and Xiao, 2006); in New York State home health is in crisis because of poor communication between doctors and case managers (Drange, 2012). Communication is cited as a root cause in nearly 70% of reported sentinel events – an unexpected occurrence involving death or serious physical or psychological injury, or the risk thereof - surpassing other commonly identified issues such as staff orientation and training, patient assessment and staffing (Joint Commission International, 2009; ECRI Institute, 2009). As a result, health and local authorities should use technology, such as Enterprise Resource Planning software - to eliminate or reduce communication issues. An Enterprise Resource Planning system promotes community-clinical partnerships and knowledge exchange within and across care organizations (Ptak and Schragenheim, 2003; Wedgwood, 2007; Foster et al., 2010;

Kazandjian and Lipitz-Snyderman, 2010). Implementing an Enterprise Resource Planning system gives providers of care, such as local authorities and the NHS, online access to a person's health and social care information; it reduces resource waste and improves appropriateness of care. Because a person's care involves numerous care providers, it is important to have easy-to-access up-to-date information so that decisions are made and shared in a timely manner; better joined-up health and social care information means better care for people (Whalley, 2014). Currently, a joined-up health and social care information system does not exist for health and social care services in Wirral. Since communication breakdowns could occur in various ways, e.g. patient discharge from hospital to home, effective communication and teamwork are crucial and could be improved by implementing a better communication process. In 2002, there was a major attempt by the Department of Health to get health care providers to share the same patient database. An e-health is implemented to support information exchange across organisational boundaries between healthcare providers (Eason and Waterson, 2013) but not for social care. This is a system geared only for health care providers and does not include local authorities. A shared database is known to be more successful when local systems develop it to serve particular pathways (Eason and Waterson, 2013). Introducing an electronic health and social care system requires integration and co-operation among care providers.

"Health Informatics" is often described as a new discipline but the desire for easier access to a person's health care information became a common pursuit by the medical

community in the 1960s and 1970s (Cesnik and Kidd, 2010). As Health Informatics has evolved so has its capabilities. An example of how it has advanced is called *Regional Health Information Systems* (rHIS). Examples of its implementation can be found worldwide. In Zambia the health management information systems unit is part of the Central Board of Health and thus plays a key role in health sector reform (Kleinau in Lippeveld et al., 2000). Clearly, multidisciplinary care providers should provide health information system design and direction. A health information system should be able to connect health care organisations in any region, such as hospitals, offices of general practitioners, pharmacies, rehabilitation centers, or organisations for home care (Haux, 2006). Using them improves the care delivery process by coordinating providers and sharing information about a person's care (Frimpong et al., 2013). They give care providers an interface whereby concern and expertise can be shared amongst each other. There are many benefits: standardised ordering, reduced medical errors, access to analyse clinical practice patterns and outcomes, and inter- and intra-organisational communication exchange between care providers (Committee on Patient Safety and Quality Improvement, 2012). The challenge for Wirral is that health and social care staff cannot share older peoples' care information easily. As a result, older people could have multiple assessments and care plans and sometimes do not know where to go for advice, guidance and support.

Information and communication technology tools minimise systemic failures and bottlenecks and are a competitive necessity in most industries (Corsi et al., 2003).

However, health and local authorities continue to miss this opportunity to transform health services by sharing information across large, complex supply networks. Technological developments in other industries such as retail and manufacturing have resulted in: increased productivity; better decision-making; reduced communication costs; integrated firms (de Vries and Huijsman, 2011). Compared with vulnerable and inefficient paper-based methods for documenting a person's care, health and local authorities could enhance the whole care system with a well-designed information and communications tool. Information and communication technology tools need to be used in order to make the health and social care system more fit for the future. Mobile phone apps, such as the NHS Direct symptom checker and the Met Office "Healthy Outlook" service, provide lifestyle and health advice (Ham et al., 2012). This app provides recorded voice calls for chronic obstructive pulmonary disease (COPD) patients when environmental conditions are forecast to exacerbate their health (Ham et al., 2012). Other apps can enable the capture of data and activities and vital signs, and the transmission of data to health and social care professionals (CSC Leading Edge Forum, 2010; Ham et al., 2012). Presenting this kind of information to health and local authorities, such as Wirral Council, should convince them, health and their voluntary sector to invest in and use an information and technology system to support a person's health and care treatment in a more efficient and effective way.

5.2.4. Standardising the referral to home care re-ablement and assessment form

The referral process records a person's medical and social care; an inappropriate referral contributes to delays in hospital discharges and hospital usage. Wirral STAR is an Intake

and Assessment Service which means they receive referrals to the service from a range of sources such as hospital and community care services. Importantly, "approximately 60% of the referrals council receives for re-ablement come from hospital" (Wirral, 2010). The referral to re-ablement is not a standardised, electronic application and it is fraught with and leads to many problems such as "unreadable due to poor handwriting; incomplete or inaccurate referral information, duplication, communication failure among the Council and the hospital" (Wirral, 2010). Appropriate intervention or preventative care service requires the Council and the hospital to have the same referral system so quick and accurate care assessments can be made. Clearly, a joined-up information and communications tool that improves their referral process would be a benefit to health and social care. It could create a more efficient and effective care service, yet tight budget constraints are a major roadblock for the Council. A standardised referral system for hospital, council and STAR should support faster discharges from hospital and reduce bed-blocking. This type of system may even reduce delayed hospital discharges because re-ablement planning could start before admission to hospital; discharge planning is a key part of the operational management of beds (NHS Institute for Innovation and Improvement, 2008). Clearly, the Council and STAR should target hospital in order to receive the best returns on their investment.

In the health care sector "standardisation is known to decrease the chance of errors because it limits the variety of methods in performing a task" (Davies and Tales, 2005). With a total population of 319,800 in Wirral (61,000 people aged 65 and over- in 2011

(Office for National Statistics, 2013), a consistent finding from discussions with the council is that home care re-ablement is rapidly growing and an electronic-health-information-exchange platform between health and council would help them to make more coordinated health and social care decisions (Department of Health, 2013). An electronic-health-information exchange platform is not a "one-size-fits-all" solution. If it is designed well, it reduces fragmentation by establishing consistent, compatible and usable standard processes that support providers across the care spectrum; in England 32% of bereaved people said hospitals did not work well with general practitioners (GPs) and other services (Department of Health, 2013). Clearly many people, and government, feel they [people] are receiving disjointed care and support.

Standardising the referral process to home care re-ablement for health and local authorities could bring efficiency and financial benefits to them; by the end of 2015/16, Wirral will have lost over 50% of the grant funding they receive from the UK government (Mantgani, 2014). It takes organisers approximately 20-30 minutes per home visit to copy a person's information. Note, organisers cost STAR £17 per hour so it costs STAR £8.50 for 30 minutes, which is approximately the time it takes for organisers to copy patient information. Furthermore, there could be other shortcomings associated with a paper-based approach such as the "financial expense associated with copying care information, transporting and storing paperwork, easy to destroy or lose paperwork, difficulty with reading paperwork and determining who has seen it, and the negative impact on the environment" (Wirral, 2010; Hoyt, 2014). One care assessment and one

care plan should save the Council and STAR, and other local authorities, time and money. Currently, referrals are missing important pieces of information because it is not a complete history of a person's health and social care. For example, referrals from occupational therapists based in hospital do not include a person's social care history and care management referrals only capture social care (Wirral, 2010). A person's care plan is based on information provided to council and STAR that should include information based on a persons: health care; social care; psychological; finances; and environment. Standardising the referral paperwork between hospital and council should produce a quick win for them in terms of unblocking hospital beds and shorter lead times and queues. A more holistic approach of the home care re-ablement referral and assessment process is necessary especially since the number of older people is expected to rise between now and 2032; from 2012 to 2032 the populations of 65-84 year olds and the over 85s are set to increase by 39% and 106% respectively whereas 0-14 and 15-64 year olds are set to increase by 11% and 7% respectively (The King's Fund, 2012). Given the future trends in population growth, the demand for health and social care services is also expected to rise.

For re-ablement care in Wirral, there is no single point of access and anyone can refer a person to the re-ablement service. For STAR, a paper-based system is a weakness because they are unorganised and often lose sight of what is coming in and going out (Wirral, 2010). A key mechanism for improving links between health and local authorities could be a single point of access for referrals to home care re-ablement

especially since the care process involves many care professionals, such as therapists, nurses, social workers etc. Chapter 7 discusses how one local council is using a systems approach to do this.

5.2.5. Logistics planning and control

Logistics is defined as "the organization, movement and storage of material and people" (Ghiani et al., 2004). It is important that people do not lose care support when moving from one service to another, e.g. moving from hospital to home (Department of Health, 2013); Wirral received "a total of 2,470 referrals for home care re-ablement in 2009/10 but was unable to provide it to 428 people because it did not have enough capacity to match demand" (Wirral, 2010). Making sure this does not happen is a major challenge for health and local authorities because, unlike other industries whereby tangible assets can be directly measured, the health and social care industry is not as easily measureable, e.g. reductions in health risks (VanVactor, 2012); being able to measure how well health and social care are doing could lead to improvements and investment in preventative care services such as home care re-ablement. Since the overall focus of this research is to improve the effectiveness and efficiency of re-ablement, a new way for local authorities to deliver care to those in its catchment area is needed because there is currently an increasing amount of pressure on councils to improve their re-ablement services; too often there is insufficient use of worker time, or not enough staff, to deal with multiple assessments, traveling time and duplication (Wirral, 2010). The nature of the home care re-ablement market makes it very hard for council and STAR to forecast levels of

demand. To manage the market more efficiently and effectively so that people can recieve re-ablement care requires capacity planning; if there is a balance between capacity and demand then the operation can satisfy its clients and be cost-effective (Slack et al., 2007). Thus the overall logistics of getting the treatment services to the patient can be seen to have a large and growing impact on the quality and effectiveness of the care provided (Bamford et al., 2009). Logistics planning and control is a major challenge for STAR and council because of the disjointed nature of the referral process and its turnaround time, e.g. service-delivery time (Wirral, 2010).

"A major challenge is logistics planning and control" (Wirral, 2010). The key issues are finding ways to utilise their care staff during quiet periods and providing efficient and effective care to service users during busy periods, especially during the winter period when demand for re-ablement care is highest. For example, "between January and March 2010, the demand for re-ablement care increased to 71 referrals from hospital compared with 54 referrals between June and August 2009" (Wirral, 2010). In England, emergency medical admissions to hospitals have risen substantially in recent years, especially during the winter period (Kendrick, 1996; Fullerton and Crawford, 1999). Between 2001-02 and 2012-13, the average occupancy rate of general and acute hospital beds across England increased from 85% to 88%. Over the winter months – between January and March 2013 – bed occupancy rates averaged 89.7%, with over one-fifth of trusts reporting rates over 95% (National Audit Office, 2013); ill health and death rates increase in the older population during cold weather (AgeUK, 2014). Furthermore, commissioners have not

provided additional funding to support winter pressures in a timely manner in order to allow trusts to plan ahead (National Audit Office, 2013). Without additional funding it is very difficult for local authorities, such as Wirral, to support the additional workload that is placed on them by hospital and other health care services during the winter months. It has been a problem for STAR to meet the peak winter requirements because the existing capacities do not support such a spurt in demand. The challenges faced by Wirral are ones shared by many local authorities and care organisations (Knowsley, 2010; Liverpool, 2011; St. Peters Health Partners, 2014). Health and social care services and peoples' care may continue to be affected until it is addressed, especially since many people have interlinked health and social care demands. To meet the ever-growing, and increasingly complex demands placed on councils a comprehensive understanding of their logistics is needed to make improvements. Clients increasingly expect suppliers and distributors to provide real-time information about their orders, the location of the product as it moves through the logistics and transportation network, and accurate just-in-time delivery commitments (Archer et al., 2008). In the rationing of resources, councils are encouraged to focus on logistics planning and control as a way to meet the changing needs of people and care services.

Wirral has made logistical improvements to its re-ablement service by geographically distributing locality teams throughout its community but there are still concerns, e.g. "not enough staff to care for older people and transportation problems makes it difficult for carers to get to older peoples' homes" (Wirral, 2010); in some areas of Wirral more than

half of households do not have access to a car, which means they are reliant on public transport. Many carers travel to older peoples' homes by public transport. "Public transport is a challenge for carers especially in rural areas" (Wirral, 2010). This is a problem because it could lead to older people going to hospital or readmitted back to hospital; re-ablement works on discharge and prevention. It remains a challenge to provide a cost effective Wirral-wide re-ablement service with one third of its staff traveling by public transport (Wirral Council, 2010). When an organisation is not able to provide the service itself then it needs to purchase service capacity from other providers to complete or buffer the service (Liu and Xie, 2012).

"Wirral Department of Adult Social Services is undergoing changes to its re-ablement service that should make us more efficient" (Wirral, 2010). For example, a major challenge was the amount of time it took for a care provider to travel to a person's home; the borough of Wirral is both rural and urban with the highest proportion of people aged 75 and older located in the suburban areas of Heswall and Hoylake and Meols. To deal with this, they designed a plan whereby "access teams, known as Short Term Assessment and Re-ablement (STAR) teams, were located in each locality and hospital: Birkenhead, Wallasey, Bebington/West Wirral, and Arrowe Park Hospital" (Wirral, 2010); STAR is an in-house re-ablement service funded by Wirral Council. A comprehensive, logistics management plan is best designed when a synthesis of available information from multiple stakeholders' perspectives are collected (VanVactor, 2012). Placing access teams in each locality helps STAR to be more organised and prepared to take referrals

from the community; the demand for home care has increased in recent years and it is projected to grow. Wirral has a relatively high older population and a relatively low proportion of people in their twenties and thirties compared to England as a whole. Wirral is forecast to see a 17.4% rise in those aged 65 and over and a 29.9% increase in those aged 85 and older from 2011 to 2021 (Wirral Joint Strategic Needs Assessment, 2012), bringing increasing pressure on the health and social care system. Wirral and other local authorities have major changes to make in order to deal with very large increases in demand for and costs to adult social care; social care and its funding are already in crisis and this will become worse as demand markedly increases (Select Committee on Public Service and Demographic Change, 2013). At a staff consultation in January 2010, it was agreed that a number of options should be taken forward to improve its efficiency:

i. Use of taxis for non-drivers though may be expensive
ii. Partnering-up drivers and non-drivers
iii. More productive use of unplanned downtime by training enabler staff to meet wider departmental agendas, e.g. health promotion, personal planning, low-level sign posting, assessing for small aids and adaptations.

What is needed for Wirral is better logistics planning. The purpose of logistics planning is to systematically manage their transportation networks in a timely manner and match their capability and capacity to the demand. Managing transportation networks and capability and capacity planning are major components of most organisations (Berman and Wang, 2006); including health and local authorities. It affects how Wirral operates

their re-ablement service especially since teams are split across three localities. Local authorities have an increasingly important role in providing care services to people at home since staff from the council spend more time with the individual than the general practitioner; care planning should involve health and local authorities. The goal of Wirral, and other local authorities, is to improve their readiness through reliability, maintainability and supportability of care for older people. Planning capacity and capability involves several dimensions: financial investment in existing facilities and new developments, investment in expensive equipment and technology (such as assistive technology and web-based intranet system), service delivery, and allocation of human and financial resources (Ettelt et al., 2007). These dimensions are likely to have an impact on the process of planning and organising home care re-ablement especially since many health and local authorities are disjointed in terms of funding streams and operating framework.

5.3. Summary

A case study analysis of Wirral Council along with a comprehensive literature review helped to identify barriers to efficient and effective home care re-ablement:

i. academic evidence;
ii. integrated health services supply network;
iii. information and communications technology;
iv. referral process; and
v. logistics planning and control.

Table 4: Summary of Wirral's barriers to efficient and effective home care re-ablement

Barrier	**Underlying causes**	**Solutions**
Academic evidence	No working relationship between practitioners and academics	Using practice-based concepts such as partnership, e.g. establishing research networks that include practitioners and academics
Integrated care	Disjointed relationship between health and social care, disparate funding stream, different IT system, no standard definition of re-ablement (confusion)	Integrated health and social care IT system One pooled budget Preventative care service that is based in hospital Multidisciplinary team of health and social care staff
Information and communications (ICT) technology	Disparate ICT systems between NHS, council and voluntary sector	Health and social care information exchange system
Referral process and assessment form	Referrals are received from all sources (hospital, intake, person) and the form is not standardised	A single point of access for all referrals Timely, holistic clinical assessment of need
Logistics planning and control	Lack of resource capacity such as carers causes poor response time, service delivery problems and delays in hospital discharge	Logistics planning system Buffer the service by subcontracting carers or offer overtime to balance demand fluctuations

Table 4 summarises the barriers to efficient and effective home care re-ablement experienced by Wirral. Each barrier affects the Council's and STAR's home care re-ablement delivery process, access to care and carers, and older peoples' care outcomes. The home care re-ablement process is faced with multiple, complex processes that council and STAR use to accomplish their tasks. Many researchers have been using operations research/management science methods to solve problems in health care domains (Exadaktylos et al., 2008). Identifying any bottlenecks in the home care re-

ablement system and solving them by using ideas and concepts grounded in operations research/ management science would be helpful to the health and social care system. Clearly, there is growing awareness by the Council and STAR of the need to ensure viability and effectiveness of their re-ablement service.

Using expertise coupled with evidence-based practice from industries such as manufacturing and retail could be an invaluable source to local authorities (Aronsson et al., 2011). Health and local authorities need to work together with professional associations and academic institutions to achieve better care outcomes. The impetus for evidence-based practice comes from budget constraints, disjointed health and social care, and admission to hospital and re-admission to hospital. What is needed is more practice-relevant research and closer-working relationships between researchers and practitioners. Evidence-based practice provides opportunities for health and local authorities to be more streamlined, efficient and effective.

Older people should have access to home care re-ablement yet they and local authorities continue to face substantial barriers that limit access to care services. Re-ablement is unsustainable based on the barriers discussed. Because we know what the barriers are, there is a way to improve the system's operating effectiveness. This can improve care outcomes whilst achieving greater financial value and operational efficiencies. Having a better understanding of the barriers affecting health and local authorities, and older

peoples' care, highlights the need to improve it by using a whole-systems approach and supply chain management. This is presented in Chapter 6.

Chapter 6: Home Care Re-ablement Supply Chain Management

Local authorities must rethink how their home care re-ablement services are organised and managed. Local authorities rely on multiple, complex processes to deliver re-ablement to older people in their communities, identifying ways to streamline the process flows and reduce delay times by eliminating waste and non-value adding activities is essential. In order to acquire a better understanding of how to achieve this, the application of a supply chain management approach, commonly associated with manufacturing, is proposed as a management strategy to deliver re-ablement more efficiently and effectively.

6.1. Introduction

The evidence base for the health and cost benefits of home care re-ablement is limited; yet, it appears that the Department of Health views it as a cost-effective route to better care outcomes, since it announced a £70 million investment to the NHS for re-ablement (Department of Health, 2010). In addition to this, the government spending review in 2010 and 2011/12 NHS Operating Framework has committed more funding to primary care trusts (PCTs) for the financial years 2011/12 and 2012/13 in order "to develop local re-ablement services, in partnership with councils, in the context of post-discharge support plans" (Department of Health, 2010; Francis et al., 2011). By allocating more money to primary care trusts for home care re-ablement services, the central government is looking to achieve better care outcomes by integrating health and social care

(Department of Health, 2010). Health and social care integration has been the goal of the central government for years (Wanless, 2006; Law Commission, 2011; Cornwell et al., 2012; Ham et al., 2012) yet little progress has been made because "the implications of such a profound shift in the way care is commissioned and regulated have not always been thought through" (Ham et al., 2012); applying supply chain management theory to provide insight into the most appropriate way to manage this area is important. This suggests that supply chain management theory can be applied to social care services, such as home care re-ablement, to effectively and efficiently manage re-ablement activities and reduce waste in money, people, materials and time. "The objective of supply chain management is to meet the requirements of end clients by supplying appropriate products and services when they are needed, at a competitive cost" (Slack et al., 2007:403). This chapter focuses on a supply chain management approach for home care re-ablement.

6.2. How does supply chain management apply to home care re-ablement?

Supply chain management is not a researched area by local authorities yet it is an area that has been explored by many hospitals worldwide. Evidence suggests that the health care industry benefits financially and non-financially from supply chain management (Institute for Healthcare Improvement, 2005; Jimmerson et al., 2005; Spear, 2005; Kim et al., 2006). To determine if the magnitude of success experienced within health care can also be achieved in the social care sector, then local authorities should learn about and consider applying supply chain management in order to improve their home care re-ablement service. A carefully managed home care re-ablement supply chain management

approach could lead to many rewards in terms of efficiency, economies of scale, accessibility, uncertainty, improved logistics and better lead times. A supply chain management approach for Wirral's home care re-ablement service could improve their complex work processes by "reducing duplication, delays to service and capacity versus demand problem" (Wirral, 2010).

For local authorities, a supply chain management approach could offer them substantial opportunity for realistic process improvements in core support processes, and care outcomes (Zimmerman and Gallagher, 2010). A home care re-ablement supply chain involves health and social care providers such as occupational therapists, nurses and hospital discharge support teams. Although supply chain management is still a novel idea to those in the health and social care sector (Wirral, 2010; Knowsley, 2011), a major benefit of applying supply chain management to home care re-ablement is that it allows health and social care providers to communicate with each other whilst having access to a shared central database (Calderdale Council, 2010). Clearly, this approach would reduce or eliminate how health and local authorities currently communicate: fax, phone, or by a hand-written document. Wirral Council uses the SWIFT system. "SWIFT is a database that records client information, including service usage data" (Wirral, 2010). However, SWIFT is not used by Arrowe Park Hospital so council and hospital do not share peoples' health and social care data electronically. Managers in Wirral, Knowsley and Liverpool discussed the need to change how they communicate with other care organisations. A person's care information is spread across multiple disparate systems. This could lead to hospital usage and delays in hospital discharge because information is

not quickly available to care providers. The goal of a supply chain management approach for local authorities is to coordinate information and supplier networks more efficiently and accurately to deliver better care in the community.

The adult social care system is shifting from a hierarchical, in-house supply chain to a fragmented network built of strategic partnerships with external suppliers. As a result, the push for an integrated and synchronised system to strengthen operational activities is essential for this particular sector. Table 5 identifies key policies, documents and changes to legislation that has contributed to the agenda of integrated care. Integrated care and support is the theme of each document.

Table 5: Key policies and documents of integrated care (1997-2014)

Year	Policies and documents
1997	*The New NHS: Modern, Dependable* *Social Services Achievements and Challenges*
1999	*The Health Act* *National Service Frameworks (NSFs)*
2000	*The NHS Plan*
2001	*NHS Local Improvement Finance Trust Scheme* *Valuing People: A New Strategy for Learning Disability for the 21st Century*
2002	*Wanless Review*
2004	*Department of Health: Extra Care Housing Fund*
2004/05	*Local Area Agreement Pilots*
2005	*Independence, well-being and choice*
2006	*Our Health, Our Care, Our Say* *Strong and Prosperous Communities* *National Health Service Act*
2007	*Putting People First* *Commissioning Framework for Health and Well-being* *Mental Health Act*
2008	*High Quality Care for All* *Health and Social Care Bill* *World Class Commissioning*
2009	*Dementia Strategy* *Transforming Community Services* *Integrated Care Pilots* *Valuing People Now*

2010	*Equity and Excellence: Liberating the NHS* *Removing the policy barriers to integrated care in England*
2011	*The Health and Social Care Bill*
2012	*Improving health and care: the role of the outcomes framework*
2013	*Adult Social Care Outcomes Framework 2012 to 2013* *Integrated Care and Support: Our Shared Commitment*
2014	*Enabling integrated care in the NHS*

Table 5 is an example of how the central government is increasingly concerned with the working relationship between health and local authorities (Weiner et al., 2003). In England, "Integrated Care and Support: Our Shared Commitment" is an example of the many documents describing the current health and social care system. "The NHS Plan" and the "National Service Frameworks" (NSFs) also include many proposals, especially integrated care and support. Many of the documents mentioned in Table 5 relate to one another because each document identifies the need for integrated care, or person-centred coordinated care, and the positive impact it could have on health and social care services and patients/service users. A reoccurring theme is integrated care and support and what it looks like; integrated care also means person-centred coordinated care (National Collaboration for Integrated Care and Support, 2013). The problem of integrated care services is the need for a common definition, which is one of the major barriers to efficient and effective home care re-ablement. This leads to:

i. confusion;
ii. duplication and gaps in service delivery;
iii. delays in hospital discharges; and
iv. getting lost in the system (Monitor, 2014).

A major effort is being made by Monitor, regulator for health services in England, to promote and encourage integrated care and support by establishing a group called Integrated Care and Support Collaborative. This group is comprised of:

i. Association of Directors of Adult Social Services (ADASS)
ii. Association of Directors of Children's Services (ADCS)
iii. Department of Health
iv. Local Government Association (LGA)
v. NHS England
vi. NHS Improving Quality
vii. Public Health England
viii. Social Care Institute For Excellence (SCIE)
ix. Think Local Act Personal (TLAP)

The collective aim of the Integrated Care and Support Collaborative is to help ensure better outcomes for patients and service users and the care system by creating the conditions nationally for person-centred coordinated care to flourish locally (Monitor, 2014). This is another major push by central government to integrate health and social care services. What is not addressed, however, is the interrelatedness of integrated care and support and a supply chain management approach. This research facilitates a shared understanding between health, local authorities and supply-chain managers and researchers. A supply chain management approach may help to manage any activity that takes place within the supply chain. This is because any activity within the supply chain may affect costs due to interrelatedness of the different actors within the chain (Bourlakis et al., 2011). A supply chain management approach for health and social care services

may efficiently and effectively improve the overall care system and achieve national and local care goals and outcomes. The NHS, the local authorities and home care re-ablement services should all be involved in the planning and design of interventions and preventative care services.

6.3. Applying supply chain management

Health and social care providers should see a person's care as one whole continuum that begins from home, or hospital, and continues back to the home. A person's care involves many supply chain activities and decisions that need to be carefully coordinated; poor coordination among the chain members causes dysfunctional operational performance, higher inventory costs, longer delivery times, higher transportation costs and lowered client service (Lee, 2000; Simatupang et al., 2002; Bourlakis et al., 2011; Davies et al., 2011). Adopting a supply chain management approach to reduce costs and any unnecessary process steps by identifying inefficiencies and reducing waste is needed (Davies and Drake, 2007); home care re-ablement delivery rests much on the availability of products and transactions between providers. If local authorities created value across their supply chain then they could strengthen operational activities and decision-making structures; data-sharing collaboration; performance measures; and care-provider integration.

Local authorities need additional financial resources and support for re-ablement but these additional resources must be accompanied by reforms in order to improve

efficiency and effectiveness. Although money for home care re-ablement is not ring-fenced and is routed through NHS England the Department of Health stipulates that the money must be used to support adult social care services, which also have a health benefit (Social Care Institute for Excellence, 2013). Legislation is needed to ring-fence NHS contributions to home care re-ablement services at national and local levels, to give NHS England powers to assure local plans and performance, and to ensure that local authorities not party to the pooled budget can benefit from it (NHS England Planning Guidance, 2013). If operational inefficiencies continue to go unresolved, along with unnecessary waste and increasing costs, then "there is a real risk that access to care will have to be restricted" (Smulian, 2012). This is a well-known problem faced by local authorities and policy makers yet they need to focus reforms by changing structures and processes. In particular, the Wirral case study shows how a supply chain management approach could streamline home care re-ablement processes.

6.4. Summary

As local authorities continue to search for process-improvement opportunities, they should look to other industries such as the health care sector. Several case studies from the health care field have been used to support a supply chain management approach for Wirral's home care re-ablement service. A supply chain management approach may generate value for the whole health and social care system with a major focus on integrated care and support, and preventative care services.

Chapter 7: The Wirral Case Study

This chapter presents a case study of Wirral Council and how they can use the Supply-Chain Operations Reference (SCOR) model as a diagnostic tool. SCOR provides a standard description of supply chain processes, performance metrics, best practice and enabling technologies. Adopting business best practices that fit local authorities' circumstances and using a tool such as the SCOR model can help improve the effectiveness of the supply chain. Since the SCOR model provides a common language for communication among supply chain members the SCOR model is going to be recommended to Wirral Council Department of Adult Social Services to improve the effectiveness and efficacy of their home care re-ablement service.

7.1. Background: Wirral STAR

The Wirral Short Term Assessment and Re-ablement (STAR) teams are funded by Wirral Council. The Department of Adult Social Services (DASS) is responsible for the development and management of the teams. DASS, and the STAR teams, are responsible for assessing and commissioning packages of care for people.

Wirral operates a STAR team in each of three districts: Birkenhead, Wallasey and Bebington/West Wirral, in addition to a team based within Arrowe Park Hospital since the majority of the referrals submitted are from the hospital discharge team. Wirral receives approximately 40 referrals for care per week and these are mostly for people

aged 65 and older. Of those referrals, approximately 30 or three-quarters are assessed as being criteria to receive home care re-ablement.

Hospital discharge referrals are faxed in by hospital occupational therapists (OTs) and placed into the allocation tray. Each referral is then reviewed by Wirral STAR's organisers, who make a note on the white board in the main office of who the patient is and when their re-ablement is due to start. A Senior Enabler completes a log sheet for the client and the client's data is then electronically entered into their SWIFT system. SWIFT has a database that records client information, including service usage data (Wirral, 2010). Unlike hospital discharge referrals, case management referrals originate from the brokerage department. Clients referred to re-ablement from care management are usually in the SWIFT system. Case management referrals are much easier to complete, versus hospital discharge referrals, as the client's file is already available electronically, which in turn, saves Senior Enablers time.

Organisers meet and split up visits with new clients based on an organiser's work schedule. An organiser will visit each person at the start of the their re-ablement in order to assess the level of care the client needs, and to introduce the home care re-ablement service to the client. An organiser must visit the client at home as soon as s/he is discharged from hospital in order to prevent accidents, which could lead to emergency re-admission. Whilst an organiser is visiting a client's home, the organiser observes the client's home for potential hazards and suggests tools and equipment to make improvements to it. An OT usually accompanies the organiser on the introductory visit

in order to develop an appropriate care plan based on the client's care needs and preferences. The organiser makes notes of the client's needs and agreed arrangements in a binder. Copies of the notes are left with the client.

The organiser returns to the office and completes a log of the visit in the client's folder. Once this is complete, the client's name is moved from the "admissions" white board to the "current patients" white board. A visual white board is posted in the main office for everyone on the STAR team to see and it is continually updated. This is important as things change quickly within the home care re-ablement service. Organisers then assign an enabler to a client. Enablers are split into teams of five, with each member of the team responsible for a different programme of hours, so that it is easy to cover bank holidays and sickness. They are paid based on a five-week rotation, which assumes that twenty-five hours per week are worked. The reason for this was largely because of Wirral's budget constraints. Some weeks they are working full-time hours and other weeks they will be working as "floaters" who can cover for other members of staff. The purpose of this rotation schedule is to enable Wirral STAR to cope with fluctuations in supply and demand whilst keeping the service in-house whereby the entire home care re-ablement service, e.g. assessing, commissioning, providing re-ablement to people, is managed by the Council. Keeping re-ablement care in-house is usually more expensive than outsourcing mainly because in-house re-ablement care staff are entitled to generous work packages as they work for the Council. In Wirral, the average carer cost in relation to contact time is £38.50 per hour compared with Kent Council where the average cost in relation to contact time is £14.76 per hour (Kent, 2010; Wirral, 2010); Kent Council

outsources its re-ablement service to independent providers but the management of re-ablement is kept in-house for planning and control purposes (Kent, 2010).

Wirral Council is considering changing its re-ablement model. Wirral provided documentation that outlines a different approach as to how they will manage their re-ablement service. The new service model will see the front-line re-ablement part of the service provided through an independent sector provider supported by an innovative service partnership whereby the council will provide the assessment and quality control of the service; outsourcing. Figure 1 is the new service model, which is referred to as "the collaborative model for service provision" (Wirral, 2010).

Figure 1: Wirral: The collaborative model for service provision

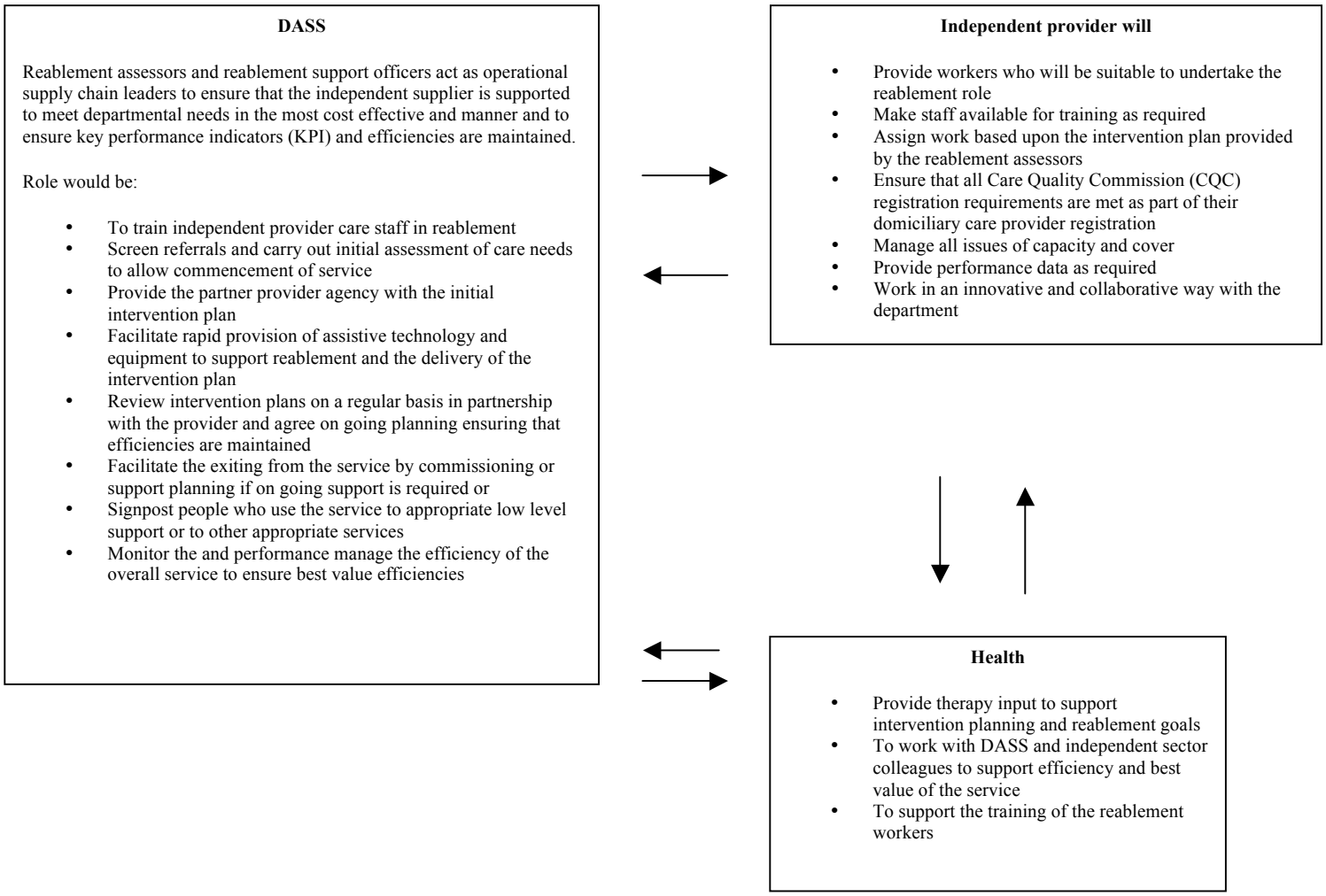


Figure 1 shows the role and responsibility of the Council, hospital and independent care provider. The council element of the STAR service in collaboration with health partners is going to assess and prioritise referrals suitable for the assessment and re-ablement service. The Council is also going to be responsible for commissioning a person's re-ablement package of care. Clearly, Wirral is going to keep management in-house yet is looking to outsource the home care part of the service in order to save money and increase capacity.

A log of each team and the hours worked are kept in a binder. Organisers review the binder when a new client is admitted to the service. Organisers assigns a team to cover the client's care plan. Before organisers assign an enabler to a client, organsiers must consider the following to ensure positive care outcomes are achieved:

i. Trade unions- some members of staff are part of a work/life balance scheme which means they cannot start work until 9am. These enablers cannot be assigned to clients who need help getting out of bed before 9am;
ii. Continuity- clients should be visited by as few people as possible, e.g. organiser, enablers and OTs;
iii. Male enablers are very limited as to who they can work with since female clients are assigned to female enablers;
iv. Split shifts- some enablers split their work schedule for family reasons. This means they work for two hours in the morning and four hours in the evening;

v. Transport- enablers need to arrive in a timely manner to a client's home and as easily as possible (Wirral, 2010).

Organisers are skilled at assigning enablers since they are familiar with each enabler's personal circumstances. This is an inherent skill that is not about knowledge but about understanding. Experience in the area of home care re-ablement is an important skill-set for Organisers. Clearly, assigning enablers to patients would be difficult without experienced organisers.

Following the six-week period of re-ablement, the client is re-assessed by an organiser to determine whether they can remain at home independently, need an ongoing package of care, other intermediate care service, or long term care. Currently, "around 65% of clients complete their care plan and require a reduced level of care or do not require an ongoing package of care" (Wirral, 2010). "If the client requires on ongoing package of care then it is outsourced to a local home care provider" (Wirral, 2010). The other 35% of clients: inappropriate referrals hence referred on to other services; declined re-ablement service; inappropriate and unsafe hospital discharge; or client was denied re-ablement service due to capacity issue. It is evident that there are different models of re-ablement and research into what works and how this can be applied at a local level is needed (Kent, 2000; Knowsley, 2010; Francis et al., 2011). In particular, there is an opportunity here for research and practice to work together looking at both an integrative working and outcomes measurement, for the area of home care re-ablement.

A person's care plan involves clinicians and non-clinicians (Bryan et al., 2006). In view of this, local authorities need to organise their re-ablement delivery system to work across providers and care settings. Implementing a total system approach would target bottlenecks, and identify and eliminate waste and duplication (Young et al., 2004); fragmentation fosters frustrating and dangerous client experiences and affects the providers' ability to deliver high-quality, efficient care. Greater organisation is critical to responding and managing bottlenecks faced by Wirral and to streamline its operational processes: planning; implementing and controlling operational activity; and attaining a sustainable competitive advantage against other local authorities since local authorities compete for funding. A competitive market offers greater choice for clients and encourages new and innovative ways of delivering integrated care and support. Local authorities can gain a competitive advantage based on the services they provide and the price of their service. Local authorities can also gain a competitive advantage based on the skill and expertise of independent care providers.

Wirral provided documentation that was then examined to identify how efficiencies could be gained by applying a supply chain management approach. Based on the language used throughout their document, links can be made within common supply-chain terminology and practice to improve the cost and quality of the service, as shown in Table 6.

Table 6: Inefficiencies and supply chain management countermeasures for Wirral

Inefficiencies and Current Issues	SCM Countermeasures
Processing/duplicate: Multiple forms or software screens.	Standardising and digitising the referral process eliminates duplication and reduces paperwork and lead times.
Assessment form	Information technology for data sharing and integration care packages.
Roles and responsibilities between hospital and LA are not clearly defined. This leads to longer service wait-times and delay in hospital discharge.	Supplier partnership and alliance: the longer the relationship, the more the indirect operational costs, and otherwise, are reduced (Fredendall & Hill, 2001). Cross-functional team: a group of individuals from various departments working toward a common goal; re-abling the service-user (Fredendall & Hill, 2001).
Capacity versus capability	Logistics and inventory management Collaborative planning, forecasting and replenishment (CPFR) approach for overall efficiency. Outsourcing
Lack of training/education/skills and knowledge.	Understanding supply chain networks and best practices improves performance outcomes (McKone-Sweet et al., 2005).
Unclear link to organisational strategy No performance metrics	Standard performance measures are needed.
DASS is responsible for assessing and commissioning re-ablement.	Vendor managed inventory (VMI)

Table 6 lists inefficiencies within Wirral. Once inefficiencies are identified they are cross-correlated with established supply chain management techniques. Based on Table 6 supply chain management theory is, indeed, relevant to home care re-ablement. The most pressing research need is for Wirral to actually implement the supply chain management techniques described in Table 6. "The ultimate goal in supply chain

management is to create value for the services and products provided to end clients, which will benefit the firms in the supply chain network" (Wisner et al., 2012). The supply chain management solutions mentioned in Table 6 could address some of the issues facing STAR. If not then Wirral's home care service may continue to produce suboptimal care outcomes and, ultimately, go out-of-business because of costs and supply-demand issues. Since Table 6 analyses some of the gaps and inefficiencies affecting Wirral's home care re-ablement service, the Supply Chain Operations Reference (SCOR) model could be used as a process reference for making improvements to the service.

7.2. The future of Wirral's home care re-ablement and the SCOR model

The supply-chain operations reference (SCOR) model is a framework that links supply chain processes, metrics, best practices, performance metrics and technology features into a unified structure to support communication among supply chain partners and to improve the effectiveness of supply chain management and related supply chain improvement initiatives (Supply-Chain Council, 2010). SCOR offers a comprehensive methodology to improve supply chain operations and is widely acknowledged as the quasi-industry standard for supply chain management (Georgise et al., 2012). The purpose of SCOR is to improve an organisation's efficiency and efficacy, and to provide a process-based approach for supply chain management (Lockamy and McCormack, 2004). The achievement of an effective supply chain operation depends on the seamless collaboration of distributors, manufacturers and suppliers and how they are integrated across organisations (Wang et al., 2010). Since SCOR provides a standard description of

supply chain processes (Wang et al., 2010), Wirral could adopt it to support their home care re-ablement service. The SCOR model can enable and promote collaboration as the inconsistency between members of a supply chain can be solved through the standardised reference model, and therefore the cycle time of product development could be decreased (Wang et al., 2010). The SCOR model should be introduced to Wirral and other local authorities to help them analyse their supply chain and to identify supply chain problems. The SCOR model enables full leverage of capital investment, creation of a supply chain roadmap, alignment of business functions and can yield an average of two to six times the return on investment (Bauhof, 2004; Hudson, 2004). Unlike the manufacturing industry, the SCOR-model has never been applied to the social care sector. There are many challenges associated with Wirral's home care re-ablement service, such as the terminology used for re-ablement has varied across health and care services and local authorities lack standardised performance metrics in order to assess the effectiveness of re-ablement. Service outcomes such as "care hours required at the end of service" are a common measure of the success of re-ablement and are intended to illustrate the extent to which a person has gained independence (Social Care Institute for Excellence, 2013). However, "successful re-ablement" looks different from one person to the next so the focus needs to shift towards financial performance (Social Care Institute for Excellence, 2013). However, many councils are unwilling to share detailed financial and performance information because they now operate, to varying extents, competitively (Pilkington, 2008; Genet et al., 2011). As problems compound, a more holistic (or systemic) approach to Wirral's home care re-ablement service is needed to improve how

it functions across their supply chain partners. In other words, SCOR could be used as a guide to help Wirral learn about their most pressing supply chain issues and processes.

The SCOR model is a valuable supply chain management tool for local authorities because it focuses on supply-chain operational and design issues, and describes business processes required to meet a client's demands. The purpose of SCOR is to reduce waste, communicate decisions, and identify opportunities for process improvements (Huang et al., 2005; Malin, 2006; Zhou et al., 2011). The SCOR model allows senior managers to simplify the complexity of their supply chain (Huan et al., 2004). There is strong evidence to support how the SCOR model achieves an organised supply chain network (Kasi, 2005; Malin, 2006; Naslund and Williamson, 2010).

Local authorities could adopt the SCOR model in practice in order to improve their supply chain. The purpose of the SCOR model is to understand, analyse, and solve problems. SCOR is used here to capture the Wirral supply chain and to suggest a framework that could help it to make improvements to its supply chain. SCOR model allows local authorities to identify problems that are often overlooked yet could have a positive impact on their service delivery and care outcomes, whilst generating efficiencies across the whole chain.

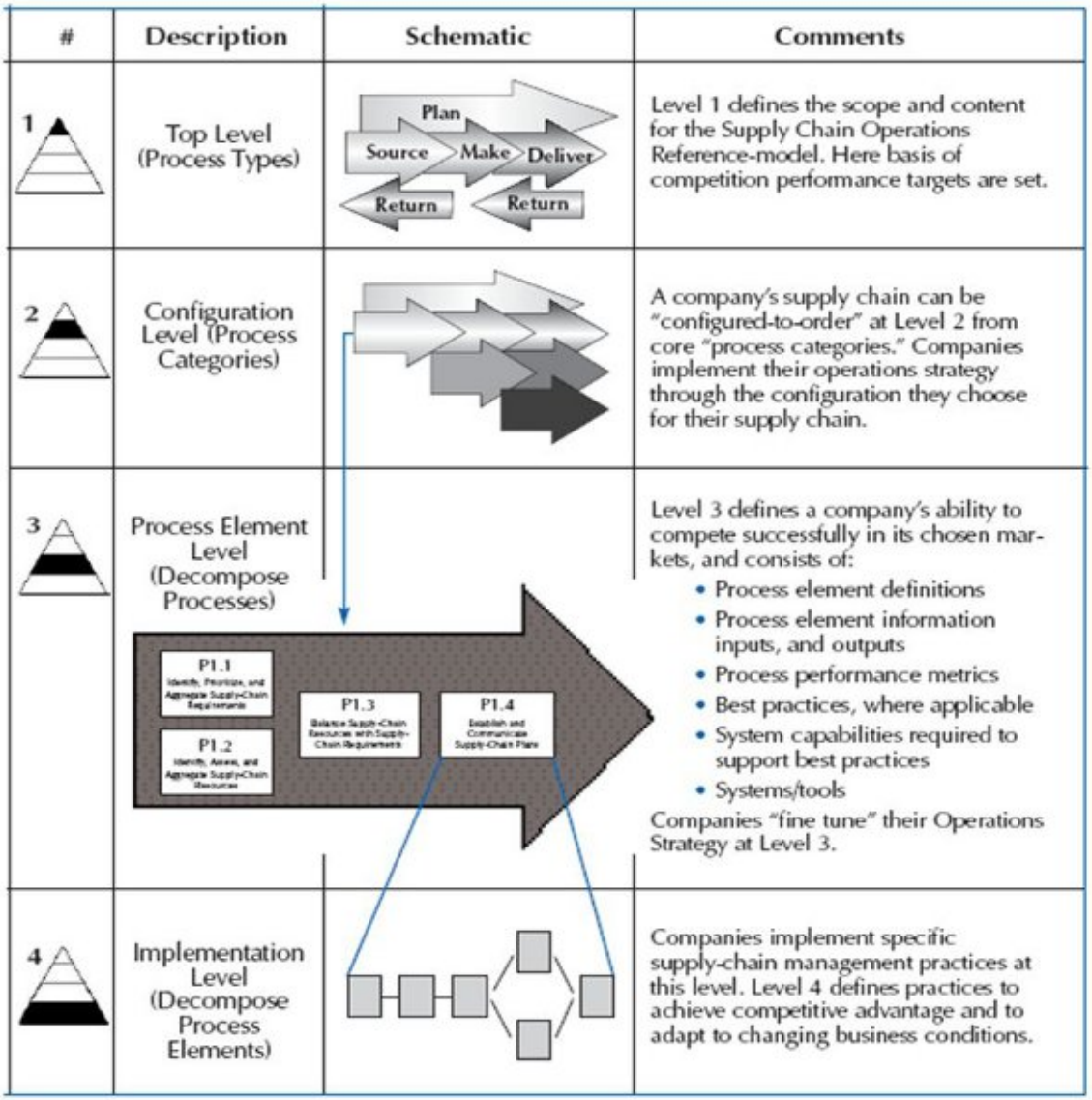
The SCOR model is widely used by manufacturing and service industries to improve the supply chain (Malin, 2006; Zhou et al., 2011; Wang et al., 2010). Modeling is widely used to represent supply chains and to improve the efficiency and effectiveness of supply chains (Beamon, 1998; Min and Zhou, 2002; Hermon, 2003; Kasi, 2005), and is an abstract representation of the real world that reduces complexity and represents only the details necessary for a specific purpose (Jayaratna, 1994; Wahlstrom, 1994; Kasi, 2005). As Malin (2006) reports, a New York hospital used the SCOR model (Malin, 2006; Di Martinelly et al., 2009; Zhou et al., 2011) and was found to be just as applicable to the healthcare field as it had been in manufacturing and distribution industries (Malin, 2006). From the home care re-ablement point of view, councils and re-ablement services are facing challenges similar to those in the health care field so if the SCOR model is used by hospitals to improve their performance then it should be used within home care re-ablement for similar effect.

The researcher believes Wirral may need a model to understand and improve their home care re-ablement service. A model is developed to understand and analyse Wirral's current home care re-ablement service. The SCOR model is appropriate for Wirral's home care re-ablement service because:

i. it has already been applied to the healthcare sector as a diagnostic tool (Malin, 2006; Di Martinelly et al., 2009);
ii. the social care sector, e.g. home care re-ablement, needs standards to communicate;

iii. the ultimate goal is to create a more efficient and effective home care re-ablement service.

Figure 2. Supply-Chain Operations Reference (SCOR) model



Source: The SCOR model (SCOR 10.0, 2010)

As shown in Figure 2 the SCOR model is a top-down approach and designed and maintained to support supply chains of various complexities and across multiple industries (Supply-Chain Council, 2010). The model is divided into a four-level

hierarchy pyramid structure and describes three levels of processes which increase in process detail and specificity. Figure 2 does not represent Wirral's home care re-ablement service yet, it is going to be used as a frame of reference. The SCOR model is used not only in manufacturing operations, but also in service operations (Zhou et al., 2011). Clearly, Wirral should have a general understanding of the SCOR model in order to apply it to their home care re-ablement service. By using the SCOR-model, Wirral could define and measure their supply chains, determine the weak links in their processes and identify necessary improvements. The SCOR model does not attempt to describe certain business processes or activities "including sales and marketing (demand generation), research and technology development, product development and some elements of post-delivery client support" (Kasi, 2005; Siegl, 2008). These business processes or activities effect supply chain performance and, therefore, are some of the limits of the SCOR model (Siegl, 2008). Since the SCOR model is evolving, newer versions will hopefully account for such activities. Some people (staff) within Wirral may decry the use of business best practices and solutions for home care re-ablement problems because of the unique challenges placed on their supply chain, especially during the winter season. However, at the strategic level, home care re-ablement and private organisations are driven by similar opportunities and constraints. Many of the problems faced in Wirral's supply chain are similar to ones that the commercial and health care sector have dealt with or are currently facing. The SCOR-model can be used to refine operations for greater efficiencies across the entire chain (Siegl, 2008).

The researcher believes Wirral should use the supply chain operational reference processes of Plan, Source, Maintain/Make, Deliver and Return as a framework for developing, improving and conducting their service's activities which could help them make rapid improvements in their supply-chain processes. The success of any tool or process depends on organisations having a clear understanding of the capabilities and limits of that particular tool or process (Siegl, 2008). As with most tools, the SCOR model is only a guide.

Level 1

Level 1 is the top level and defines the scope and contents of the SCOR model. This level defines the five management processes, which are Plan, Source, Make, Deliver and Return (Siegl, 2008). These processes set the parameters of all the other subprocesses within the supply chain.

Plan (Planning). The fundamental process throughout the supply chain is supply and demand planning. For example, Wirral is responsible for planning and coordinating a person's care. This is a challenge for it because health and social care services are disjointed. Coordinating a person's care needs and preferences should be accomplished without affecting their care outcome. An important part of this process is to have access to real-time information, and re-balance supply chains using real-time information (Zhou et al., 2011). This could be accomplished if Wirral had access to real-time health and

social care information. "The key is balancing resources with requirements" (Siegl, 2008). An organisation needs to assess aggregate supply resources and demand requirements to develop a plan that synchronises and optimizes production, inventory, distribution and initial capacity planning (Siegl, 2008). Supply and demand planning, from point of access through to the client, is a difficult task for Wirral. The goal is to improve this process for Wirral's home care re-ablement service and eliminate any bottlenecks as a client is discharged from hospital.

Source (buyer-supplier relationship). The "source" process involves the linkage of buyers and suppliers and is critical for organisations. For example, a government-led document called "Putting People First" discusses its vision for adult social care, the need for working partnerships between care providers, and personalised care-delivery (Department of Health, 2007). Local authorities are responsible for sourcing activities between care providers in order to satisfy their peoples' care needs; a form of power is exerted by the local council since it is responsible for assessing and commissioning re-ablement (Prahinski et al., 2008). Establishing long-term supplier-buyer relationships and reducing the supplier base are good sourcing practices (Zhou et al., 2011). There are local authorities outsourcing its home care re-ablement service to one supplier (Essex, 2010; Redbridge, 2010). This leads to a strong relationship between council and the independent care provider but the cost of changing suppliers is high and could be costly if the relationship between the council and independent care provider changed unexpectedly. In terms of supply chain management, local authorities are the operational-supply-chain leaders, or the buyer firm, and are responsible for: vendor and

supplier training; negotiating vendor contracts; assessment and performance measures; and operational linkages (Prahinski and Benton, 2004; Siegl, 2008). Service delivery depends largely on the achievement of synchronisation between the supply side and the demand side; local authorities have to deal with various providers and people at any given time.

Maintain/Make (transformation process). For example, Wirral council needs information technologies to help manage its production network. Under this process, an organisation is concerned with infrastructure management, production status and quality, and short-term capacity (Siegl, 2008). This is a critical process for Wirral because of the care decisions that are made regarding a person's care needs and preferences. All care decisions made by providers should be available to other care providers. This provides clear accountability for the patient.

Deliver (outbound logistics). Delivery-planning activities have a significant impact on supply chain performance (Lockamy and McCormack, 2004). Wirral, STAR, Arrowe Park Hospital, and independent care providers need to work together on a person's referral for home care re-ablement. They need to work together to improve the quality of care and to decrease labour and supply costs. Without an organised management system, Wirral is not as efficient and effective as it could be and this could lead to unnecessary hospitalisations or re-hospitalisations.

Return. Returning raw materials and receiving returns of finished goods include identifying the product condition and disposition and returning the product to the source (Siegl, 2008). Return occurs as a result of various circumstances during the care process. For example, a substandard care plan leads to post-delivery support if a person's package of care was not achieved, or they have on-going care needs; it is costly and time consuming. If this happens, Wirral should re-evaluate its client and then re-create an appropriate care-support plan; a team-oriented approach to coordinating a person's care improves care outcomes and decreases hospital admissions, and accident and emergency department visits. If a person still requires an ongoing package of care, the council will commission it from an independent care provider. Return also deals with maintenance, repair and overhaul (Siegl, 2008). If someone's package of care plan is terminated too early it could result in hospitalisation so it is important to re-assess them thoroughly before they are discharged from the service.

Plan, Source, Make, Delivery, Return are five distinct business processes that should improve Wirral's, and other local authorities', competitiveness and sustainability; organised processes create a continuous and well-orchestrated chain of activities across the whole inter-organisational supply chain (Naslund and Williamson, 2010). If these five business processes are effectively and efficiently managed then it should lead to an effective supply chain management system. A coherent and consistent view of the wider environment whereby all activities are appropriately managed needs to be provided.

Level 2

Level 2 is the configuration level and defines the core process categories that can be found in an actual and desired supply chain around an enterprise (Wang et al., 2010). For example, Wirral has provided a document with the description of its "to-be" (future) model, and is called "a collaborative partnership model for the provision of short term assessment and reablement" (Wirral, 2010). After analyzing this document, further areas for improvement are identified that could improve Wirral's performance.

Level 3

Level 3 is the process element level. This level delves deeper into the organisation to detail how work and information flow throughout the organisation's supply chain (Siegl, 2008). For Wirral, it did not take long for it to reveal how work and information flow within the service. In fact, this process is a major barrier for Wirral because it does not have the proper information infrastructure in place to efficiently and effectively manage its service. Level 3 is aligned with Level 2 for corresponding performance standards and organisational systems and interactions (Siegl, 2008). To accomplish the level 3 activities, the "to-be" (future) process model Wirral really needs to focus on key transactions mentioned in the Wirral's document, including inputs and outputs, and looks at objectives, performance metrics, best practices, and the systems infrastructures and capabilities that support it (Wirral, 2010). This was illustrated above in Wirral's new service model.

Level 4

Level 4 is the level at which supply chain management practices are implemented (Siegl, 2008). Activities at this level are specific to the organisation and are focused on implementing tasks. These activities include focusing on organisational design, processes, systems and individuals within the organisation (Siegl, 2008). Since implementation is unique to each organisation this is going to look different from one council to another. Clearly, Wirral needs to implement its new model to complete this Level.

7.2.1. Home care re-ablement supply chain operating reference model

Business process reengineering concepts capture the "as-is" state of the process and derive the desired "to-be" future state (Kasi, 2005). A summary of the five business processes as they apply to Wirral's home care re-ablement service is described below:

Plan

i. The supply-chain planning processes of Wirral's re-ablement service are largely decentralised. Re-ablement services are provided by DASS through locality teams and Arrowe Park Hospital. DASS is the operational supply chain leader since it develops and manages home care re-ablement.

ii. Being able to understand and analyse Wirral's current supply chain processes can lead to improvements to its supply chain, and cost reductions. Based on discussions with Wirral staff, they acknowledge that process improvements

are needed but are unsure in terms of how and where to improve. Improvements are needed to balance care demand and care supply/capacity in order to develop an efficient and effective care plan which best meets treatment, discharge requirements and patient.

iii. Implementing an Advance Planning and Scheduling (APS) tool should be used to integrate the whole care system and improve its supply-chain planning process. In Wirral, the APS tool could help to eliminate its barrier to effective and efficient home care re-ablement since the tool can balance planning and scheduling and improve capacity and capability for home care re-ablment. The APS tool could offer Wirral many benefits, yet the development and implementation of it on real-life cases are limited since many case studies focus on theoretical perspectives including model complexity, problem scope and design of solution algorithms (Chen and Ji, 2007; Meyr et al., 2008; Zhong et al., 2013). More research on the APS tool is needed before the Wirral invests into it.

Source

i. The referral and assessment form is an important piece of information. The referral form is submitted by hospital or intake service to DASS and determines if the patient meets FACS criteria for re-ablement.

ii. Wirral Council receives funding from the central government and other funding pools. Home care re-ablement is not a highly-controlled industry

since the provision of care services is managed by a mix of statutory, private and voluntary (non-profit) organisations.

iii. DASS commissions re-ablement services from an independent sector domiciliary care provider if the consumer requires an ongoing package of care.

Maintain/Make

i. The "make" process of Wirral's re-ablement service is complex and should be designed to generate economies of scale. They do commission some care services from the independent care sector yet need to consider using information technologies to improve economies of scale. This means that as Wirral grows and production of re-ablement services increase, it will have a better chance to decrease its costs and meet consumers' care needs and preferences if health services, local authority and independent care providers had real-time health and social care information

ii. Wirral organises its teams throughout the borough and Arrowe Park Hospital in order to rapidly meet a person's care needs. A major challenge for the locality teams is to balance supply (e.g. care staff) and demand (e.g. service users).

iii. This is the treatment process. Home care re-ablement is a make-to-order process, which allows consumers to purchase products and services that are personalised to a person's care needs and preferences.

Deliver

i. Locality teams are located throughout Wirral and within Arrowe Park Hospital to reduce transportation costs since care staff are assigned to a person's residence, based on locality.

ii. The assessment process is currently unorganised and error prone. The physical characteristic of an assessment form varies and depends on its origination, e.g. hospital or intake. Health and local authorities do not have appropriate resources available - information technologies - to streamline their processes. Because of this, the assessment process can be expensive and time consuming to care providers and people requiring re-ablement.

iii. Medical equipment could also be delivered to a person's home if necessary.

Return

i. After six weeks of re-ablement, a person may need an ongoing package of care, or a new care plan.

ii. A patient may even be transferred to a more appropriate care establishment (e.g. social housing, long-term care facility), if they are unfit to remain at home independently.

7.3. Summary

This chapter has described how Wirral's home care re-ablement service could benefit from the SCOR model. The SCOR model could be used to identify unknown problems throughout a supply chain (Kasi, 2005) and is a modeling framework that allows clear communication. The findings from this study should provide practitioners and academics some confidence to utilise the rich content of SCOR, along with the implementation and use of it. However, future studies should show local authorities how the SCOR model could be implemented to identify or address bottlenecks affecting their home care re-ablement service's supply chain. Once the SCOR model is implemented benefits such as cost savings and process improvements should become evident.

The development, management and design of the SCOR model is an open area for research that requires further exploration and could be a future research project because not every SCOR project is the same. In other words, SCOR is not a one-size-fits-all model but a template for local authorities to use for purpose of home care re-ablement services.

The clients of any home care re-ablement service are located over a relatively wide geographic area, so helping local authorities to organise efficient and effective integrated care services into one location demands greater priority. Local authorities need to achieve cost savings whilst balancing the supply and demand of the service. This should

be achieved whilst people in the community have the benefit of high-quality care services that are effectively coordinated within a strong health and social care system. Home care re-ablement involves an array of clinicians, practitioners, hospitals and other health and social care facilities, all operating in various groups, networks and independent practices. Since the home care re-ablement process involves the movement of goods, services and people, Chapter 8 discusses how one local authority, Liverpool City Council, is efficiently and effectively delivering better re-ablement services to older people in their community.

Chapter 8: Liverpool City Council Case Study

The motivation for this chapter stems from the operational difficulties that many local authorities experience within their home care re-ablement service. To overcome these difficulties and to provide better re-ablement services to clients within their community, concepts from the area of supply chain and logistics management are explored. A case-study analysis of Liverpool City Council establishes a comprehensive understanding of the logistical issues currently affecting its home care re-ablement service. To deal with these issues, supply chain and logistics management thinking are going to be applied to the area of home care re-ablement to understand how services can be better linked to clients, and how to reduce a council's operational and maintenance cost. Fundamental supply chain and logistics management principles are not new, yet application of them to home care re-ablement is unconventional and innovative.

8.1. Introduction

Many local authorities require better management and control of their home care re-ablement supply chain processes due to problems involving logistics planning, operational planning and scheduling. To deal with these problems, Bowersox et al., (2012) suggests the application of logistics planning, operational planning and scheduling strategies to eliminate issues in specific areas of the supply chain including transportation, warehousing and inventory. If these strategies are applied to a local authority's home care re-ablement supply chain then issues related to logistics planning,

operational planning and scheduling should be eliminated. Instead, the conventional order-to-delivery home care re-ablement process, referred to as the care plan, could remain lengthy, unpredictable and duplicative. Perhaps, this could lead to delay in someone's home care re-ablement service and affect his or her care outcome. To avoid this, local authorities need to design supply chain and logistics management processes to deal with current and future challenges.

8.2. Health care logistics management and home care re-ablement

It is important for a local authority to understand the role of logistics so that each activity along its supply chain network runs efficiently and effectively; planning, implementing and managing the movement of goods, services, information and people. For local authorities, understanding how logistics relates to home care re-ablement is important. There are various examples of logistical concepts embedded within local authorities:

- Local NHS and local authority act as a storage facility; it maintains peoples' health and social care information; a package of care is organised and held by the council until it is delivered to its client.
- Local authorities and care providers use a transportation fleet to deliver a package of care to their clients.
- The point of service delivery is a client's residence, where they receive their package of care.

A way to improve the flow of logistics is for health and local authorities to work together since each facility along the supply chain has an impact on cost, efficiency and reliability. This includes: information system design; organisational design; network design; and process design (Rushton et al., 2010). Whilst integration may be one solution, other options exist which local authorities and health could implement to help them address the challenges they face (London Councils, 2013). By focusing on the logistics strategy, local authorities should become more efficient and effective in terms of their home care re-ablement service.

8.2.1. Information system design

Information flows play an important role in logistics supply chain relationships (Klein and Rai, 2009). It is important for local authorities and health to have access to peoples' health and social care information; improvement efforts often fail because logistics management processes are complex, and largely paper-based (Jarrett, 2006; Archer et al., 2008). A system that connects functions and organisations in a manageable way leads to increased efficiency and effectiveness; information technology fosters better relationships within and across the organisation (Adu-Poku et al., 2011). Currently, health and local authorities do not have a systematic approach that connects their flows and as a result, they continue to waste valuable resources. Instead of multiple systems that often lead to duplicative processes, a web-based electronic information portal would support health and local authorities' logistics processes and network designs.

8.2.2. Organisational design

"Organisational structure involves the alignment of resources in a manner to develop and support specific logistics service innovation capabilities" (Bergfors and Larsson, 2009; Daugherty et al., 2011). Health and local authorities need to identify what resources they have, or need, to manage the demand of re-ablement in order to meet their clients' needs and reduce pressure on the local NHS. The impacts of organisational resources - time, money and people – need to be examined to determine how re-ablement could be better managed to satisfy its clients; if not then it will lead to delayed transfers of care and hospital admissions or re-admissions. The movement and coordination of resources between each activity has a significant impact on organisational structure; the entire supply chain system.

8.2.3. Network design

Conventional logistics network design includes the number and location of warehouses and production plants, allocation of client demand points to warehouses, and allocation of warehouses to production plants (Cheong et al., 2004). For local authorities, the logistics network design needs to be organised and managed in an efficient and effective way in order to offer re-ablement services to clients at the lowest cost; once data was collected it become apparent that network design is a major concern of many local authorities. The goal of many local authorities is to have a logistics network that meets client demands on time, irrespective of location and season. Local authorities need to position their logistics network to be responsive to any shifts in the market.

There is no research surrounding logistics network design and home care re-ablement to date, yet cases and concepts of network design are embedded throughout other industries (Cheong et al., 2005; Creazza et al., 2012). This provides an opportunity and platform for further research.

8.2.4. Process design

"Logistics process design is concerned with ensuring that business methods are aligned and organised so that they are truly supply-chain oriented. Thus, they should be streamlined and not affected or delayed because they cross functional boundaries" (Rushton et al., 2010). For local authorities, a typical logistics process is order fulfillment, known as the "referral process". It consists of many steps that ultimately affect a client's care experience and outcomes; the referral process is fragmented and involves multiple care providers such as the hospital, intake service, and independent care sector. If processes are disjointed, many local authorities could face problems with respect to service turnaround time. To avoid problems local authorities should reassess their processes to ensure that they are:

i. Client-facing: Aim to satisfy client demands and expectations.
ii. Cross-functional: The NHS and the local authority need to work together and communicate within and across organisational boundaries.
iii. Time-based: Re-ablement needs to be delivered in an efficient manner and accurately (Rushton et al., 2010).

The design of a logistics system is part of a larger process; the supply chain network. It should include: information system design; organisational design, network design; and process design. Each component within the system needs to flow efficiently to eliminate or avoid bottlenecks, or service delays. For local authorities, once the logistical processes are outlined it is important to make sure that each component works smoothly, otherwise, it needs to be re-designed. The logistical processes ensure local authorities are operating effectively so that their main objective is achieved; high quality care. The success of a local authority's re-ablement service depends on how well it is designed, implemented and managed.

The goal is to streamline the home care re-ablement process so that it can work across various health and social care boundaries; inadequate logistics planning leads to substantial problems for the whole supply chain (Rushton et al., 2010). For health and local authorities, their logistics system needs to be well-organised and should improve the production and distribution processes, namely transportation, throughout their supply chain.

Health and local authorities need to provide accurate, reliable care services to their older people; older people can pass through different health and social care settings and structures such as accident and emergency, operating theatres, hospital wards and post-acute care settings (Villa et al., 2008). For local authorities, providing reliable and accurate care could be a measurement of their success; a supply chain and logistics

management system needs to be considered to help facilitate business activities (Eveborn et al., 2009). Because health and local authorities are involved in peoples' care – home care re-ablement – the flow of care needs to be transparent within and across the various services, e.g. health, social care, housing, benefits, etc. (Seddon et al., 2014). Closer and more effective partnership working between health and social care services will lead to the greater emphasis on prevention and early intervention (Department of Health, 2006). This will also allow health and social care to acquire for their patients services from a broader range of providers within health and social care services.

Health and local authorities need multiple tools and resources to properly manage their clients' care; paper-based methods are still used to maintain peoples' health and social care records instead of standardised electronic systems. To address this issue, health and local authorities ought to focus on how their post-discharge-support interfaces are managed in terms of time and money; workload variability; service planning and scheduling; transportation; order processing; and care-provider networks. Home care re-ablement activities need to be captured from point of entry through to a post-discharge support plan, e.g. home care re-ablement. Focusing on these activities should lead to many improvements for home care re-ablement services in terms of operational visibility, communication and financial performance. Local authorities need to keep costs down and demonstrate efficiencies across their services by developing a supply chain plan that has a significant focus on logistics (Dooley, 2009).

For local authorities, a one-size-fits-all logistics system is not realistic. They should be designed independently of each other especially because each authority is solely responsible for adult social care. Local authorities have their own budget and unique community needs that require different system design decisions. A supply-chain-management approach should help to manage this increasingly complex supply-chain environment. The focus is for local authorities to deliver home care re-ablement in a time-sensitive, high quality and efficient manner across all points of care; a new integrated care environment should be adapted by health and local authorities.

Developing place-based approaches that reflect the whole of people's lives, and deliver value for money in order to co-ordinate support by including hospital, housing, transport, leisure, fire and rescue services, community and older peoples' groups is important (Centre for Policy on Ageing, 2011). A local authority should be equipped with all the resources necessary to carry out activities related to transport, logistics and distribution (Nam and Song, 2011). Alongside this, there is a shift towards personalisation of care. Bringing all of this together requires a sophisticated system that must be effectively and efficiently managed. In particular, a hub-and-spoke model could create a more accessible and reliable home care re-ablement service for older peoples' care but it could be met with reluctance since a major reorganisation of the care system is already underway (Department of Health, 2013; Triggle, 2014). Older peoples' care depends on easy access to health and social care services. Evidence shows that putting older people at the centre of service design and delivery helps to improve outcomes (Centre for Policy on Ageing, 2011). To gain further insight into a local authority's logistics planning process,

a discussion with a senior manager from Liverpool City Council helps to understand the process and their reasons for introducing an alternative delivery model.

8.3. Liverpool City Council

In 2010, a Liverpool City Council senior manager helped to understand its preventative care service, home care re-ablement; re-ablement is central to the transformation of adult social care within Liverpool and is a key strategic driver for delivering improved outcomes for service users and carers.

"Home care re-ablement is provided in-house, yet independent care providers are commissioned to provide re-ablement if the person requires an ongoing package of care" (Liverpool, 2010). Providing re-ablement in-house is more expensive. To keep re-ablement in-house, it costs Liverpool approximately £60 per hour compared to outsourcing it which costs approximately £11 per hour. Clearly, Liverpool is beginning to outsource some of its re-ablement to independent care providers because it is more affordable. Liverpool City Council receives funding from their Primary Care Trust (PCT). As a result of the independent care sector, "a bargaining system is being developed between council and the independent care providers" (Liverpool, 2010). New state-of-the-art "hubs" are being built and, therefore, the Council is going to charge independent care providers to use facility/equipment since they [providers] may not have the appropriate equipment to deliver re-ablement care to people. The goal of the Council is to have its hubs managing and commissioning all of the re-ablement packages.

Clearly, this would "reduce the time it takes the Council to make decisions regarding someone's care package" (Liverpool, 2010).

A hub-and-spoke model should be used as the basis for collaboration and capacity planning (Pahuja and Vohra, 2012). Hub and spoke could be used to help integrate health and local authorities, such as Liverpool City Council and their local NHS to utilise health and social care resources more efficiently and effectively; the importance of investment in preventative services has long been recognised and has cross-party support in Westminster (Social Care Institute for Excellence, 2013). Despite considerable obstacles a council could be faced with re-engineering their re-ablement service, some local authorities such as Liverpool City Council are beginning to consider other care delivery models that connect people directly to community-based health and social care services. Councils need to take a fresh look at their facility strategies, from site locations to design to operations, to facilitate faster hospital discharges and prevent people from going into hospital.

Liverpool City Council provides adult social care services to people aged 18 and over. Health and social care services are supported by Liverpool City Council, Liverpool PCT, Liverpool Health and Social Care Champions and representatives of the city's users and carers as part of an agreement called Dignity in Care Charter (2001). A dignity champion is someone who believes passionately that being treated with dignity is a basic human right, not an option (National Dignity Council, 2015). "A new pilot scheme for its

[Liverpool] re-ablement is being developed" (Liverpool, 2010); a patient-driven model of care. The new model of care is going to focus on people with long-term conditions who are most at risk of attending hospital unnecessarily and can be managed safer at home with care support from a nearby hub (Gladden and Cuthel, 2013). The purpose of the new model is to deliver coordinated care more effectively and efficiently and to improve and better support older peoples' care services. A new model of care is needed because of the problems that exist. This includes: "clearly defining re-ablement, job roles which are changing and some staff that are being made redundant which means remaining staff are coping with changing job roles and responsibilities, and changing forms of assessment" (Liverpool, 2010). The Assessment Re-ablement Team (ART) is being kept in-house and its occupational therapists complete the care assessment and design care packages for people.

Liverpool City Council is "developing hubs throughout the city, in the north, south and central parts. They are downsizing from 15 adult care centres to 3 hubs" (Liverpool, 2010). The hubs are going to provide health and social care support to people in need. The goal of each hub is to target the more vulnerable and older people, and to use resources more effectively across hubs, e.g. integrated working and commissioning between the local NHS, City Council and other key partners. Liverpool City Council has invested over £6 million over the past 12 months as part of the "Transformation" plan, or government's plan, to develop new hubs that better support vulnerable adults in the community (Gladden and Cuthel, 2013). Because adult social care is the biggest-spending department, £42 million has to be cut from it over the next 3 years. Behind the

London Borough of Hackney, Liverpool is the authority second most affected by public-spending cuts across the country (Waddington, 2014). Liverpool's relatively low council tax income, coupled with its reliance on deprivation-related government grants that have been either reduced or axed, make Liverpool more vulnerable to cuts compared to other councils (Butler and Carter, 2011). Such financial changes could likely affect access to care services for individuals within Liverpool. This is a concern for the Council because the central government requires local authorities to provide preventative care services (The Department of Health, 2013); it could lead to an increase in hospital usage. Home care re-ablement should play a central role in health and social care, despite the ongoing and unfair split between the NHS and social care (Triggle, 2014). Steps are being taken by the central government to create a more joined-up system of care by creating the £5.3 billion Better Care Fund and Section 256 monies (Social Care Institute for Excellence, 2013). Under Section 256 of the NHS Act (2006), the Department of Health makes available, through NHS England, funding to support adult social care which also has a health benefit (Torbay Health & Wellbeing Board, 2013). This fundng is a joint NHS and local government pot funded largely by the NHS to develop local re-ablement services (Triggle, 2014). It is clear that the investment is intended to support re-ablement services but there are other ways to support an integrated care service delivery model, e.g. hub-and-spoke.

Local authorities receive peoples' health and social care information from various providers, consolidate information according to the delivery location, and coordinate product/service delivery. Each hub is responsible for client management; quality, risk

and performance management; training and development; and regulatory compliance. By explaining an alternative delivery model, the intention is to help the council to radically change its home care re-ablement service to one that is more reliable, efficient and effective.

The hub, or local council, should continue to make decisions regarding work allocation and then assign it to the spoke, e.g. staff closest to the recipient; the Council allocates care plans to their care teams. The care team should be able to handle specific care requests from individuals within their community.

For Liverpool City Council, moving the re-ablement service to multiple locations throughout Liverpool should help to ensure better continuity of care to people. The reason for doing this is to increase capacity in order to provide more and better care for people. The advantages of managing re-ablement this way includes: flexibility in system design and implementation; simplifying the decision-making process; and empowering decision makers at the operational level (Pahuja and Vohra, 2012). Despite the many advantages, designing an efficient hub-and-spoke model is challenging largely due to finding the best location for hubs and connecting people to services they need (Pirkul and Schilling, 1998). Because policies such as the Care Act (2012) and the NHS Outcomes Framework (2014/15) promote delivery of community-based integrated care for older people, preventative care services such as home care re-ablement are poised to become significant intervention points for older peoples' care. Since local authorities are seeking

ways to help them coordinate and manage dispersed health-and-social-care service centres, a hub-and-spoke approach could be used to achieve it whilst being close to the client. After gaining a better understanding of Liverpool's organisational capacity, in terms of the funding, regulation, readiness for change, and leadership, a hub-and-spoke model of care should help them to be more successful in a changing marketplace.

"Home care re-ablement is usually distributed unevenly" (Liverpool, 2010). The workload tends to be much greater in the morning than in the afternoon. In Liverpool, the sizes of the geographical areas covered could greatly differ so accurate staff planning is important to them. Clearly, local authorities such as Liverpool City Council could benefit by using a planning system (Eveborn et al., 2009) for their home care re-ablement service.

8.4. The future: Opportunities for health and social care

For local authorities, the purpose of a hub-and-spoke model is to enhance their coordination and scheduling of home care re-ablement by optimising the flow of information between all of their care providers. It is important for all care providers to work together as part of a unified system so that they achieve common objectives (Danese, 2009). For local authorities, it is an opportunity for them to improve their entire supply-chain system, leading to cost reduction and better performance outcomes (Ahn and Lee, 2004).

The restructuring of a council's home care re-ablement supply chain should involve a working partnership between health and local authorities. In a conventional supply chain, there are sets of suppliers and plants, with raw materials or parts (goods) being shipped from suppliers to plants in order to be processed. For local authorities, the raw material is the referral form that is completed by the hospital or intake service. Once the council approves an individual's referral for care, a package of care is created by it. The council commissions the goods, or services, from its providers in order to complete a client's package of care. Creating a package of care for someone could involve specialists such as occupational therapists. This is sometimes an issue because specialist skills are often unavailable and lead to capacity constraints and longer lead times. A way to avoid this may be to adopt a hub-and-spoke model.

8.5. Summary

Prior to embarking on a mission to restructure home care re-ablement, local authorities must define and acknowledge the numerous cultural differences that currently cause discord between each council and their regional NHS affiliates. There is a great deal of tension that exists between both on a local and on a national level. To overcome these deep-rooted tensions, local authorities and NHS affiliates need to take a whole-systems approach to adult social care. Many local authorities require better management and control of their home care re-ablement business processes due to problems involving logistics planning, operational planning and scheduling.

Local authorities are fully engaged and accountable for the current, and often times sub-optimal supply chain of home care re-ablement, and each local council continues to strive to provide re-ablement more efficiently and at lower cost. Information systems design, organisational design, network design, and process design are key concepts necessary to help enrich the process of home care re-ablement. Each can be utilised by local authorities to maintain an innovative approach toward efficiency, cost reduction, and supply and demand by creating agility and flexibility. These design processes can establish better connectivity between local authorities and NHS affiliates, and are a pragmatic approach to dealing with current and future challenges.

As the government and the NHS push to reduce hospital overuse and minimise expenditure, care has made a paradigm shift toward the outpatient setting whereby costs can be greatly consolidated and preventative and post-acute care can be administered in a more efficient manner. This requires a more integrated provider approach, such as the hub-and-spoke model.

"Liverpool City Council designed a new model of care" (Liverpool, 2010). Major attempts were made to re-structure adult social care and to focus more on re-ablement. Changes were suggested to provide additional care services with a strong emphasis on supporting and enabling individuals to regain and maintain independence whilst remaining at home. Liverpool's proposed model of care addresses issues affecting how re-ablement is delivered. It attempts to implement an information and communications

technology (ICT) system for planning and documentation of its daily health and social care activities.

In Liverpool, a senior manager notes a major discrepancy between "available technology and information systems within the Council compared to the local branch of the NHS" (Liverpool, 2010). To implement appropriate home care re-ablement services via the hub-and-spoke model, the NHS and council must create a state-of-the-art, system-wide information tool. This should allow consumer data to be accessed and utilised from anywhere within the entire network to facilitate seamless communication between all providers of care. This information system must also enable system-wide patient registration and scheduling coordination as well as management of health and social care data.

Miscommunication between the NHS and local authorities and inconsistent and inefficient use of hospitals are some of the major barriers to social care reform. Efforts to successfully transfer care away from hospital and into the community where and when possible, with substantial innovation and restructuring of information systems, represent a major part of the solution toward reform. Perhaps, the most important concept that ties each of the aforementioned concepts together to facilitate positive change in the field of home care re-ablement and social care, is the hub and spoke model.

The hub-and-spoke model is an overarching concept of integrated service delivery, and is used to facilitate the integration of business processes of health and social care, and provide geographic coverage to maximise patient access to care services. This model represents a centralised location where clients are able to access the care support they need. The hub-and-spoke model is a framework for understanding how services can be linked to clients, and how to reduce a council's operational and maintenance cost for home care re-ablement. The fundamental supply chain management principle of hub-and-spoke is not new, yet there has been little attention paid to, and academic work focused on, the application of hub-and-spoke to adult social care.

Chapter 9: Discussion and Conclusions

This thesis provides a comprehensive analysis of various aspects surrounding the need, efficacy, design, modeling, and implementation of a supply chain management approach for home care re-ablement throughout England. By adopting a supply chain management approach for home care re-ablement, local authorities are able to better utilise information systems, define best practice, and integrate care services more efficiently and effectively. Evidence from health and social care organisations are used to show various supply chain management techniques and concepts. Limitations of this thesis are acknowledged and discussed and recommendations are outlined for future research.

9.1. Introduction

This thesis provides guidance to health and local authorities on how supply chain management concepts can be applied to develop a whole-systems approach for home care re-ablement. The general theoretical literature on the application of supply chain management to social care and home care re-ablement is very limited. To gain a better understanding of the interrelationship that must exist between home care re-ablement and supply chain management within local authorities, empirical research has been performed in conjunction with several local authorities and supported by literature from the health and social care sector. The application of contemporary operations and supply chain management principles to home care re-ablement is a novel and innovative approach.

In England, adult social care is fragmented, unstructured, and inconsistent in its approach to improving or maintaining health and well-being. In many local authorities, there is lack of transparency and funding for adult social care services is not ring-fenced. The result is a major void in the adult social care market that could affect the quality of care. This highlights the critical need for a systems-based approach to provide personalised care more efficiently and effectively to older people during their transition from hospital to home.

As the supply chain management field evolves in industries such as manufacturing and retailing, little is known about its application or potential application to social care. Much can be inferred from research within other industries that readily use a supply chain management approach to streamline operations. Like manufacturing and retailing, local authorities face similar challenges to these industries as they implement services relating to adult social care. The adult social care market is experiencing a paradigm shift from typical, standardised care offerings, to more personalised offerings with a significant increase in demand. This trend places greater emphasis on the provision of individualised care, highlighting the need for integration and collaboration between health and local authorities.

9.2. Answers to research questions

Three major questions are discussed:

1) How is home care re-ablement strategically managed within local authorities?

a) Based on a case-study analysis of Liverpool, Wirral, and Knowsley, it was found that each manages its home care re-ablement differently. Across England, adult social care falls within the statutory remit of the 152 local authorities, and dates back to the National Assistance Act of 1948 (House of Commons, 2012). Local authorities are responsible for providing home care re-ablement to people within their communities through a network of public and private providers that have become significantly disjointed in their approach, resulting in suboptimal care. This translates to budget shortages, increased cost to the consumer, reduced access to necessary care, and more limited options regarding the type and level of care available. Councils are under pressure to ensure re-ablement operates efficiently and effectively especially during a time when those aged over 65 comprise an increasingly significant portion of overall adult social care expenditure. To meet customers' individual care needs and preferences, councils must streamline their approach to care planning, purchasing and scheduling decisions by implementing a whole-systems approach. The Knowsley case study exposed a number of design challenges that affect care planning, care delivery and preventable hospital usage. Plainly stated, a whole-systems approach to care would synchronise and integrate all processes across various management systems and groups, such as health and other care providers, and the movement of goods (equipment), services, people, information and funds.

2) What are the main barriers to efficient and effective home care re-ablement?

a) A case-study analysis has been used to better understand the Knowsley Reablement Service. Important findings of this study highlight unanticipated issues affecting the efficiency and efficacy of the re-ablement service they provide. These are:

i. availability and access to home care re-ablement,
ii. the limits on the knowledge and skill of occupational therapists,
iii. optimising staff capacity planning and control, and
iv. developing working and integrated multi-disciplinary partnerships.

Each of these issues demonstrates a different and unique way to circumvent inefficiency throughout the Knowsley service. For the Council to be successful in its approach, it must collaborate with local NHS affiliates and private care providers to improve the transfer of patient care from the hospital team to the primary care team and other providers in the community. Home care re-ablement is becoming the most important part of adult social care because it ties together the local authority and the NHS, i.e. care and health.

A case-study analysis of Wirral Council's Short Term Assessment and Re-ablement (STAR) service has been used to identify existing barriers and inefficiencies. These include:

vi. a lack of academic evidence of the application of supply chain management for home care re-ablement,
vii. a lack of, or poor, integration in the health services supply network,

viii. inadequate information and communications technology,

ix. fragmented referral process, and

x. poor planning and control in logistics.

b) Many, if not most, of the conceptual and empirical issues currently relevant to the adult social care system stem from the divide between health and social care, which dates back to the late 1940s. Despite efforts by successive governments to make improvements to the care system, the problems from the 1940s are similar to the care system problems of today; disjointed services are very deep-rooted between health and local councils. In order to improve this, a better communication platform must be established for health and social care as success is dependent on the flow of information between all suppliers of care. The Care Act of 2014 requires local authorities to promote integration with their regional NHS affiliates and other care providers.

3) How could a supply chain management approach reduce cost and improve quality in social care?

a) Re-ablement services are important to the NHS because they can reduce the length of time that people spend in hospital or long-term residential care and early re-admissions. The need to identify strategies to support improvement in home care re-ablement through a supply chain management approach is without question, of paramount importance. Due to the complexities in operations and the existing number of service parts and components, it is more than necessary to be successful in managing the supply chain. There is a high probability that re-ablement is cost effective because it can reduce or remove the need for ongoing support but further research is needed to determine if it has

an impact on health care cost and care outcomes. To show this, a standard set of key performance indicators would need to be established by health and local authorities for home care re-ablement. Service outcomes such as "care hours required at the end of service" are a common measure of the success of re-ablement and are intended to illustrate the extent to which a person has gained independence (Social Care Institute for Excellence, 2013). However, "successful re-ablement" looks different for different people so the focus needs to shift towards financial performance (Social Care Institute for Excellence, 2013). Chapter 7 discusses the need for councils to use the Supply-Chain Operations Reference (SCOR) model as a diagnostic tool. The SCOR model would provide councils with a standard description of supply chain processes, performance metrics, best practice and enabling technologies. Adopting business best practices that fit local authorities' circumstances and using a tool such as the SCOR model would help improve the effectiveness of its supply chain.

The cost to the NHS of keeping a patient in hospital when they are ready to be released (bed-blocking) is estimated at £260 a day (BBC, 2012; The Telegraph, 2013). A case-study analysis of Knowsley Reablement Service has been used to understand how re-ablement could generate cost savings for health and long-term care services. The evidence suggested that the need for commissioned care hours and hospital admission, or re-admission, was reduced for at least six weeks due to re-ablement intervention. This translates to a cost savings of approximately £10,920 for the NHS. Since this demonstrates a cost savings based on a 6-week re-ablement intervention, it is more useful to look to studies that show lasting benefits. Lewin et al., (2013) found that receiving a

re-ablement service, versus a conventional home care service, reduced the likelihood of using any home care service for the next 3 years and the need for a personal care service for nearly 5 years. Because of re-ablement, there was a median cost savings per person of approximately AU $12,500 over nearly 5 years when compared to individuals who had received a conventional home care service. This provides further assurance that home care re-ablement leads to better care and financial outcomes.

b) Local authorities providing social services continue to struggle with issues related to cost and quality and there is considerable need for more research surrounding this. This concern is well-recognised by national and local government. There is currently no leading service delivery model that exists. There are different key performance indicators and outcomes depending on the method of delivery used by local authorities. Performance monitoring varies because local authorities are at different stages of implementing re-ablement services. Tools should be used to monitor improvements for people using re-ablement services to assess the effectiveness of the service.

Some local authorities, such as Knowsley and Wirral, have taken the initiative to develop performance measurement systems by developing performance indicators. Whilst some progress has been achieved there are differences due to the distinct operational aspects of each council. Because each local council and the NHS are faced with disparate data collection and reporting requirements, the home care re-ablement process can be a chaotic, repetitive process with various gaps. The current array of unresolved data collection issues, including many variations in measures across the various quality

reporting and performance measurement systems, results in duplication of effort, increased expense, and lost opportunities. Despite these concerns, substantial shortcomings in the quality of home care re-ablement persist. There is little research exploring a set of broadly acceptable standards and rules for home care re-ablement data collection, aggregation, and reporting of performance data. There are currently no comprehensive performance measurements available to track how well, or not, adult social care services are performing. This is one of the issues addressed here for home care re-ablement.

Many local authorities such as Wirral, Liverpool and Knowsley are working hard to find the right balance between supply (money, time and people) and demand (the NHS, client needs and preferences). This thesis analyses the adult social care market, especially home care re-ablement, from a supply chain management perspective. To understand supply chain management and how it could be applied to home care re-ablement, evidence is taken from literature and websites produced by government and think tanks. In this thesis, supply chain management theory deepens the understanding of the adult social care system and its problems.

This thesis argues that the Supply Chain Operations Reference (SCOR) model should help local authorities to develop structurally sound supply chain processes and networks. It should identify key performance gaps, establish appropriate benchmarks and clearly define re-ablement. In particular, councils should adopt the SCOR model to improve

competitiveness, operational efficiency, and track performance. The model should help councils to balance supply and demand appropriately to meet peoples' care needs, and provide councils with accurate performance measures.

9.3. Other findings

1) Prevention rather than cure.

Local authorities and the central government should invest heavily in preventative care services like home care re-ablement to reduce a person's care needs; a key part of the Care Act 2014 focuses on preventing or delaying the need for support. The need for greater investment in prevention and rehabilitation services became clear over a decade ago (Stevenson, 1999; Glendinning and Newbronner, 2008; Glendinning et al., 2010). A service that is geared towards prevention helps to reduce cost and to deliver better care outcomes. Consequently, local authorities need to invest more initially to reduce long-term care costs and improve service levels. For example, highly-skilled people are needed for a home care re-ablement service, e.g. physical therapists, occupational therapists, nurses. However, those paying the cost, whether health or social services, need to be convinced of the benefit of investing up front in re-ablement to save money later on in reduced care and hospitalisation. It is the old argument of prevention being better than cure.

2) Home care re-ablement is the focal point of health and social care.

Home care re-ablement should be the focal point of health and social care because of its role in early intervention and prevention services. For example, Liverpool developed a hub model of care by creating several sites throughout the city to ensure people have better and quicker access to care services and providers, and to increase the levels of integration between the hospital discharge planning team and social services. The role of each hub is to prevent people from being admitted or re-admitted to hospital, to support people to return home after a recent hospitalisation, and to enable people to live independently at home rather than in residential care homes. To be successful, each local authority and their regional NHS affiliates must establish an integrated provider model.

3) Home care re-ablement should help to reduce hospital admissions and re-admissions.

a) Increasingly, older people are being admitted to hospital unnecessarily because they do not have access to specialist care services, such as home care re-ablement, to help them remain at home independently. Currently, a major problem for many hospitals is bed-blocking. To alleviate this, the NHS should seek to invest more in preventative care services since there are over 2 million unplanned hospital admissions each year among elderly people. Knowsley Reablement Service managed to generate a cost savings to health and long-term care services because it minimised the need for commissioned care hours and reduced hospital admissions and re-admissions. In this way, Knowsley clearly demonstrates how preventative care services such as re-ablement reduces the overall usage of hospital beds by elderly patients. More joined-up care is what many older people need yet a comprehensive preventative care system remains a challenge for central

government and local authorities to achieve because of the disjointed nature of health and social care services.

Liverpool City Council, for example, has placed a greater emphasis on joined-up care services by establishing hubs throughout the city to foster better coordination between local health care services, GPs and community care. This is an example of how the Council, and other local authorities such as Leeds, Cambridgeshire and Hartlepool, are using supply chain management principles to improve the home care re-ablement process. The Liverpool experience suggests that the hub-and-spoke model should be extended to other local authorities.

4) The social care framework is grounded in supply chain management techniques.

For many local authorities, the social care framework for older people's care is grounded in supply chain management techniques typically without explicitly realising it. Wirral provided documentation that has been examined and validated for how efficiencies could be gained by applying a supply chain management approach. This demonstrates how common supply-chain terminology translates across industries and organisations. A host of inefficiencies in Wirral's home care re-ablement supply chain have been identified and cross-correlated with supply chain management techniques. Chapter 7 discusses how supply chain management techniques are effectively embedded in Wirral's home care re-ablement service. Based on the Wirral case study, supply chain management theory is, indeed, relevant to home care re-ablement. The findings from this study should provide

practitioners and academics with confidence to utilise the rich content of supply chain management theory when developing whole systems of care. There is a pressing need for Wirral and other local authorities to implement the supply chain management techniques identified in Chapter 7.

5) The evidence base is growing for preventative and restorative care services.

There is a growing evidence base for preventative and restorative care services, such as home care re-blement, suggesting they reduce the need for ongoing support and home care (Kent et al., 2000; Baker et al., 2001; Tinetti et al., 2002; Glendinning et al., 2006; Research in Practice for Adults, 2007; Jones et al., 2009; McLeod et al., 2009; Francis et al., 2011; Lewin et al., 2013). These studies are positive and show that re-ablement reduces service costs because it minimises the need for ongoing support where and when possible. Despite this positive evidence, the volume of research is still limited and needs to be increased.

A case-study analysis of Knowsley Reablement Service has been used to understand home care re-ablement more deeply. A senior manager from the Knowsley Reablement Service provided documents that contained a significant amount of information regarding the services they provide (Knowsley, 2011). In March 2011, there were 98 new referrals to the re-ablement service. The "number of service users requiring no further support" after six week of enrollment in the service was 14, and the "number of service users requiring ongoing support", or referred to as ongoing domiciliary care, was 49. Thirty

two of the remaining clients experienced an unplanned event leading to a different disposition, hospitalisation or alternate facility. Because of re-ablement care, more than 50% of its service users were kept out of hospital whilst receiving re-ablement care at home. Knowsley Reablement Service generated cost savings to health and long-term care services because it reduced the need for commissioned care hours and hospital admissions and re-admissions for at least six weeks. This study demonstrates that many individuals who received re-ablement services were not re-admitted to hospital during the care episode. This study strengthens and extends the body of evidence regarding the cost effectiveness of home care re-ablement and the reduced need for ongoing care services.

6) The need to reduce hospital bed-blocking and minimise expenditure.

As the government and the NHS push to reduce hospital overuse and minimise expenditure, care has made a shift toward the outpatient setting whereby costs can be greatly consolidated and preventative and post-acute care can be administered more efficiently.

Older people are being given more opportunities to live in the community and receive care they once could only receive in hospitals. This is often intrinsically less expensive as it eliminates overhead that would have been incurred if the same services were to be provided in a more formal setting. In addition to obvious cost savings, patients' wishes are respected most with this model since many chose to return home after acute care is delivered. Long-term care facilities have been the standard of care for several decades

although this trend toward bringing care back into the home appears to mirror and revisit care principles once used prior to the existence of the NHS in the 1940s.

7) Local authorities should use a standard, nationwide assessment tool to complete assessments.

Each council and their local NHS can complete all assessments and supporting documentation for referrals to home care re-ablement by using a standard, nationwide assessment tool. A coordinated entry system should ensure community-wide or systems-level planning and outcomes. This approach, although necessary for enrollment into each program is fraught with inconsistency. Applications to adjacent jurisdictions can often go unnoticed or suffer from duplication due to lack of a single standardised application.

In Sweden, Eveborn et al. (2009) describe the benefits of LAPS CARE which is comprised of a standard form and assessment tool, giving monetary savings, increased efficiency, optimised transportation, budgeting accuracy, sick leave benefits, quality and safety. A great deal can be learnt from this system. It produces a visible, concrete and universal way for providers to communicate regarding new referrals. Placement can often be done within hours of first communication by primary team as patients become medically stable for discharge from acute care settings. LAPS CARE takes an integrated and comprehensive approach to an entire supply chain, including key suppliers, transportation channels, the various process facilities, every available warehouse, and the customer or clientele. Given the most widely acknowledged barriers to implementing

efficient and effective home care re-ablement, LAPS CARE or a similar system could be repositioned as described in this thesis to transform and revolutionize the entire home care re-ablement system.

8) Outsourcing Wirral's home care re-ablement service would save the council and the NHS money and increases the capacity of the re-ablement service.

A major weakness in the Wirral's existing model of care is capacity planning. To address this, a number of options have been discussed: use of taxis for non-drivers, assigning drivers to team up with non-drivers and more productive use of unplanned downtime by training enabler staff to meet wider departmental agendas regarding health promotion. Additionally, personal planning, low-level sign posting and assessing for small aids and adaptations must be incorporated. Some of these options can be costly.

In New Zealand, commissioning private providers in a predominantly public primary care sector has improved capacity planning within the health care system (Ettlet et al., 2009). This is an example of outsourcing. Outsourcing services from independent sector providers alongside or in place of in-house services allows for added value, efficiency and effectiveness to cover existing voids where and when they arise. District Health Boards negotiate contracts with independent care providers and private hospitals. Contracts and service level agreements define the type and volume of services to be provided, financing arrangements, and key performance indicators such as "pay for performance". A major reason for outsourcing is to increase the capacity and flexibility

of the service so that peoples' care needs and preferences are met without delay, and at a lower cost.

Outsourcing is an important component of the re-ablement supply chain because it is a way for local authorities to cope with market fluctuations, gain access to providers' core competencies and remain profitable. Kent is an example of a local authority that outsources its re-ablement service through independent providers (Kent, 2010). In 2010, Wirral designed a new model of care (Wirral, 2010). Major attempts were made to re-structure adult social care and to focus on outsourcing home care re-ablement through independent providers to reduce costs and increase capacity. Rather than performing re-ablement activities in-house, some local authorities are adopting outsourcing solutions in an attempt to re-design business processes, lower costs, increase capacity, and reduce hospital overuse and discharge delays. The adult social care system is shifting from an expensive, hierarchical in-house system to a fragmented network built of strategic partnerships with outsourced suppliers. Because of the constraints faced by local authorities in terms of capacity planning and core competencies, outsourcing as a supply chain management strategic tool can be used to manage home care re-ablement supply chains more effectively.

9) Various techniques are an integral component of the research process.

Action research, case study discussions, observations, and documents have been used to analyse and report qualitative data (Corbin and Strauss, 1990; Kvale, 1996; Houghton et

al., 2012). These various techniques have been an integral component of the research process and have provided complementary insights. This has led to a comprehensive understanding of the barriers within home care re-ablement, and has been used to establish a link between home care re-ablement and supply chain management. If local authorities readily incorporate the most recent advances in understanding of supply chain management into their home care re-ablement process, the barriers affecting the service are going to be addressed and would lead to a more effective and efficient home care re-ablement supply chain. Despite the growing significance of supply chain management in other industries such as manufacturing and retailing, supply chain management techniques have not evolved within the adult social care sector. Health and local authorities are not explicitly using the concept of supply chain management as a way to manage home care re-ablement. The gap between research findings and practice represents an enormous missed opportunity in this field. The data collection process involves the integration of practice and research and is fundamental to this thesis (Wirral, 2010; Knowsley, 2011; Liverpool, 2011). In addition to the primary data collection process, literature concerning the adult social care sector and supply chain management is used to link research to practice (Drake and Davies, 2007; Ettelt et al., 2007; Eveborn et al., 2009; Aronsson et al., 2011; Lee et al., 2011; Lewin et al., 2013). Identifying a connection between supply chain management concepts and the practice of home care re-ablement is an original contribution to both areas.

10) Supply chain management theory can readily be applied to healthcare.

"Better Health Greater Cleveland" in Cleveland, Ohio is a group of 55 primary care practices, across eight health systems, working together to eliminate hospitalisations. To achieve this, the primary care practices throughout the Cleveland area have implemented an electronic health record system to target the treatment of chronic diseases such as diabetes, heart failure, angina and hypertension. Between 2009 and 2011 Better Health predicted that they avoided an estimated 2,624 fewer hospital stays than expected based on trends in the next five largest Ohio counties. Their total population served was 137,600 patients. Because of significant investment in information systems by these primary care practices, it led to nearly $20 million in savings that would otherwise have been paid to hospitals in Cleveland. As information systems have benefitted health care organisations throughout Cleveland this suggests that local authorities and the NHS in the UK could make an investment together in a similar system that would produce savings for the NHS and the local authorities.

A carefully-managed strategy such as a home care re-ablement supply chain management approach would lead to many rewards in terms of efficiency, economies of scale, accessibility, uncertainty, improved logistics, better lead times, and the simplification of complex work processes between local authorities and their local NHS affiliates.

There is research available that describes strategies that have been developed to improve adult care services. Neighbourhood Networks Schemes in Leeds, Cambridgeshire Older

Peoples Reference Group in Cambridgeshire, Bournemouth, Dorset and Poole (BDP) Total Place Pilot and Connected Care in Hartlepool are examples of local authorities that are efficiently and effectively connecting health and social care services in the community (Centre for Policy on Ageing, 2011). There are several hubs located within each council enabling a more rapid response to demand fluctuations or supply chain disruptions.

11) The benefits of using the hub-and-spoke model.

Through use of the hub-and-spoke model, Leeds has joined-up with its local NHS to create a community-based scheme to save money by preventing avoidable use of A&E, hospitals and GP surgeries. This model is gaining popularity in the community. Leeds appears to be a pioneer when it comes to this model of care. There is quick and efficient transfer of patients into services and it appears to be a more successful than what was in place prior to its implementation. Perhaps most importantly, the hub-and-spoke model endorses the supply chain management hypothesis by demonstrating the application of supply chain management practice to good effect. It is important to recognise that the fundamental supply chain management principle of hub-and-spoke practice is not new, yet its application to social care and home care re-ablement is a completely novel and innovative concept.

12) Adopting the SCOR model is important in home care re-ablement.

This thesis has presented a home care re-ablement supply-chain-operating model for Wirral using SCOR. The purpose of the SCOR model is to understand, analyse, and solve problems. Adopting best practices that fit local authorities' circumstances by using a tool such as the SCOR model can help integrate supply chain management principles into practice. The SCOR model has been used to capture different facets of Wirral's home care re-ablement infrastructure. This was an astonishing find. Wirral's existing issues were identified and connected to supply chain management techniques so that they may be improved and streamlined. This was necessary prior to application of the SCOR model. Once this is accomplished, the SCOR model can be used as a process reference to help in improving the home care re-ablement service.

As there is no evidence available of the SCOR model being adopted by local authorities for their adult social care, evidence from the health care sector exists for discussion. Malin (2006) published a report that describes a hospital in New York using the SCOR model as a process-improvement tool. According to the report, established benchmarks led to a shift in the business paradigm. This led to significant service and operational improvements for the hospital. By using the SCOR model, Malin (2006) describes how the hospital was able to define and measure its supply chain, determine the weak links in the processes, and identify necessary improvements. Evidence reported by Malin (2006) implies that local authorities can apply the SCOR model to the field of home care re-ablement to create a supply chain, determine the weak links in the processes, and identify

necessary improvements by mapping the flow of patients and information. This is unique in that it is one of the very few case reports of a model that directly correlates to creation and definition of a theoretical supply chain. It is novel and can be used to define operations and create best practice.

Plan, Source, Maintain/Make, Deliver and Return processes have been applied to the Wirral case study. Applying these processes to Wirral's home care re-ablement service helped to identify its products and services whilst finding new ways to improve financial performance. As discussed earlier, to implement appropriate home care re-ablement services via the SCOR model, the NHS and Wirral must create a state-of-the-art, system-wide information tool. This would allow consumer data to be accessed and utilised from anywhere within the entire network to facilitate seamless communication between all providers of care. This information system must also enable system-wide patient registration and scheduling coordination as well as management of health and social care data. An Advance Planning and Scheduling (APS) tool can be used to integrate the whole care system and improve its planning process. An APS is used for planning and scheduling purposes along with capturing information on resources. This should allow councils such as Wirral to plan and schedule home care re-ablement packages more efficiently whilst providing capacity and core capabilities quickly.

9.4. Theoretical implications

No evidence-based tool currently exists for helping councils to effectively and efficiently streamline their adult social care. In this thesis, a whole-system's approach has been recommended based on qualitative methods and fieldwork analyses. Unlike surveys, fieldwork has helped to understand the area of adult social care in detail and has revealed many issues that require systems solutions. Chapters 4 and 5 discuss key problems faced by many local authorities. During the data-collection process, it became apparent that local authorities are inadvertently implementing supply chain management techniques without explicitly realising it. A link between home care re-ablement and supply chain management thinking became more apparent. For the purposes of this work, it would have been ideal to involve all 152 local authorities in England, along with key government stakeholders. It was limited to three councils to promote feasibility. The data sampled provided for an in-depth understanding of the adult social care environment within Wirral, Knowsley, and Liverpool. Evidence was also used from other locations in England and the USA.

The adult social care market is quite complex. It is important to understand the deep-rooted history of adult social care prior to embarking on a mission to restructure home care re-ablement. Historical review of adult social care has led to a better understanding of the structural barriers affecting the system. The legal framework for the provision of adult social care services dates back to 1948 (The Law Commission, 2011). Since 1948, the adult social care market has changed considerably and so has its landscape with

respect to the current ageing population, ongoing public spending cuts, finite resources, and the growing care preferences and needs of its consumers.

For local authorities and the NHS, a major problem is the lack of a unified definition of home care re-ablement. There are many existing definitions, but one clear definition is necessary to design good system solutions. A system must have a clear objective before it can be designed well. Without the adoption of a uniform definition accepted by all parties, confusion will continue to suppress all future development of adult social care. To demonstrate this, several case-studies were conducted in the North West of England. Senior organisers from Wirral, Knowsley and Liverpool were asked to define re-ablement. Each manager appeared to have understood the concept of home care re-ablement yet each described it differently. The difference contributes to the provision of services to individuals taking place in unconnected silos- by the NHS, by local authorities and by voluntary and independent sectors (The Health Committee, 2012; The King's Fund, 2014). The lack of a unifying definition for health and social care makes it difficult for local authorities to deliver a joined-up, integrated service in an efficient manner (Parker, 2014).

Although local authorities define re-ablement differently, key concepts have emerged for re-ablement. Often, definitions highlight the need to support individuals physically, socially and psychologically to regain the health, skills and independence necessary for daily living. This thesis supports a more wholesome and all-encompassing definition, "a

service for individuals who require help regaining the health, skills and confidence needed for daily living and well-being." As a frame of reference, the proposed definition can be used to unify and connect local authorities and the NHS, and it can be used to facilitate revolutionary change in the field of home care re-ablement and social care.

Efforts to change the adult social care process, and home care re-ablement, by the central government are going to represent a major part of the solution toward health and social care reform. Perhaps, the most important law since 1948 is the new "The Health and Social Care Act (2012)". Because of the Health and Social Care Act (2012), the adult social care system is going to change from a traditional care model based on independent autonomous clinicians to a prevantative care model that promotes care coordination, higher quality and lower costs. Beginning in April 2015, local authorities will have to comply with this Act (Department of Health, 2014). The Act will actually require local authorities and their local NHS affiliates to create and integrate theoretical supply chains. The role of local authorities will likely shift from provider of care to broker of care. This should create a quasi-market of service care provision, since local authorities are going to be fully responsible for assessing and commissioning providers of care. To facilitate profound change in home care re-ablement, local authorities will need to connect with every care provider in their network. A key feature of the Care Act is the integration of local authorities and the NHS. With the Care Act being lawfully implemented in April 2015, local authorities need to create a whole-system's approach to facilitate these changes that will soon be required.

9.5. Policy implications

The provision of home care re-ablement services for older people, and a council's ability to create and implement a supply chain management approach that suit the needs of their customer base, irrespective of geographic location, forms the basis of future focus for local authorities and the NHS. In many local authorities, this approach is already taking form, but has yet to formally be characterized either implicitly or explicitly as an approach that utilises supply chain management theory. There are several policy programmes co-designed by the central government and local authorities that highlight the need for care-system reform. Each uses language and ideology embedded in supply chain management but fails to acknowledge the origin of its structure and principle. The Vision for Adult Social Care (2010), the Care and Support White Paper (2012), the Adult Social Care Outcomes Framework (2011/12) and (2013/14), and the Health and Social Care Act (2012) are national and local documents suggesting health and social care integration. These are only some attempts that have been made to re-structure the care system. Strong emphasis has been placed on supporting and enabling individuals to regain and maintain independence whilst remaining at home.

To be successful, local authorities and the NHS should seek to integrate older peoples' care and support services. Because home care re-ablement services are disparate, the evidence for integrated service delivery models remains patchy. Leeds, Cambridgeshire, Hartlepool, and Sweden provide examples of various forms of integrated service delivery models that have been implemented. Efforts to facilitate collaboration between local

authorities and their local NHS have been strategically or operationally driven but not holistically. In Knowsley, the local NHS hospital and community care teams work on care assessments independently. There is a great deal of tension that exists between the council and the NHS because both have different referral methods and forms albeit in an office that includes health and social care professionals. To overcome this, the hospital and Knowsley must begin to coalesce.

A supply chain cannot, independently, improve customer value and satisfaction without re-defining the system so that there is integration between business processes. With integration, peoples' care needs and preferences would be satisfied better, local authorities would leverage supply-chain capabilities in a more organised manner, and rising costs and spending would be controlled better because the processes would be more streamlined and transparent.

Clearly, the focus is to change the way care services are delivered to older people, yet policy documents have not explicitly outlined a solution by using a supply chain management approach. The purpose of this thesis has been to bridge the knowledge and awareness divide that exists between practice (local authorities and the NHS) and academia.

9.6. Limitations of the study: Recommendations for future research

The scale of the home care re-ablement debate is extensive and multifaceted even at the local level. To generate achievable strategies and development targets in this area in the context of supply chain management, more case studies are needed at the local level to allow further assessment of a supply chain management approach to organising home care re-ablement. Four specific limitations of the study are:

i. The SCOR model: Local authorities could adapt this model as part of a major process re-engineering effort to evaluate the current and future state of their home care re-ablement framework. The SCOR model does not exist in the area of home care re-ablement, thus more research by academics and practitioners is needed to demonstrate the utility of the SCOR model as a method for identifying gaps and inefficiencies in processes. It must be applied to establish a common set of metrics to monitor performance and best practices. Despite the many benefits of the SCOR model in other industries, more research is required to show how local authorities could benefit from its adoption.

ii. Analysing each local authority's home care re-ablement process is possible by mapping key transactions that surround the service, such as scheduling, invoicing, discharging, producing and purchasing. Process mapping would identify and create a visual illustration of work flow. The benefit of process mapping includes problem-solving as it is easier to identify breakdowns in process when they are represented visually. This conceptual model of understanding demonstrates a strong correlation to supply chain theory and provides a platform for future research.

iii. To improve the use of resources, local authorities must identify the unit costs of their home care re-ablement services in terms of transportation, operations, and labour. Since the true cost of providing home care re-ablement services is not clear and often seen as expensive, local authorities should connect outputs to outcomes. This information would provide councils and the NHS with a view of the total cost of operations and the resultant cost per unit of output. This would demonstrate that investment in re-ablement services leads to a reduction in the demand of health care and long-term support services, and is, therefore, a cost effective longitudinal strategy.

iv. The current evidence base for home care re-ablement is limited (Glendinning and Newbronner, 2008; Glendinning et al., 2010; Rabiee and Glendinning, 2011; Social Care Institute for Excellence, 2012), highlighting the need for practice-based evidence. More research is needed in this area to bring together new knowledge and ideas with existing practice. Knowledge gained during the process of translating research into practice would be valuable, and would improve re-ablement outcomes and reduce the need for commissioned care hours. More attention should be directed toward the cost-savings benefit to the NHS and long-term care, and how this model of care improves older peoples' health and well-being and reduces hospital usage. Translating research into practice would help to improve the quality of care services and establish best practices because it would show which methods work best. Research in this area would maximise the value of home care re-ablement and would contribute to the whole system of care.

9.7. Conclusions

There is particular interest in home care re-ablement because of its connection to health and adult social care, and the application of supply chain management. The current state of the adult social care system in England is of major concern. A steady increase in life expectancy, financial cutbacks, and growing inefficiencies within the current system have highlighted the need for major reform. Local authorities and the NHS have a substantial opportunity with significant challenges ahead as they attempt to restructure and revolutionise home care re-ablement. Continued increases in the hospitalisation of older people has led to the development of terms used on a daily basis such as 'bed-blocking'. To implement a more efficient and effective home care re-ablement service, local authorities should revamp their existing supply chain processes to control their costs better, so peoples' care needs and preferences are met.

In many instances current social care systems, although fragmented, make use of concepts and models that in parallel are defined in supply chain theory, although the managers do not realise this explicitly. A discussion of logistic support and supply chain theory and concepts has been used to assign meaning to and fortify home care re-ablement processes. A strategic supply chain management approach applied to home care re-ablement would significantly improve a local authority's operational efficiency and effectiveness.

Progress has been observed in the area of home care re-ablement in terms of an expanding evidence base and through documents and policy debates, but there is a need for more high-quality and complex studies to be performed to gather sufficient data, on a large enough scale, to demonstrate the effectiveness of a supply chain management approach in this particular area. This thesis should provide knowledge and guidance to senior managers in local authorities regarding a holistic supply chain management approach to social care. Practitioners (local authorities and the NHS) and academics may remain unaware of the importance of a supply chain management approach to home care re-ablement. Correlations must be drawn from supply chain management literature and applied in practice by practitioners to recognise and appreciate overlap. Local authorities and the NHS must appreciate that costly and time consuming implementation of a supply chain management approach is not without major challenges.

There appears to be no all-encompassing supply chain management approach previously reported that facilitates an understanding of social care supply networks. This thesis addresses this gap by focusing on how adult social care services have been rendered throughout local authorities, with a particular interest in home care re-ablement. The research, carried out in collaboration with the adult social services departments of several local government authorities in England, demonstrates similar inherent complexities within re-ablement services. Fragmented supply networks, lack of collaboration between health and social care providers, inadequate information and communications technology (ICT) for data sharing, changing demographics, rising consumer expectations and demands, and detrimental economic factors are the most recognised. Evidence is derived

from case-study analyses of Wirral, Liverpool and Knowsley. These case-study analyses have revealed challenges for which supply chain management practices would provide solutions. Existing evidence of the application of supply chain management practice and theory to social care has been very limited, therefore, the application of supply chain management theory from other industries/sectors has been used to address the same issues as those seen in contemporary social care. Knowledge has been transferred across sectors. The practices adopted in other sectors have been considered to provide lessons that might be useful to senior managers for home care re-ablement.

Transforming a local authority's home care re-ablement infrastructure through application of supply chain theory mandates a change in thinking as well as practice. Local authorities must define their role and begin to execute value-added activities across the entire network. Local authorities can no longer create silos and must focus on integrating processes with health and other care providers. A supply chain management approach in the area of home care re-ablement would allow local authorities to become efficient, whilst improving their re-ablement processes, creating long-term partnerships with providers for collaboration in order to deliver value, and ensure better care outcomes for older people. The objective of this thesis has been to relate the theories and principles of supply chain management to home care re-ablement in order to improve access to care, enhance care coordination, and to achieve improved health and care outcomes.

References

Adivar, B., Atan, T., Oflaç, B.S. and Örten, T. (2010). Improving social welfare chain using optimal planning model. *Supply Chain Management: An International Journal.* 15(4), pp. 290-305.

Adler-Milstein, J., Ronchi, E., Cohen, G.R., Winn, L.A., and Jha, A.K. (2013). Benchmarking health IT among OECD countries: better data for better policy. *Journal of the American Medical Informatics Association.* 21(1), pp. 111-116.

Adu-Poku, S., Asamoah, D., and Abor, P. (2011). Users' perspective of medical logistics supply chain system in Ghana: The case of Adansi South District Health Directorate. *Journal of Medical Marketing: Device, Diagnostic and Pharmaceutical Marketing.* 11, pp. 176-191.

Ahn, H.J. and Lee, H. (2004). An agent-based dynamic information network for supply chain management. *BT Technology Journal.* 22(2), pp. 18-27.

Age UK (2014). *Intermediate care and re-ablement.* [online] London: Age UK Available at: http://www.ageuk.org.uk/Documents/EN-GB/Factsheets/FS76_Intermediate_care_and_re-ablement_fcs.pdf?dtrk=true (Accessed 15th April 2014).

Agudelo, I. (2009). *Supply Chain Management in the Cement Industry.* Dissertation. Massachusetts Institute of Technology.

Ahi, P. and Searcy, C. (2013). A comparative literature analysis of definitions for green and sustainable supply chain management. *Journal of Cleaner Production.* 52, pp. 329-341.

Alemayehu, B. and Warner, K.E. (2004). The lifetime distribution of health care costs, *Health Services Research.* 39(3), pp. 627-642.

Allen, K. and Glasby, J. (2010). *"The billion dollar question": embedding prevention in older people's services: 10 "high impact" changes.* Birmingham: University of Birmingham, Health Services Management Centre.

Anderson, S. and Edie, P. (2009). Time to do more with less. *Community Care,* 1798, pp. 20-21.

Aptel, O. and Pourjalali, H. (2001). Improving activities and decreasing costs of logistics in hospitals. A comparison of U.S. and French hospitals. *The International Journal of Accounting.* 36, pp. 65-90.

Archer, N., Bajaj, H., and Zhang, H. (2008). Supply management for home healthcare services. *INFOR.* 46(2), pp. 137-145.

Aronsson, H., Abrahamsson, M., and Spens, K. (2011). Developing lean and agile health care supply chains. *Supply Chain Management: An International Journal.* 16(3), pp. 176-183.

Ash, J.A., Berg, M., and Coiera, E. (2004). Some unintended consequences of information technology in healthcare: the nature of patient care information system related error. *Journal of the American Medical Informatics Association.* 11, pp. 104-112.

Association for Healthcare Resource and Materials Management (AHRMM) (2003). *Materials Management Guide: CMRP Examination Review Guide,* 2nd Edition, Chicago: Association for Healthcare Resource and Materials Management.

Association for Public Service Excellence (2008). *Strategic commissioning in local government* [online]. Available at: http://www.apse.org.uk/briefings/08/08-48%20Strategic%20commissioning%20in%20local%20government.pdf (Accessed 7th June 2011).

Atwal, A., McIntyre, A., Craik, C., and Hunt, J (2008). Occupational therapists' perceptions of predischarge home assessments with older adults in acute care. *British Journal of Occupational Therapy*. 71, pp. 52–58.

Audit Commission (2000). *The way to go home: rehabilitation and remedial services of older people* [online]. London: The Audit Commission. Available at: http://www.audit-commission.gov.uk/SiteCollectionDocuments/AuditCommissionReports/NationalStudies/WayToGoHome.pdf (Accessed 7th July 2011).

Audit Commission (2005). *Governing partnerships: Bridging the accountability gap* [online]. London: The Audit Commission. Available at: http://www.forumpartnerships.zsi.at/attach/UK_05_R_AC_Governingpartnerships.pdf (Accessed 7th July 2011).

Audit Commission (2011). *Joining up health and social care: improving value for money across the interface* [online]. London: The Audit Commission. Available at: http://archive.audit-commission.gov.uk/auditcommission/sitecollectiondocuments/Downloads/vfmhscinterface.pdf (Accessed 17th February 2015).

Baker, D., Gottschalk, M., Eng, C., Weber, S., and Tinetti, M. (2001). The design and implementation of a restorative care model for home care. *The Gerontologist.* 41(2), pp. 257-263.

Bamford, D., Thornton, H., and Bamford, J. (2009). Health-care logistics redesign. *Operational Research Society.* 22(3), pp. 140-152.

Baroudi, J.J. and Orlikowski, W.J. (1991). Studying information technology in organizations: research approaches and assumptions. *Information Systems Research,* 2, pp. 1-28.

Bates, D.W. (2002). The quality case for information technology in healthcare. *BMC Medical Informatics and Decision Making.* 2, pp. 7-16.

Bauhof, N. (2004). SCOR Model: Supply Chain Operations Reference Model. *Beverage Industry.*

Baum, F. (1995). Researching public health: behind the qualitative-quantitative methodological debate. *Social Science & Medicine.* 40(4), pp. 459-468.

Beamon, B. (1998). Supply chain design and analysis: models and methods. *International Journal of Production Economics.* 55(3).

Behling, O. (1980). The case for the natural science model of research in organizational behavior and organization theory. *Academy of Management Review,* 5, pp. 483-490.

Bennett, L and Humphries, R. (2014). *Making best use of the Better Care Fund: Spending to save?* [online] London: The King's Fund. Available at: http://www.kingsfund.org.uk/sites/files/kf/field/field_related_document/making-best-use-of-the-better-care-fund-references-kingsfund-jan14.pdf (Accessed 17th January 2014).

Benson, H.R. (1994). An introduction to benchmarking in healthcare. *Radiol Manage.* 16(4), pp. 35-39.

Bergfors, M.E. and Larsson, A. (2009). Product and process innovation in process industry: a new perspective on development. *Journal of Strategy and Management.* 2(3), pp. 261-276.

Berman, O. and Wang, Q. (2006). Inbound logistic planning: minimizing transportation and inventory cost. *Transportation Science.* 40(3), pp. 287-299.

Bhasale, A.L. (1998). Analysing potential harm in Australian general practice: an incident-monitoring study. *Medical Journal of Australia*. 169, pp. 73–76.

Bhaskaran, S. (1998). Simulation Analysis of a Manufacturing Supply Chain. *Decision Sciences.* 29(3), pp. 633-657.

Bingham, J. (2014). "Elderly and disabled care spending overtaken by soaring demand", *Telegraph Media Group Limited,* 18th September 2014, [online] Available at: http://www.telegraph.co.uk/news/health/elder/11106637/Elderly-and-disabled-care-spending-overtaken-by-soaring-demand.html (Accessed 6th December 2014).

Birmingham South Central Clinical Commissioning Group (2014). *What are clinical commissioning groups?* [online] Available at: http://bhamsouthcentralccg.nhs.uk/what-are-ccgs (Accessed 14th February 2015).

Blanchard, D. (2010). *Supply Chain Management Best Practices*, 2nd Edition, New Jersey: John Wiley & Sons, Inc.

Blum, J. (2011). *Improving quality, lowering costs: the role of health care delivery system.* USA: Center for Medicare Management Available at: www.hhs.gov (Accessed 18th February 2015).

Boon-itt, S. and Pongpanarat, C. (2011). Measuring service supply chain management processes: the application of the q-sort technique. *International Journal of Innovation, Management, and Technology.* 2(3), pp. 217-221.

Bourlakis, M., Clear, F., and Patten, L. (2011). Understanding the UK hospital supply chain in an era of patient choice. *Journal of Marketing Management.* 27(3-4), pp. 401-423.

Bowen, T. and Payling, L. (1987). Expert systems for performance review. *Journal of the Operational Research Society.* 38(10), pp. 929-934.

Bowersox, D.J. and Daugherty, P.J. (1995) Logistics paradigms: the impact of information technology. *Journal of Business Logistics.* 16(1), pp. 65-80.

Bowersox, D.J., Closs, D.J., and Cooper, M.B. (2012). *Supply Chain Logistics Management,* 3rd Edition, New York: McGraw-Hill.

Boyce, M., Browne, J., and Greenhalgh, J. (2014). The experiences of professionals with using information from patient-reported outcome measures to improve the quality of healthcare: a systematic review of qualitative research. *BMJ Quality & Safety.* 23, pp. 508-518.

British Geriatrics Society & Age Concern (2002). *Implementation of the National Service Framework and Intermediate Care Seen from Geriatricians' and Older People's Perspectives.* London: BGS/ Age Concern.

Bryan, K., Gage, H., and Gilbert, K. (2006). Delayed transfers of older people from hospital: causes and policy implications. *Health Policy.* 76, pp. 194-201.

Burgess, K., Singh, P., and Koroglu, R. (2006). Supply chain management: a structured literature review and implications for future research. *International Journal of Operations & Production Management*. 26(7), pp. 703-729.

Butler, P. and Carter, H. (2011). "Liverpool to bear brunt of cuts as Merseyside councils slash services", *Guardian News and Media Limited,* 27th February 2011, [online] Available at: http://www.theguardian.com/society/2011/feb/27/liverpool-faces-toughest-budget-ever (Accessed 16th March 2012).

Butler, P. (2013). "Local council cuts will lead to skeleton service, warns Tory chair of LGA", *Guardian News and Media Limited,* 3rd July 2013, [online] Available at: file:///Users/rachelchamoun/Desktop/October%208%202013/Butler%202013.webarchive (Accessed 20th December 2013).

CSC Leading Edge Forum (2010). "The Future of Healthcare: It's health, then care". Falls Church, VA: Computer Science Corporation (CSC).

Calderdale Council and Yorkshire & Humber Joint Improvement Partnership (2010). Establishing best practice in reablement. [online] Available at: http://www.thinklocalactpersonal.org.uk/asset.cfm?aid=7588 (Accessed 14th December 2014).

Cameron, A. and Lart, R. (2003). Factors promoting and obstacles hindering joint working: a systematic review of the research evidence, *Journal of Integrated Care.* 11(2), pp. 9-17.

Cameron, A., Lart, R., Bostock, L., and Coomber, C. (2012). "Factors that promote and hinder joint and integrated working between health and social services", *Social Care*

Institute for Excellence, 2012 May, [online] Available at: http://www.scie.org.uk/publications/briefings/briefing41/ (Accessed 3rd January 2014).

Cammell, P. (2010). *Vulnerable Adults.* [online] Available at: http://www.knowsley.gov.uk/your-council/policies,-plans-and-strategies/people/health-and-social-care.aspx (Accessed 11th may 2012).

Campbell, D. (1975). Degrees of freedom and the case study. *Comparative Political Studies.* 8, pp. 178-185.

Cangiano, A. and Shutes, I. (2010). Ageing, demand for care and the role of the migrant care workers in the UK. *Journal of Population Ageing.* 3(1-2), pp. 39-57.

Care Quality Commission (2013). *The state of health care and adult social care in England in 2012/13.* [online]. London: The Stationary Office. Available at: www.cqc.org.uk (Accessed 30th December 2013).

Care and Support Bill 2012 (The United Kingdom of Great Britain and Northern Ireland). [online]. Available at: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_134740.pdf (Accessed 15th August 2012).

Care Services Efficiency Delivery (CSED) Programme (2007). *Homecare re-ablement workstream,* [online]. London: Department of Health. Available at: www.csed.csip.org.uk (Accessed 12th August 2012).

Care Services Efficiency Delivery (CSED) Programme (2010). *Homecare re-ablement CSSR scheme directory,* [online]. London: Department of Health. Available at: www.csed.csip.org.uk (Accessed 12th October 2011).

Care Services Efficiency Delivery (CSED) Programme (2011). *Rapid response services: intermediate tier, multi-disciplinary health and social care service.* [online]. London: National Institute for Health and Clinical Excellence. Available at: http://www.evidence.nhs.uk/search?q=rapid+response+services (Accessed 15th August 2012).

Carr-West, J. (2012). *Plugging the gap: the social care challenge.* [online] London: RSA Action and Research Centre Available at: www.thersa.org (Accessed 28th October 2013).

Carvel, J. (2012). *Driver to improve the dignity of older people in care* [online]. Available at: http://www.guardian.co.uk/society/2012/feb/28/dignity-care-older-people-nhs-keith-pearson (Accessed 12th March 2012).

Centers for Disease Control and Prevention (CDC) (2014). *Chronic Diseases and Health Promotion.* [online] Atlanta: Centers for Disease Control and Prevention National Center for Chronic Disease Prevention and Health Promotion Available at: www.cdc.gov (Accessed 16th July 2014).

Centre for Policy on Ageing (2011). *How can local authorities with less money support better outcomes for older people?* [online]. Available at: http://www.jrf.org.uk/sites/files/jrf/authorities-supporting-older-people-summary.pdf (Accessed 22nd January 2015).

Centre for Policy on Ageing (2013). *2013 Spending Review.* [online]. Available at: file:///Users/rachelchamoun/Desktop/Chapter%203-%20Adult%20social%20care/Centre%20for%20Policy%20on%20Ageing%20-%20Policies%20on%20Ageing%20-.webarchive (Accessed 19th July 2013).

Centre for Public Services (2004). *Modernising Social Services? Evidence from the Frontline.* [online]. Available at: http://www.european-services-strategy.org.uk/publications/essu-reports-briefings/modsocialservices/download-pdf.pdf (Accessed 7th July 2011).

Cesnik, B. and Kidd, M.R. (2010). History of health informatics: a global perspective. *Health Informatics.* pp. 3-8.

Chamoun, R. (2011, 31 May-5 June). *Barriers and Solutions to Homecare Re-ablement in England.* Paper presented at: European Academy of Management (EURAM) in Tallinn, Estonia.

Chartered Institute of Procurement & Supply (CIPS) (2015). *Supplier Relationship/Management.* [online]. Available at: http://www.cips.org/en/Knowledge/Procurement-topics-and-skills/SRM-and-SC-Management/Supplier-Relationship--Management/ (Accessed 17th February 2015).

Chassin, M.R. and Becher, E.C. (2002). The wrong patient. *Annals of Internal Medicine.* 136, pp. 826–33.

Chen, E.S., Mendonca, E.A., McKnight, L.K., Stetson, P.D., Lei, J., and Cimino, J.J. (2004). PalmCIS: a wireless handheld application for satisfying clinical information needs. *The Journal of American Medical Informatics.* 11, pp. 19-28.

Chen, K. and Ji, P. (2007). A genetic algorithm for dynamic advanced planning and scheduling (DAPS) with a frozen interval. *Expert Systems with Applications*. 33(4), pp. 1004–1010.

Chen, L.M., and Ayanian, J.Z. (2014). Care continuity and care coordination: What counts? *JAMA Internal Medicine.* 174(5), pp. 749-750.

Cheong, M.L.F., Bhatnagar, R., and Graves, S.C. (2005). Logistics network design with differentiated delivery lead-time: a chemical industry case study. *Research Collection School of Information Systems.* pp. 1-20.

Chow, H.K.H, Choy, K.L., Lee, W.B., and Chan, F.T.S. (2005). Design of a knowledge-based logistics strategy system. *Expert Systems with Applications.* 29, pp. 272-290.

Chow-Chua, C. and Goh, M. (2000). Quality improvement in the healthcare industry: some evidence from Singapore. *International Journal of Health Care Quality Assurance.* 13(5), pp. 223-229.

Christiansen, A. and Roberts, K. (2005). Integrating health and social care assessment and care management: findings from a pilot project evaluation. *Primary Health Care Research and Development.* 6, pp. 269-277.

Christopher, M. (1998). *Logistics and Supply Chain Management*, 2nd Edition, Great Britain: Prentice Hall.

Clarke, J. and Glendinning, C. (2002). "Partnership and the remaking of welfare governance," In: Glendinning, C., Powell, M., and Rummery, K. (eds.) "Partnerships: New Labour and the Governance of Welfare". Bristol: The Policy Press.

Clarkson, P. (2010). Performance measurement in adult social care: looking backwards and forwards. *British Journal of Social Work.* 40, pp. 170-187.

Clemons, E. and Row, M. (1991). Sustaining IT advantage: the role of structural differences. *MIS Quarterly,* 15(3), pp. 275-292.

Clohessy, L. (2013). *Prevention services in adult social care: reablement*. [web blog]. Available at: http://blogs.lse.ac.uk/socialcareevidenceinpractice/2013/02/21/prevention-services-in-adult-social-care-reablement/ (Accessed 16th October 2013).

Cochrane, A., McGilloway, S., Furlong, M., Molloy, D.W., Stevenson, M., and Donnelly, M. (2013). *Home care 're-ablement' services for maintaining and improving older adults' functional independence.* New Jersey: John Wiley & Sons, Ltd.

Cohen, L. and Manion, L. (1995). *Research Methods in Education.* London: Routledge.

Coleman, A. and Glendinning, C. (2004). Local authority scrutiny of health: making the views of the community count? *Health Expectations: An International Journal of Public Participation in Health Care & Health Policy*. 7(1), pp. 29-39.

Commission for Social Care Inspection (2009). *The state of social care in England 2007-08.* [online] London: Commission for Social Care Inspection. Available at: http://www.housinglin.org.uk/_library/Resources/Housing/Support_materials/Other_reports_and_guidance/The_state_of_social_care_in_England_2007-08.pdf (Accessed 15th March 2011).

College of Occupational Therapists (2013). "Reablement: The added value of Occupational Therapists". [online] Available at: www.cot.org.uk (Accessed 14th June 2014).

Committee on Patient Safety and Quality Improvement (2012). Standardization of practice to improve outcomes. *The American College of Obstetricians and Gynecologists*. 526, pp. 1081-1082.

Conroy, S. and Cooper, N. (2010). *Acute Medical Care of Elderly People.* [online] London: British Geriatrics Society. Available at: http://www.bgs.org.uk/index.php?option=com_content&view=article&id=44:gpgacutecare&catid=12:goodpractice&Itemid=106 (Accessed 10th November 2011).

Cookson, D., Read, C., Mukherjee, P., and Cooke, M. (2011). Improving the quality of emergency department care by removing waste using lean value stream mapping. *The International Journal of Clinical Leadership.* 17, pp. 25-30.

Cooper, M.C., Lambert, D.M., and Pagh, J.D. (1997). Supply chain management: more than a new name for logistics. *International Journal of Logistics Management.* 8(1), pp. 1-13.

Cooper, J., Lewis, R., and Urquhart, C. (2004). Using participant or non-participant observation to explain information behaviour. *Information Research.* 9(4), pp. 1-13.

Corbin, J. and Strauss, A. (1990). *Basics of Qualitative Research.* London: Sage Publications.

Cornwell, J., Levenson, R., Sonolo, L., and Poteliakhoff, E. (2012). *Continuity of Care for Older Hospital Patients: A call for action.* [online] London: The King's Fund. Available at: http://www.kingsfund.org.uk/sites/files/kf/field/field_publication_file/continuity-of-care-for-older-hospital-patients-mar-2012.pdf (Accessed 2nd February 2014).

Corsi, T., Grimm, C., and Patterson, K. (2003). Adopting new technologies for supply chain management. *Transportation Research Part E: Logistics and Transportation Review.* 39(2), pp. 95-121.

Council of Supply Chain Management Professionals (CSCMP). (2011). *CSCMP Supply Chain Management Definitions.* [online] Available at: http://cscmp.org/about-us/supply-chain-management-definitions (Accessed 12th March 2013).

Covinsky, K.E., Palmer, R.M., Fortinsky, R.H., Counsell, S.R., Stewart, A.L., Kresevic, D., Burant, C.J., Landefeld, C.S. (2003). Loss of independence in activities of daily living in older adults hospitalized with medical illnesses: increased vulnerability with age. *Journal of the American Geriatrics Society.* 51, pp. 451-458.

Cozens, A. (2013). "Adult social care could still face cuts", *Local Government Chronicle,* 27th June 2013, [online] Available at: http://m.lgcplus.com/5060359.article (Accessed 8th August 2014).

Crane, J. (2012). "Facility design: a catalyst for translational health science integration". [online] Available at: www.translationalhealthscience.com (Accessed 17th February 2015).

Creazza, A., Dallari, F, and Rossi, T. (2012). Applying an integrated logistics network design and optimisation model: the Pirelli Tyre case. *International Journal of Production Research.* 50(11), pp. 3021-3038.

Cressey, D. (1953) *Other People's Money.* Illinois: Free Press.

Curtis, D. (2013). *Partnership strategies for success in readmission prevention.* [online] USA: The Remington Report. Available at: http://remingtonreport.com/articles/rem_Medline%20Supplement_so13.pdf (Accessed 16th February 1015).

Dacosta-Claro, I. (2002). The performance of material management in health care organizations. *International Journal of Health Planning and Management.* 17(1), pp. 69-85.

Danese, P. (2011). Towards a contingency theory of collaborative planning initiatives in supply networks. *International Journal of Production Research.* 49(4), pp. 1081-1103.

Danity, P. (1991). Meaningful management research: the meaning of science
In: Danity, P. and Smith, C. (eds.) *The Management Research Handbook.* London: Routledge.

Daugherty, P.J., Chen, H., and Ferrin, B.G. (2011). Organizational structure and logistics service innovation. *The International Journal of Logistics Management.* 22(1), pp. 26-51.

Davies, M.A. and Tales, H. (2005). Enhancing patient safety through a standardized model of physiologic monitoring. *Healthcare Quarterly.* 8, pp. 49-52.

Davies, S., Goodman, C., Bunn, F., Victor, C., Dickinson, A., Iliffe, S., Gage, H., Martin, W., and Froggatt, W. (2011). A systematic review of integrated working between care homes and health care services. *BMC Health Services Research.* 11, pp. 320-340.

De Jonge, K.E., Jamshed, N., Gilden, D., Kubisiak, J., Bruce, S., and Taler, G. (2014). Effects of home-based primary care on medicare costs is high-risk elders. *The Journal of the American Geriatrics Society.* 62, pp. 1825-1831.

Denzin, N.K. and Lincoln, Y.S. (1994). *Handbook of Qualitative Research.* California: Sage Publications.

Department of Health (1998). *Modernising Social Services: Promoting Independence, Improving Protection, Raising Standards*- CM 4169. [online] London: The Stationary Office. Available at: http://webarchive.nationalarchives.gov.uk/+/www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4081593 (Accessed 15th March 2011).

Department of Health (2000). *The NHS Plan: a plan for investment, a plan for reform*- CM 4818-I. [online] London: Department of Health. Available at: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/@ps/documents/digitalasset/dh_118522.pdf (Accessed 15th March 2011).

Department of Health (2001). *National Service Framework for Older People.* [online] London: Department of Health. Available at: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4071283.pdf (Accessed 15th March 2011).

Department of Health (2002). *National service framework: surrounding implementation- Intermediate care: moving forward.* [online] London: Department of Health. Available at: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4065694.pdf (Accessed 15th March 2011).

Department of Health (2005). *Independence, Well-being and Choice: Our vision for the future of social care for adults in England.* [online] London: Department of Health. Available at: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4106478.pdf (Accessed 15th March 2011).

Department of Health (2006). *Our health, our care, our say: making it happen.* [online] London: Department of Health. Available at: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4140065.pdf (Accessed 15th March 2011).

Department of Health (2007). *Modernising Adult Social Care- what's working.* [online] London: Department of Health. Available at: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_076204.pdf (Accessed 9th November 2011).

Department of Health (2008). *End of life care strategy: Promoting high quality care for all adults at the end of life.* [online] London: Department of Health. Available at: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_086345.pdf (Accessed 9th November 2011).

Department of Health (2009). *NHS 2010-2015: from good to great. Preventative, people-centered, productive*- CM 7775. [online] London: Department of Health. Available at: http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_109876 (Accessed 9th November 2011).

Department of Health (2010). *£70 million support to help people in their homes after illness or injury,* [media release] London: Department of Health. Available at: http://webarchive.nationalarchives.gov.uk/+/www.dh.gov.uk/en/MediaCentre/Pressreleases/DH_120118#dhContent (Accessed 9th November 2011).

Department of Health (2010). *The operating framework for the NHS in England 2011/12.* [online] London: Department of Health. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/216187/dh_122736.pdf (Accessed 9th November 2011).

Department of Health (2010a). *A Vision for Adult Social Care: Capable Communities and Active Citizens.* [online] London: Department of Health. Available at: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/@ps/documents/digitalasset/dh_121971.pdf (Accessed 9th November 2011).

Department of Health (2010b). *Healthy Lives, Healthy People: Our strategy for public health in England*- CM 7985. [online] London: Department of Health. Available at: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_127424.pdf (Accessed 9th November 2011).

Department of Health (2011). *Transparency in outcomes: a framework for quality in adult social care- A response to the consultation and next steps*-CM 15715. [online] London: Department of Health. Available at: http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_125685.pdf (Accessed 17th February 2015).

Department of Health (2012). *The Health and Social Care Act 2012.* [online] London: Department of Health. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/138258/A3.-Factsheet-Overview-of-health-and-care-structures-240412.pdf (Accessed 9th November 2012).

Department of Health (2013). *The Care Bill*- CM 8627. [online] London: Department of Health. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/228864/8627.pdf (Accessed 17th June 2014).

DePhillips, H.A. (2007). Initiatives and barriers to adopting health information technology. *Dis Manage Health Outcomes.* 15(1), pp. 1-6.

de Vries, J. and Huijsman, R. (2011). Supply chain management in health services: an overview. *Supply Chain Management: An International Journal.* 16(3), pp. 166-175.

Dilnot, A. (2011). *Fairer Care Funding, The report of the Commission on Funding of Care and Support (Dilnot enquiry).* [online]
Available at: https://www.wp.dh.gov.uk/carecommission/files/2011/07/Fairer-Care-Funding-Report.pdf (Accessed 7th March 2012).

Di Martinelly, C., Riane, R., and Guinet, A. (2009). A Porter-SCOR modeling approach for the hospital supply chain.

Dodd, Z. and Allen, G. (2014). "Integrated health and social care services need the right workforce", *The Guardian,* 2nd January 2014, [online] Available at: file:///Users/rachelchamoun/Desktop/October%208%202013/Dodd%20and%20Allen%202014.webarchive (Accessed 15th March 2014).

Donchin, Y., Gopher, D., and Olin, M. (1995). A look into the nature and causes of human errors in the intensive care unit. *Critical Care Medicine.* 23, pp. 294-300.

Dooley, L. (2009). Make logistics the focus of your supply chain plan. *Materials Management in Health Care.* pp. 26-29.

Dowling, B., Powell, M., and Glenndining, C. (2004). Conceptualising successful partnerships, *Health and Social Care in the Community.* 12(4), pp. 309-317.

Downs, C. and McCarthy, B. (2013). *Statement on the health and social care Integration Transformation Fund.* 8th August 2013, [online] Available at:

http://www.local.gov.uk/c/document_library/get_file?uuid=b20e023f-fabb-4f46-b881-31bbe92e74a4&groupId=10180 (Accessed 3rd January 2014).

Doyle, Y. and Bull, A. (2000). Role of private sector in United Kingdom healthcare system, *British Medical Journal.* 321(7260), pp. 563-565.

Drake, P.R. and Davies, B.M. (2007). Approaches to commissioning home care from the independent sector. *International Journal of Public Sector Management.* 20(6), pp. 497-518.

Drange, M. (2012). "Home health care in crisis". *Times Union,* 13th July 2012, [online]. Available at: http://www.timesunion.com/local/article/Home-alone-3690863.php (Accessed 13th July 2012).

ECRI (2009). Communication. *Risk and Quality Management Strategies.* 17, pp. 1-19.

Eason, K. and Waterson, P. (2013). The implications of e-health system delivery strategies for integrated healthcare: lessons from England. *International Journal of Medical Informatics.* 82, pp. 96-106.

Eldercare Workforce Alliance (2014). *Care coordination.* [online] Available at: www.eldercareworkforce.org (Accessed 14th December 2014).

Elmuti, D., Khoury, G., Omran, O., and AbouZaid, A. (2013). Challenges and opportunities of health care supply chain management in the United States. *Health Marketing Quarterly.* 30(2), pp. 128-143.

Eng, T.Y. (2005). The influence of a firm's cross-functional orientation on supply chain performance. *Journal of Supply Chain Management.* 41(4), pp. 4-16.

Ettlet, S., Nolte, E., Thomson, S., and Mays, N. (2007). Capacity planning in health care: reviewing the international experience. *Euro Observer.* 9(1), pp. 1-4.

Eveborn, P., Rönnqvist, M., Einarsdóttir, H., Eklund, M., Lidén, K., and Almroth, M. (2009). Operation research improves quality and efficiency in home care. *Interfaces.* 39(1), pp. 18-34.

Exadaktylos, A.K., Evangelopoulos, D.S., Wullschleger, M., Bürki, L., and Zimmerman, H. (2008). Strategic emergency department design: an approach to capacity planning in healthcare provision in overcrowded emergency rooms. *Journal of Trauma Management & Outcomes.* 2, pp. 11-19.

Fabbricotti, I.N., Janse, B., Looman, W.M., de Kuijer, R., van Wijngaarden, J.D.H., and Reiffers, A. (2013). Integrated care for frail elderly compared to usual care: a study protocol of a quasi-experiment on the effects on the frail elderly, their caregivers, health professionals and health care costs. *BMC Geriatrics.* 13(31), pp. 2-12.

Faulkner, A. and Sweeney, A. (2011). *Prevention in adult safeguarding: A review of the literature.* [online] London: Social Care Institute for Excellence Available at: http://www.scie.org.uk/publications/reports/report41/ (Accessed 3rd February 2014).

Fiegel, C. (2013). Hospitals innovate to avoid readmissions penalties. *Hospitalist News.* 6(12), pp. 14.

Finance & NHS Directorate, Procurement, Investment & Commercial (PICD), (2014). *NHS eProcurement Strategy*. [online] London: Department of Health. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/344574/NHS_eProcurement_Strategy.pdf (Accessed on 2nd January, 2015).

Finley, T., Irby, D., Nibbs, A., and Williams, L. (1997) Logistics integration: the effect of information technology, team composition, and corporate competitive positioning. *Journal of Business Logistics.* 18(2), pp. 31-41.

Ford, E. and Scanlon, D. (2007). Promise and problems with supply chain management approaches to health care purchasing. *Health Care Management Review.* 32(3), pp. 192-202.

Forder, J. (2007). *Self-funded social care for older people: an analysis of eligibility, variations and future projections.* [online] London: Commission for Social Care

Inspection. Available at: http://www.pssru.ac.uk/pdf/dp2505.pdf (Accessed 9th November 2011).

Foster, S.T., Wallin, C., and Ogden, J. (2011). Towards a better understanding of supply chain quality management practices. *International Journal of Production Research.* 49(8), pp. 2285-2300.

Francis, J., Fisher, M., and Rutter, D. (2011). *Reablement: a cost-effective route to better outcomes* [online] London: Social Care Institute for Excellence. Available at: http://www.scie.org.uk/publications/briefings/files/briefing36.pdf (Accessed 3rd February 2012).

Fredendall, L.D. and Hill, E. (2001). *Basics of supply chain management.* London: St. Lucie Press.

Frimpong, J.A., Jackson, B.E., Stewart, L.M., Singh, K.P., Rivers, P.A., and Bae, S. (2013). Health information technology capacity at federally qualified health centers: a mechanism for improving quality of care. *BMC Health Services Research.* 13, pp. 35-47.

Frohlich, M. and Westbrook, R. (2001). Arcs of integration: an international study of supply chain strategies. *Journal of Operations Management.* 19(2), pp. 185-200.

Fullerton, K.J. and Crawford, V.L.S. (1999). The winter bed crisis- quantifying seasonal effects on hospital bed usage. *QJM: An International Journal of Medicine.* 92, pp. 199-206.

Gans, D., Kralewski, J., Hammons, T., and Dowd, B. (2005). Medical groups' adoption of electronic health records and information systems. *Health Affairs.* 24, pp. 1323-1333.

Garrett, P., Brown, A., Hart-Hester, S., Hamadain, E., Dixon, C., Pierce, W., and Rudman, W. (2006). Identifying barriers to the adoption of new technology in rural hospitals: a case report. *Perspectives in Health Information Management.* 3(9), pp. 1-11.

Genet, N., Boerma, W., Kringos, D., Bouman, A., Francke, A., Fagerström, C., Melchiorre, M., Greco, C., and Devillé, W. (2011). Home care in Europe: a systematic literature review. *BMC Health Services Research.* 11, pp. 207-219.

Georgise, F., Thoben, K.D. and Seifert, M. (2012). Adapting the SCOR model to suit the different scenarios: a literature review & research agenda. *International Journal of Business and Management.* 7(6), pp. 2-17.

Ghiani, G., Laporte, G., and Musmanno, R. (2004). "Introduction to logistics systems planning and control". Sussex: John Wiley & Sons Ltd.

Giannakis, M. and Croom, S. (2004). Toward the development of a supply chain management paradigm: A conceptual framework. *Journal of Supply Chain Management*, 40(2), pp. 27–37.

Giannakis, M. (2010). Conceptualizing and managing service supply chain. *The Service Industries Journal.* 31(11), pp. 1809-1823.

Gibson, B.J., Mentzer, J.T. and Cook, R.L. (2005). Supply chain management: the pursuit of a consensus definition. *Journal of Business Logistics*. 26(2), pp. 17-25.

Giddens, A. (1976). *New Rules of Sociological Method.* London: Hutchinson.

Gill, J. and Johnson, P. (1997) *Research Methods for Managers.* 2nd Edition. London: Sage Publications.

Gillies, R.R., Chenok, K.E., Shortell, S.M., Pawlson, D., and Wimbush, J.J. (2006). The impact of health plan delivery system organization on clinical quality and patient satisfaction. *Health Services Research.* 41, pp. 1181-1199.

Gladden, R. and Cuthel, B. (2013). "How Liverpool is integrating health and social care", *Health Service Journal,* 8th July 2013, [online], Available at: http://m.hsj.co.uk/5060143.article (Accessed 8th September 2014).

Glasby, J. and Littlechild, R. (2004). *The Health and Social Care Divide: The Experiences of Older People.* UK: Policy Press.

Glasby, J., Martin, G., and Regen, E. (2008). Older people and the relationship between hospital services and intermediate care: Results from a national evaluation. *Journal of Interprofessional Care,* 22(6), pp. 639-649.

Glasby, J. (2012). *Understanding Health and Social Care,* 2nd Edition. UK: Policy Press.

Glasby, J., Miller, R., Lynch, J. (2013). "Turning the welfare state upside down? Developing a new adult social care offer", Policy Paper 15 [online]. Birmingham City Council, University of Birmingham, Birmingham. Available at: http://www.birmingham.ac.uk/Documents/college-social-sciences/social-policy/HSMC/publications/PolicyPapers/policy-paper-fifteen.pdf (Accessed 8th January 2014).

Glaser, B. and Strauss, A. (1967). *The discovery of grounded theory: Strategies for qualitative research.* Chicago: Aldine.

Glendinning, C. (2003). Breaking down barriers: integrating health and social care services for older people in England. *Health Policy.* 65(2), pp. 139-151.

Glendinning, C. and Newbronner, E. (2008). The effectiveness of home care reablement-developing the evidence base. *Journal of Integrated Care.* 16(4), pp. 32-39.

Glendinning, C., Jones, K., Baxter, K., Rabiee, P., Curtis, L., Wilde, A., Arksey, H., and Forder, J. (2010). "Home Care Re-ablement Services: Investigating the longer-term impacts (prospective longitudinal study)", Working Paper No. DHR 2438 [online]. Social Policy Research Unit, University of York, York. Available at: http://www.york.ac.uk/inst/spru/research/pdf/Reablement.pdf (Accessed 15th June 2011).

Godden, S., McCoy, D., and Pollock, A.M. (2009). Policy on the rebound: trends and causes of delayed discharges in the NHS. *Journal of the Royal Society of Medicine.* 102(1), pp. 22-28.

Guba, E.G. and Lincoln, Y.S. (1989). *Fourth Generation Evaluation*. California: Sage.

Gurses, A.P. and Xiao, Y. (2006). A systematic review of the literature on multidisciplinary rounds to design information technology. *Journal of the American Medical Informatics Association.* 13(3), pp. 267-276.

Ham, C., Dixon, A., and Brooke, B. (2012). *Transforming the Delivery of Health and Social Care: The case for fundamental change.* [online] London: The King's Fund. Available at: http:/www.kingsfund.org.uk/sites/files/kf/field/field_publication_file/transforming-the-delivery-of-health-and-social-care-the-kings-fund-sep-2012.pdf (Accessed 2nd February 2014).

Harris, E. (2008). *Action Research* In: Thorpe, R. and Holt, R. (2008). *The SAGE Dictionary of Qualitative Management Research.* London: Sage Publications Ltd.

Hartley, J. (1994). Case Studies in Organizational Research In: Casell and Simon (1994) *Qualitative Methods in Organizational Research.* London: Sage Publications Ltd.

Haux, R. (2006). Individualization, globalization and health- about sustainable information technologies and the aim of medical informatics. *International Journal of Medical Informatics.* 75, pp. 795-808.

Hayes, S.L., Mann, M.K., Morgan, F.M., Kelly, M.J., and Weightman, A.L. (2012). Collaboration between local health and local government agencies for health improvement. *Cochrane Database of Systematic Reviews.* 10.

Health and Social Care Act 2012 (The United Kingdom of Great Britain and Northern Ireland). [online]. Available at: http://www.legislation.gov.uk/ukpga/2012/7/contents/enacted (Accessed 9th September 2012).

Heinbuch, S.E. (1995). A case of successful technology transfer to health care: Total quality materials management and just-in-time. *Journal of Management in Medicine.* 9(2), pp. 48-56.

Hennell, S. and Tomlin, P. (2013). *The journey towards integration.* [online]. Available at:

https://www.wirralccg.nhs.uk/Downloads/AboutUs/Vision2018/IntegratedCareWorkstreamPresentation.pdf (Accessed 14th July 2014).

Henwood, K.L. and Pidgeon, N.F. (1993). Qualitative research and psychological theorizing
In: Hammersley, M. (eds.) *Social Research: Philosophy, Politics & Practice*. Sage Publications, pp. 14-33.

Hermon, P. (2003). An introduction to the supply chain council's SCOR methodology. *Business Process Trends.*

Heywood, F. and Turner, L. (2007). *Better outcomes, lower costs: implications for health and social care budgets of investment in housing adaptations, improvements and equipment: a review of evidence.* London: Stationary Office.

Hibberd, J. (2008). The home-visiting process for older people in the in-patient intermediate care services. *Quality in Ageing and Older Adults.* 9(1), pp. 13-23.

Hill, A. (2011). "Social care failing disabled over 65s, says report", *Guardian News and Media Limited,* 29th May, 2011, [online] Available at: http://www.theguardian.com/society/2011/may/30/social-car-failing-disabled-pensioners-says-report (Accessed 14th February 2015).

Hoaglin, D.C., Light, R.J., Mcpeak, B., Mosteller, F., and Stotot, M.A. (1982). *Data for Decisions: Information Strategies for Policymakers,* Cambridge: Abt Books.

Hook, J.M., Grant, E., and Samarth, A. (2010). "Health information technology and health exchange implementation in rural and undeserved areas: Findings from the AHRQ Health IT portfolio". Agency for Healthcare Research and Quality, U.S. Department of Health and Human Services.

Hopson, C. (2013). "Health and social care integration: how do we make it work?", *Guardian News and Media Limited,* 18th September 2013, [online] Available at: file:///Users/rachelchamoun/Desktop/October%208%202013/Hopson%202013.webarchive (Accessed 10th November 2013).

Horner, M.W. and O'Kelly, M.E. (2001). Embedding of economies of scale concepts for hub network design. *Journal of Transport Geography.* 9, pp. 255-265.

Houghton, C., Casey, D., Shaw, D., Murphy, K. (2013). Rigour in qualitative case-study research. *Nurse Researcher.* 20(4), pp. 12-17.

House of Commons Health Committee (2012). *Social Care. Fourteenth Report of Session 2010-12.* [online]. London: The Stationary Office Limited. Available at: http://www.publications.parliament.uk/pa/cm201012/cmselect/cmhealth/1583/1583.pdf (Accessed 14th May 2012).

House of Commons Committee of Public Accounts (2014). *Adult social care in England: Sixth Report of Session 2014-15.* [online]. London: The Stationary Office Limited. Available at: http://www.publications.parliament.uk/pa/cm201415/cmselect/cmpubacc/518/51802.htm (Accessed 2nd November 2014).

Hoyt, R. (2014). Benefits of switching to an electronic health record (EHR). *Health Informatics.* pp. 1-4.

HM Government (2000). *Local Government Act 2000.* [online] London: HM Government. Available at: http://www.legislation.gov.uk/ukpga/2000/22/pdfs/ukpga_20000022_en.pdf (Accessed 18th February 2015).

HM Government (2007). *Putting people first: A shared vision and commitment to the transformation of adult social care.* [online] London: HM Government. Available at: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_081119.pdf (Accessed 9th November 2011).

HM Government (2009). *Shaping the Future of Care Together*- CM 7673. [online]. London: HM Government. Available at: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_102732.pdf (Accessed 9th November 2011).

HM Government (2012). *Caring for our future: reforming care and support.* [online] London: HM Government. Available at:

http://c15024310.r10.cf2.rackcdn.com/Caring_For_Our_Future.pdf (Accessed 12 August 2012).

Huan, S., Sheoran, S.K., and Wang, G. (2004). A review and analysis of supply chain operations reference (SCOR) model. *Supply Chain Management: An International Journal.* 9(1), pp. 23-29.

Huang, S.H., Sheoran, S.K., and Keskar, H. (2005). Computer-Assisted Supply Chain Configuration Based on Supply Chain Operations Reference (SCOR) Model. *Computers and Industrial Engineering.* 48(2), pp. 377–394.

Hudson, S. (2004). *The SCOR Model for Supply Chain Strategic Decisions.* SCRC Article Library: The SCOR Model for Supply Chain Strategic Decisions.

Hughes, C. (2014). "St. Peter's Health Partners doctors make house calls", *The Hearst Corporation,* 4th March 2014, [online] Available at: http://www.timesunion.com/local/article/St-Peter-s-Health-Partners-doctors-make-house-5289430.php (Accessed 15th June 2014).

Hunt, L. (2014). Test and learn: working towards integrated services. *Nursing Older People.* 26(7), pp. 16-20.

Hyde, K.F. (2000). Recognizing deductive processes in qualitative research. *Qualitative Market Research: An International Journal.* 3(2), pp. 82-90.

Imison, C., Poteliakhoff, E., and Thompson, J. (2012). *Older people and emergency bed use.* [online]. London: The King's Fund. Available at: http://www.kingsfund.org.uk/sites/files/kf/field/field_publication_file/older-people-and-emergency-bed-use-aug-2012.pdf (Accessed 14th February 2015).

Institute for Healthcare Improvement (2005). *Going Lean in Health Care*. White Paper. Boston, MA: Institute for Healthcare Improvement.

Isden, R., Norton, M., and Abrahams, C. (2013). *The 'Dilnot social care cap': making sure it delivers for older people.* [online] London: Age UK Available at:

http://www.ageuk.org.uk/documents/en-gb/press%20releases/implementing%20the%20dilnot%20social%20care%20cap.pdf?dtrk=true (Accessed 10th November 2014).

Ismail, S., Thorlby, R., and Holder, H. (2014). *Focus on: Social care for older people.* [online] UK: The Health Foundation and Nuffield Trust Available at: http://www.nuffieldtrust.org.uk/sites/files/nuffield/publication/140326_qualitywatch_focus_on_social_care_older_people_0.pdf (Accessed 22 February 2015).

Jackson, K. (2003). Connecting for health: rallying for the personal electronic medical record. *For the Record.* 15(18), pp. 16-19.

Jarrett, P.G. (1998). Logistics in the health care industry. *International Journal of Physical Distribution & Logistics Management.* 28(9), pp. 741-772.

Jarrett, P.G. (2006). An analysis of international health care logistics. *Leadership in Health Services.* 19(1), pp. 1-10.

Jayaratna, N. (1994). *Understanding and evaluating methodologies.* London: McGraw-Hill.

Jimmerson, C., Weber, D. and, Sobek, D.K. Reducing waste and errors: piloting lean principles at Intermountain Healthcare. *Joint Commission Journal on Quality and Patient Safety.* 31(5), pp. 249-257.

Johnson, D. (1994). *Research Methods in Educational Management.* Essex: Longman Group.

Johri M., Béland F., and Bergman H. (2003). International experiments in integrated care for the elderly: a synthesis of the evidence. *International Journal of Geriatric Psychiatry.* 18(3), pp. 222– 225.

Joint Commission International (2009). Robert Wood Johnson Foundation [online]. Available at: www.jointcommissioninternational.org (Accessed 14th July 2014).

Joint Strategic Needs Assessment (2008). *Older People.* [online] Available at: http://www.wirral.nhs.uk/document_uploads/JNSA/6OlderPeopleSept08.pdf (Accessed 8th September 2011).

Jones, N. and Thomas, P. (2007). Inter-organizational Collaboration and Partnerships in Health and Social Care- The Role of Social Software. *Public Policy and Administration.* 22(3), pp. 289-302.

Jones, K. Baxter, K., Curtis, L., Arksey, H., Forder, J., Glendinning, C., and Rabiee, P. (2009). *The Short-term Outcomes and Costs of Home Care Re-ablement Services: Interim Report,* Investigating the Longer Term Impact of Home Care Re-ablement Services, [online] Social Policy Research Unit, York: University of York. Available at: http://www.york.ac.uk/inst/spru/research/pdf/ReablementOutcomes.pdf (Accessed 15th March 2011).

Judd, R.G. and Moore, B.A. (2011). Aging in poverty: Making the case for comprehensive care management. *Journal of Gerontological Social Work.* 54(7), pp. 647-658.

Kaehne, A. (2013). Partnerships in local government: The case of transition support services for young people with learning disabilities. *Public Management Review,* 15(5), pp. 611-632.

Kaiser, W. (2014). *Transforming dementia care-the health & housing perspective.* [online] Available at: www.adass.org.uk (Accessed 29th November 2014).

Kane, R. (1999). Goals of home care: therapeutic, compensatory, either, or both? *Journal of Aging and Health.* 11(3), pp. 299-321.

Kasi, V. (2005). "Systematic assessment of SCOR for modeling supply chains". Proceedings of the 38th Hawaii International Conference on System Sciences.

Kaplan, B. and Maxwell, J. (1994). *Qualitative research methods for evaluating computer information systems.* California: Sage Publications.

Kaushal, R., Blumenthal, D., and Poon, E. (2005). The costs of a national health information network. *Annals of Internal Medicine.* 143(3), pp. 165-173.

Kazandjian, V.A. and Lipitz-Snyderman, A. (2010). HIT or Miss: the application of health care information technology to managing uncertainty in clinical decision making. *Journal of Evaluation in Clinical Practice.* 17, pp. 1108-1113.

Kendrick, S. (1996). The pattern of increase in emergency hospital admissions in Scotland. *Health Bulletin.* 54, pp. 169-183.

Kent, J., Payne, C., Stewart, M., and Unell, J. (2000). "External Evaluation of the home are reablement pilot project". Leicestershire County Council, De Montfort University, Leicester. Available at: http://www.scie-socialcareonline.org.uk/leicestershire-county-council-external-evaluation-of-the-home-care-reablement-pilot-project/r/a11G00000017zziIAA (Accessed 20th January 2015).

Kholeif, A.O., Kader-Abdel, M.G., and Sherer, M. (2008). *Enterprise Resource Planning.* New York: Palgrave Macmillian.

Kielmann, K. (2012). *The ethnographic lens* In Gilson, L. (2012). *Health policy and systems research: a methodology reader.* Alliance for Health Policy and Systems Research, World Health Organization.

Kim, C.S., Spahlinger, D.A., Kin, J.M., and Billi, J.E. (2006). Lean health care: What can hospitals learn from a world-class automaker? *Society of Hospital Medicine.* pp. 191-199.

Klein, R. and Rai, A. (2009). Interfirm strategic information flows in logistics supply chain relationships. *MIS Quarterly,* 33(4), pp. 735-762.

Kleinau, E. (2000). "Management of health information systems In: Lippeveld, T. Sauerborn, R., and Bodart, C. (2000). "Design and implementation of health information systems". France: World Health Organization.

Knowsley Clinical Commissioning Group (2013). Governing Body Meeting. Meeting at the Old School House, St Johns Road, Huyton.

Knowsley Council (2012). *Knowsley local plan: Monitoring report 2012.* [online] Available at: http://www.knowsley.gov.uk/pdf/monitoring-report-2012.pdf (Accessed 12th November 2014).

Kodner, D. and Kay Kyriacou, C. (2000). Fully integrated care for frail elderly: two American models. *International Journal of Integrated Care.* 1(1), pp. 1-19.

Kodner, D.L. and Spreeuwenberg, C. (2002). Integrated care: meaning, logic, applications, and implications- a discussion paper. *International Journal of Integrated Care.* 2, pp.1-6.

Kodner D. (2002). The quest for integrated systems of care for frail older persons. *Aging Clinical and Experimental Research*. 14(4), pp. 307–313.

Kodner D. (2004) Beyond care management: the logic and promise of vertically integrated systems of care for the frail elderly. In: M. Knapp, D. Challis, J. Fernandez and A. Netten (Eds) Long-Term Care: Matching Resources to Needs, pp. 101– 118. Ashgate, Aldershot.

Kodner, D. (2006). Whole-system approaches to health and social care partnerships for the frail elderly: an exploration of North American models and lessons. *Health and Social Care in the Community.* 14(5), pp. 384-390.

Kohn, L.T., Corrigan, J.M., and Donaldson, M.S. (2000). *To Err is Human: Building a safer health system.* Institute of Medicine Report on Medical Errors. Washington, D.C.: National Academy Press.

Kolb, D.A. (1984). *Experiential learning: Experience as the source of learning and development.* New Jersey: Prentice-Hall.

Korosec, R. (2003). Assessing the feasibility of supply chain management within purchasing and procurement: results from U.S. cities. *Public Performance & Management Review.* 27(2), pp. 92-109.

Korpela, J., Elfvengren, K., Kaarna, T., Tepponen, M., and Tuominen, M. (2012). Collaboration process for integrated social and health care strategy implementation. *International Journal of Integrated Care.* 12, pp. 1-11.

Kovács, G. and Spens, K.M. (2005). Abductive reasoning in logistics research. *International Journal of Physical Distribution and Logistics Management,* 35(2), pp. 132-144.

Kumar, R., Singh, R.K., and Shankar, R. (2013). Study on coordination issues for flexibility in supply chain SMEs: A case study. *Global Journal of Flexible Systems Management.* 14(2), pp. 81-92.

Kuperman, G.J. and Gibson, R.F. (2003). Computer physician order entry: benefits, costs, and issues. *Annals of Internal Medicine.* 139, pp. 31-40.

Kvale, S. (1996) *Interviews: An introduction to qualitative research interviewing.* California: Sage Publications.

Lambert, D.M., Cooper, M.C., and Pagh, J.D. (1998). Supply chain management: implementation issues and research opportunities. *International Journal of Logistics Management.* 9(2), pp. 1-19.

Landefeld, C.S. (2003). Training in the Care of Older Adults. *Journal of General Internal Medicine.* 18(9), pp. 770-771.

Langabeer, J.R. (2007). *Health Care Operations Management: A Quantitative Approach to Business And Logistics.* London: Jones and Bartlett Publishers International.

Lapadat, J.C. and Lindsay, A.C. (1999). Transcription in Research and Practice: From Standardization of Technique to Interpretive Positionings. *Qualitative Inquiry.* 5(1), pp. 64-86.

Law Commission (2011). *Adult social care no. 326 HC 941 May.* London: HMG.

Lawton, R. and `, D. (2002). Barriers to incident reporting in a healthcare system. *Quality & Safety in Healthcare.* 11, pp. 15-18.

Le Mesurier, N. and Cumella, S. (1999). Enhancing independence: the effectiveness of re-ablement provision in South Worcestershire. *Journal of Integrated Care,* 7(4), pp. 27-32.

Lean Production at Park Nicollet (2005). Available at: www.parknicollet.com/media/leanProduction.cfm. (Accessed on 7th April 2014).

Leape, L.L., Brennan, T.A., and Laird, N. (1991). The nature of adverse events in hospitalized patients. *New England Journal of Medicine.* 324, pp. 377-384.

Leape, L.L. (2000). Reporting of medical errors: time for a reality check. *Quality in Healthcare.* 9, pp. 144-145.

Lee, T.H. and Berenson, R.A. (2008). "The Organization of Health Care Delivery- A Roadmap for Accelerated Improvement". [online] In Center for American Progress and the Institute on Medicine as a Profession. *The Health Care Delivery System: A Blueprint for Reform.* Washington, D.C., pp. 32-49. Available at: http://www.americanprogress.org/wp-content/uploads/issues/2008/10/pdf/health_delivery_full.pdf (Accessed 7th June 2010).

Lee, H.L. (2000), Creating value through supply chain integration, *Supply Chain Management Review*. 4(4), pp. 30-36.

Lee, S.M., Lee, D., and Schniederjans, M.J. (2011). Supply chain innovation and organizational performance in the healthcare industry. *International Journal of Operations & Production Management.* 31(11), pp. 1193-1214.

Leeds City Council (2013). *Support organisations and neighbourhood network schemes.* [online] Available at: http://www.leeds.gov.uk/residents/Pages/Support-organisations-and-neighbourhood-network-schemes.aspx (Accessed on 22 January 2015).

Leurs, M.T.W., Mur-Veeman, I.M., van der Sar, R., Schlaama, H.P., and de Vries, N.K. (2008). Diagnosis of sustainable collaboration in health promotion- a case study. *BMC Public Health.* 8, pp. 382-397.

Leutz, W. (1999). Reflections on integrating medical and social care. *The Milibank Quarterly.* 77(1), pp. 77–110.

Lewin, G., Calver, J., McCormack, B., Coster, C., O'Connell, H., Wheeler, B., Smith, J., and Vandermeulen, S. (2008). The home independence project. *Geriatrician,* 26(3), pp. 13-20.

Lewin, G.F., Alfonso, H.S., and Alan, J.J. (2013). Evidence for the long term cost effectiveness of home care reablement programs, *Clinical Interventions in Aging.* 8, pp. 1273-1281.

Lewis, I. and Talalayevsky, A. (1997) Logisitcs and information technology: a coordination perspective. *Journal of Business.* 18(1), pp. 141-157

Lewis, H. and Mine, A. (2000) *Taking Prevention Forward: A Directory of Examples,* In Rabiee, P. and Glendinning, C. (2011). Organisation and delivery of home care re-ablement: what makes a difference? *Health and Social Care in the Community.* 19(5), pp. 495-503.

Lewis, P., Saunders, M., and Thornhill, A. (2007). *Research Methods for Business Students.* 4th Edition. Harlow: FT Prentice Hall.

Li, L., Su, Q., and Chen, X. (2011). Ensuring supply chain quality performance through applying the SCOR model. *International Journal of Production Research.* 49(1), pp. 33-57.

Liu, S., Kasturiratne, D., and Moizer, J. (2012). A hub-and-spoke model for multi-dimensional integration of green marketing and sustainable supply chain management. *Industrial Marketing Management.* 41, pp. 581-588.

Liu, W.H. and Xie, D. (2012). Quality decision of the logistics service supply chain with service quality guarantee. *International Journal of Production Research.* 51(5), pp. 1618-1634.

Local Government Association, (2013). " Better Care Fund (BCF) Support and Resources Pack for Integrated Care", [online] Available at: http://www.england.nhs.uk/wp-content/uploads/2013/12/bcf-itf-sup-pck.pdf (Accessed on 14th November 2014).

Lockamy, A. and McCormack, K. (2004). Linking SCOR planning practices to supply chain performance. *International Journal of Operations & Production Management.* 24(12), pp. 1192-1218.

London Councils (2013). "A case for sustainable funding for adult social care", [online] Available at: http://www.ey.com/Publication/vwLUAssets/A-case-for-sustainable-funding-for-adult-social-care/$FILE/1513_LC_Adult_Social_Care6.pdf (Accessed on 8th January 2013).

Lummus, R., Krumwiede, and D., Vokurka, R. (2001). The relationship of logistics to supply chain management: developing a common industry definition. *Industrial Management & Data Systems.* 101(8), pp. 426-432.

Lymbery, M. (2010). A new vision for adult social care? Continuities and change in the care of older people. *Critical Social Policy.* 30(1), pp. 5-26.

Lynn, J. (2013). Reliable and sustainable comprehensive care for frail elderly people, *Journal of the American Medical Association.* 310(18), pp. 1935-1936.

Malin, J.H. (2006). Knowing the SCOR: Using Business Metrics to Gain Measurable Improvements. *Healthcare Financial Management.* 60(7), pp. 54–59.

Mantgani, A. (2014). *Vision 2018- Planning how health and social care will look in Wirral by 2018.* Wirral Clinical Commissioning Group. 12th February 2014, [online] Available at:

https://www.wirralccg.nhs.uk/Downloads/AboutUs/Vision2018/Vision2018Presentation.pdf (Accessed 14th July 2014).

Manthorpe, J. (2011). Long-term impact of home care reablement. *Community Care.* 1880, pp. 1-5.

Manzano-Santaella, A. (2010). From bed-blocking to delayed discharges: precursors and interpretations of a contested concept. *Health Services Management Research.* 23, pp. 121-127.

Marsh, P., Fisher, M., Mathers, N., and Fish, S. (2005). *Developing the evidence base for social work and social care practice.* [online] London: Social Care Institute for Excellence Available at: www.scie.org.uk (Accessed 15th December 2014).

McGinn, M. (2008). *Secondary Data* In Given, L. (Ed.), *The Sage Encyclopedia of Qualitative Research Methods.* California: Sage Publications.

McKone-Sweet, K.E., Hamilton, P., and Willis, S.B. (2005). The ailing healthcare supply chain: a prescription for change. *Journal of Supply Chain Management.* 41(1), pp. 4-17.

McLaughlin, H. and Shardlow, S.M. (2009). Different cultures different ethics? Research governance and social care. *Ethics & Social Welfare.* 3(1), pp. 4-17 In:Woolham, J. (2011). *Research governance and ethics for adult social care research: procedures, practices and challenges.* London: NIHR School for Social Care Research.

McLeod, B. and Mair, M. (2009). Evaluation of City of Edinburgh Council Home Care Reablement Service [online]. Edinburgh: Scottish Government Social Research; 2009. Available at: http://www. scotland.gov.uk/Publications/2009/11/25100200/0 (Accessed 26th June 2014).

McNeil, C. and Hunter, J. (2014). The Generation Strain: Collective Solutions to Care in an Ageing Society. *Institute for Public Policy Research.*

Mejiboom, B., de Haan, J., and Verheyen, P. (2004). Networks for integrated care provision: an economic approach based on opportunism and trust. *Health Policy.* 69, pp. 33-43.

Melis, J.F., Rikkert, M.G.M., Parker, S.G., and van Eijken, M.I.J. (2004). What is intermediate care?, *British Medical Journal.* 329, pp. 360-361.

Mendonca, E.A., Chen, E.S., Stetson, P.D., McKnight, L.K., Lei, J., and Cimino, J.J. (2004). Approach to mobile information and communication for health care. *International Journal of Medical Informatics.* 73, pp. 631-638.

Mentzer, J., DeWitt, W., Keebler, J.S., Min, S., Nix, N.W., Smith, C.D., and Zacharia, Z.G. (2001). Defining supply chain management. *Journal of Business Logistics.* 22(2), pp. 1-26.

Mertens, D.M. (1998) *Research Methods in Education and Psychology: Integrating Diversity with Quantitative and Qualitative Approaches.* California: Sage Publications.

Mettler, T. and Rohner, P. (2009). Supplier relationship management: a case study in the context of health care. *Journal of Theoretical and Applied Electronic Commerce Research.* 4(3), pp. 58-71.

Meyr, H., Rohde, J., Wagner, M., and Wetterauer, U. (2005). Architecture of selected APS. *Supply Chain Management and Advanced Planning.* Pp. 341-353.

Miller, E. (2013). "Embedding outcomes in the reablement model in North Lanarkshire". [online]. Economic and Social Research Council, University of Strathclyde. Available at: http://www.google.com/search?q=miller+university+of+strathclyde+embedding+outcomes&client=safari&rls=en&oe=UTF-8&oq=&gs_l= (Accessed 11th November 2014).

Min, H. and Zhou, G.(2002). Supply chain modeling: past, present and future. *Computers & Industrial Engineering.* 43(1-2), pp. 231-249.

Mishler, E. (1984). *The Discourse of Medicine: Dialectics of Medical Interviews.* Ablex.

Monitor (2014). "Integrated care: how to comply with Monitor's requirements", [online] Available at: https://www.gov.uk/government/organisations/monitor (Accessed on 5th January 2015).

Moon, C., Kim, J.S., and Gen, M. (2004). Advanced planning and scheduling based on precedence and resource constraints for e-plant chains. *International Journal of Production Research.* 42(15), pp. 2941-2955.

Moore, D. and Jones, K. (2012). *Social Work and Dementia.* London: Sage Publications, Ltd.

Morse, A. (2013). "Emergency admissions to hospital: managing the demand"*, National Audit Office,* [online] Available at: http://www.nao.org.uk/report/emergency-admissions-hospitals-managing-demand/ (5th July 2014).

Morse, A. (2014). "Adult social care in England: overview", *National Audit Office,* [online] Available at: http://www.nao.org.uk/report/adult-social-care-england-overview-2/ (Accessed 2nd November 2014).

Mur-Veeman, I., Hardy, B., Steenbergen, M., and Wistow, G. (2003). Development of Integrate Care in England and the Netherlands: Managing across public-private barriers. *Health Policy,* 65, pp. 227-241.

Murray, K. (2013). "Social care: under pressure like never before", *Guardian News and Media Limited,* 16th October 2013, [online] Available at: http://www.theguardian.com/profile/kate-murray/2013/oct/16/all (Accessed 3rd January 2014).

My Home Care Information (2014). [online] Available at: http://www.myhomecareservices.co.uk/about-my-home-care-services (Accessed 6th June 2014).

Myers, M.D. (1997). *Qualitative research in information systems.* [online] MISQ Discovery Available at: http://www.misq.org/discovery/MISQ_isworld/ [Accessed 6th August 2010].

Myers, P. and Barnes, J. (2005). *Qualitative Research Methods in Sure Start local Programme Evaluations: An Introduction.* [online] National Evaluation of Sure Start Institute for the Study of Children, Families & Social Issues. Available at: http://www.ness.bbk.ac.uk/support/GuidanceReports/documents/859.pdf [Accessed 9th February 2011].

N.A. (2011). "Care for the elderly: An age-old problem", *The Economist,* 26th May 2011, [online] Available at: http://www.economist.com/node/18744167 (Accessed 10th August 2012).

Nam, H.S. and Song, D.W. (2011). Defining maritime logistics hub and its implication for container port. *Maritime Policy & Management: The flagship journal of international shipping and port research.* 38(3), pp. 269-292.

Naslund, D. and Williamson, S. (2010). What is management in supply chain management? – a critical review of definitions, frameworks and terminology. *Journal of Management Policy and Practice.* 11(4), pp. 11-28.

National Audit of Intermediate Care (2012). "National Audit of Intermediate Care". Available at: http://www.nhsbenchmarking.nhs.uk/CubeCore/.uploads/Downloads/NAIC/NAIC_report_20120912.pdf (11th November 2014).

National Audit Office (2013). "Emergency admissions to hospital: managing the demand". [online] London: The National Audit Office Available at: www.nao.org.uk (Accessed 5th July 2014).

National Audit Office (2014). "Adult social care in England: overview". [online] London: The National Audit Office Available at: http://www.nao.org.uk/wp-content/uploads/2015/03/Adult-social-care-in-England-overview.pdf (Accessed 22 February 2015).

National Collaboration for Integrated Care and Support (2013). "Integrated care and support: our shared commitment". Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/198748/DEFINITIVE_FINAL_VERSION_Integrated_Care_and_Support_-_Our_Shared_Commitment_2013-05-13.pdf (Accessed 4th March 2014).

National Dignity Council (2015). *Dignity Champions* [online]. Available at: http://www.dignityincare.org.uk/About/National_Dignity_Council/ (Accessed 23rd January 2015).

National Health Service England Planning Guide (2013). *Developing plans for the better care fund* [online]. London: Department of Health.

National Health Service Confederation (2011). *The impact of non-payment for acute readmissions*, Issue 211, [online]. London: NHS Confederation and Foundation Trust Network. Available at: http://www.chks.co.uk/assets/files/Published%20articles/The_impact_of_non-payment_for_acute_readmissions.pdf (Accessed 20 November 2011).

National Health Service (NHS) Information Centre (2010). *Elderly people account for bigger proportion of NHS hospital activity every year, report shows* [online]. London: The Health and Social Care Information Centre. Available at: http://www.ic.nhs.uk/news-and-events/news/elderly-people-account-for-bigger-proportion-of-nhs-hospital-activity-every-year-report-shows (Accessed 10th August 2012).

National Health Service (NHS) Institute for Innovation and Improvement (2008). "Discharge Planning". [online] Available at: http://www.institute.nhs.uk/quality_and_value/productivity_series/the_productive_series.html (Accessed 21st December 2014).

Newman, J., Glendinning, C., and Hughes, M. (2008). Beyond modernisation? Social care and the transformation of welfare governance. *Journal of Social Policy.* 37(4), pp. 531-557.

Notte, C. and Skolnik, N. (2013). HER Report: EHRs, medicine, and humanism part II. *Internal Medicine News.* 46(1), pp. 52.

Office for National Statistics (2011). *National Population Projections, 2012-based Statistical Bulletin*.

Office for National Statistics (2013). *National Population Projections, mid-2012 to mid-2037.* [online] Available at: http://ons.gov.uk/ons/taxonomy/index.html?nscl=Population (Accessed 19th December 2013).

Ogilvie, A. (2014). "Let neighbourhood networks take the strain", *The MJ,* 25th April 2014, [online] Available at: http://www.themj.co.uk/article/author/Cllr-Adam-Ogilvie (Accessed 22nd January 2015).

Osterloh, M. (2013). *Norman Lamb announces integration pioneers* [online]. Available at: https://socialcare.blog.gov.uk/2013/11/01/norman-lamb-announces-integration-pioneers/ (Accessed 1 November 2013).

Osterloh, M. (2014). *Event: help transform local health and care services* [online]. Available at: https://socialcare.blog.gov.uk/2014/01/17/event-help-transform-local-health-and-care-services/ (Accessed 17th January 2014).

Oxford Brookes University. Institute of Public Care (2010). *How to commission the adult social care workforce: a practical guide for practitioners.* [online] Manchester: North West Joint Improvement Partnership. Available at: http://ipc.brookes.ac.uk/publications/pdf/How_to_Commission_the_Adult_Social_Care_Workforce.pdf (Accessed 14th February 2015).

Pahuja, G. and Vohra, R. (2012). Collaborative decision support systems for primary health care managers. *International Journal of Computer Science.* 9(2), pp. 416-421.

Pan, Z.X. and Pokharel, S. (2007). Logistics in hospitals: a case study of some Singapore hospitals. *Leadership in Health Services.* 20(3), pp. 195-207.

Paragon (2014). *Strategic Transport and Logistics Planning* [Online]. Available at: http://www.paragonrouting.com/uk (Accessed 7th July, 2014).

Parekh, A.K., Goodman, R.A., Gordon, C., and Koh, H.K. (2011). Managing multiple chronic conditions: a strategic framework for improving health outcomes and quality of life. *Public Health Reports.* 126, pp. 460-471.

Parker, G., Bhakta, P., Katbamma, S. (2000). Best place of care for older people after acute and during subacute illness: a systematic review. *Journal of Health Services Research & Policy.* 5(3), pp. 176-189.

Parker, G. (2014). "Intermediate Care, Reablement or Something Else? A Research Note about the Challenges of Defining Services", Working Paper No. 2630 [online]. Social Policy Research Unit, University of York, York. Available at: http://socialwelfare.bl.uk/subject-areas/services-activity/social-work-care-services/spru/169316ICR.pdf (Accessed 2nd November 2014).

Parsons, J., Rouse, P., Robinson, E., Sheridan, N., and Connolly, M. (2012). Goal setting as a feature of homecare services for older people: does it make a difference? *Age and Ageing.* 41(1), pp. 24-29.

Pearson, M. (2014). Aintree University Hospital NHS Foundation Trust rolls out new electronic medical records system to improve the quality of patient care. *International Journal of Integrated Care.* 14(1), pp. 1-6.

Pedroso, M.C. and Nakano, D. (2009). Knowledge and information flows in supply chains: A study on pharmaceutical companies. *International Journal of Production Economics.* 122, pp. 376-384.

Petch, A. (2008). *Health and social care: establishing a joint future?* Edinburgh: Dunedin Academic Press.

Petch, A. (2011). *An evidence base for the delivery of adult services.* [online]. Scotland: Institute for Research and Innovation in Social Services. Available at: http://www.adsw.org.uk/doccache/doc_get_495.pdf (Accessed 10th August 2012).

Peet, S., Phelps, K., Parker, G., and Turner, D. (2002). *An Evaluation of Admission Avoidance, Early Discharge and Community Reablement Schemes in Leicester City, Leicestershire and Rutland,* Working Paper LPT97 05/02, University of Leicester: Nuffield Community Care Studies Unit.

Pettigrew, K.E. (1996) Nurses' perceptions of their needs for community information: results of an exploratory study in southwestern Ontario. *Journal of Education for Library and Information Science.* 37, pp. 351-360.

Pilkington, G. (2008). Homecare re-ablement: why and how providers and commissioners can implement a service. *Journal of Care Services Management.* 2(4), pp. 354-367.

Pirkul, H. and Schilling, D.A. (1998). An efficient procedure for designing single allocation hub and spoke systems. *Management Science.* 44(12), pp. 235-242.

Plantin, A. and Johansson, M. (2012). "Implementing production processes in health care- a case study of a surgery clinic". Proceedings of PLAN Research and Application Conference, Lund, August 2012.

Poland, B. (2002). *Transcription quality.* California: Sage Publications.

Poole, T. (2009). *Funding adult social care in England.* [online]. London: The King's Fund. Available at: http://www.kingsfund.org.uk/sites/files/kf/briefing-funding-adult-social-care-england-teresa-poole-kings-fund-march-2009_0.pdf (Accessed 15th December 2011).

Prahinski, C. and Benton, W.C. (2004). Supplier evaluations: communication strategies to improve supplier performance. *Journal of Operations Management.* 22, pp. 39-62.

Prahinski, C., Benton, W.C., and Fan, Y. (2008). The influence of supplier development on buyer-supplier relationships. Pp. 5811-5816.

Pramatari, K. (2007). Collaborative supply chain practices and evolving technological approaches. *Supply Chain Management: An International Journal.* 12(3), pp. 210-220.

Priest, J. (2012). "The integration of health and social care", *Health Policy & Economic Research,* June 2012, [online] Available at: bma.org.uk/-/.../shaping%20healthcare/ reconfiguration%20and%20integration/ (Accessed 2nd November 2014).

Ptak, C. and Schragenheim, E. (2003). "ERP: tools, techniques, and applications for integrating the supply chain". Boca Raton, FL: St. Lucie Press.

Rabiee, P. and Glendinning, C. (2011). Organisation and delivery of home care re-ablement: what makes a difference? *Health and Social Care in the Community.* 19(5), pp. 495-503.

Ragatz, G., Handfield, R., and Scannell, T. (1997). Success factors for integrating suppliers into new product development. *Journal of Product Innovation Management.* 14(3), pp. 190-202.

Regen, E., Martin, G., Glasby, J., Hewitt, G., Nancarrow, S., and Parker, H. (2008). Challenges, benefits and weaknesses of intermediate care: results from five UK case study sites. *Health and Social Care in the Community.* 16(6), pp. 629-637.

Research in Practice for Adults (RIPFA) (2007). *Evidence cluster 7: effectiveness of reablement services,* Darington: RIPFA.

Rigby, M., Hill, P., Koch, S., and Keeling, D. (2011). Social care informatics as an essential part of holistic health care: a call for action. *International Journal of Medical Informatics.* 80, pp. 544-554.

Roe, A. and Liberman, A. (2007). A comparative analysis of the United Kingdom and the United States health care systems. *The Health Care Manager.* 26(3), pp. 190-212.

Robinson, W.S. (1951). The logic and structure of analytic induction. *American Sociological Review.* 16, pp. 812-818.

Robinson, L., Dauenhauer, J., Bishop, K., and Baxter, J. (2012). Growing health disparities for persons who are aging with intellectual and developmental disabilities: The social work linchpin. *Journal of Gerontological Social Work.* 55(2), pp. 175-190.

Rostgaard, T., Timonen, V., Glendinning, C. (2012). Guest editorial: Reforming home care in ageing societies. *Health and Social Care in the Community.* 20(3), pp. 225-227.

Rummery, K. and Coleman, A. (2003). Primary health and social care services in the UK: progress towards partnership? *Social Science & Medicine.* 56(8), pp. 1773-1782.

Rushton, A., Croucher, P., and Baker, P. (2009). *The Handbook of Logistics and Distribution Management,* 4th Edition. UK: Kogan Page Limited.

Ryburn, B., Wells, Y., and Foreman, P. (2009). Enabling independence: restorative approaches to home care provision for frail older adults, *Health and Social Care in the Community.* 17(3), pp. 225-234.

Sage, W.M. (2003). Medical liability and patient safety. *Health Affairs.* 22, pp. 26-36.

Sahin, F., and Robinson, E.P. (2005). Information Sharing and Coordination in Make-to-Order Supply Chains. *Journal of Operations Management,* 23, pp. 579–598.

Sandelowski, M. (1994). Focus on qualitative methods. *Research in Nursing and Health.* 17(4), pp. 311-314.

Sanja, M.M., (2013). Impact of enterprise resource planning system in health care. *International Journal of Academic Research in Business and Social Sciences.* 3(12), pp. 404-418.

Santiago, H. (2015). *Mid-level provider.* [online] Available at: http://healthcareers.about.com/od/n/g/mid-level.htm (Accessed 21st February 2015).

Saunders, M., Lewis, P., and Thornhill, A. (2000). *Research Methods for Business Students*, Second Edition. Harlow, UK: Financial Times/Prentice Hall.

Sbaraini, A., Carter, S.M., Evans, R.W., and Blinkhorn, A. (2011). How to do a grounded theory study: a worked example of a study of dental practices. *BMC Medical Research Methodology.* 11(128), pp. 1-7.

Schneider, M. (2013). PCPs drive 10 % drop in hospital stays. *Internal Medicine News.* 46(5), pp. 1.

Seddon, J. (2014). *Saving money by doing the right thing: why 'local by default' must replace 'diseconomies of scale'*. [online] Available at: http://locality.org.uk/wp-content/uploads/Locality-Report-Diseconomies-web-version.pdf (Accessed on 25th September 2014).

Select Committee on Public Service and Demographic Change (2013). Ready for Ageing? *Authority of the House of Lords,* 14th March 2013, [online] Available at: www.parliament.uk/public-services-committee (Accessed 19th July 2013).

Shotter, J. (1975) *Images of Man in Psychological Research.* London: Methuen.

Sigel, M.B. (2008). Understanding the supply chain operations reference model. *Professional Bulletin of United States Army Logistics.* Pp. 18-21.

Simatupang, T.M., Wright, A.C., and Sridharan, R. (2002). The knowledge of coordination for supply chain integration. *Business Process Management.* 8(3), pp. 289-308.

Slack, N., Chambers, S., and Johnston, R. (2007). *Operations and process management: principles and practice for strategic impact,* 5th Edition, Harlow, UK: Financial Times/Prentice Hall.

Slasberg, C. (2010). Re-ablement, efficiency and outcomes working. *Journal of care services management.* 4(2), pp. 141-149.

Smulian, M. (2012). Adult social care budgets cut by £890m. *Health Service Journal.* [online] Available at: http://www.nuffieldtrust.org.uk/sites/files/nuffield/121203_a_decade_of_austerity_full_report_1.pdf (Accessed 20th October 2013).

Snape, S. and Taylor, P. (2003). Partnerships between Health and Local Government: An introduction. *Local Government Studies,* 29(3), pp. 1-16.

Social Care Institute for Excellence (2011). *Reablement: emerging practice messages.* [online] London: Social Care Institute for Excellence Available at: http://www.scie.org.uk/files/EmergingMessages.pdf (Accessed 5th October 2011).

Social Care Institute for Excellence (2012). *Crossing the threshold: The implications of the Dilnot Commission and Law Commission reports for eligibility and assessment in care and support.* [online] London: Social Care Institute for Excellence Available at: http://www.scie.org.uk/publications/reports/report57.asp (12th December 2013).

Social Care Institute for Excellence (2013). *Fair Access to Care Services (FACS): prioritising eligibility for care and support.* [online] London: Social Care Institute for Excellence Available at: http://www.scie.org.uk (Accessed 19th April 2014).

Social Care Institute for Excellence (2013). *Maximising the potential of reablement.* [online] London: Social Care Institute for Excellence Available at: http://www.scie.org.uk/publications/guides/guide49/files/guide49.pdf (Accessed 18th January 2014).

Social Care Institute for Excellence (2014). *A and E figures: SCIE statement.* [online] London: Social Care Institute for Excellence Available at: http://www.scie.org.uk/news/mediareleases/media-release?id=a1UG0000003tvrrMAA (Accessed 14th February 2015).

Social Services Improvement Agency (2008). *Reablement Action and Learning Set Work Programme.* [online] Available at: www.ssiacymru.org.uk/.../Reablement_Action__Learning_Set_Work (Accessed 5th July 2012).

Somehk, B. (2006). *Action Research: A Methodology for Change and Development.* New York: McGraw-Hill Education.

Sower, V.E. (2007). *Benchmarking in hospitals: more than a scorecard.* [online] Available at: www.asq.org (Accessed 15th June 2014).

Spear, S.J. (2005). Fixing health care from the inside, today. *Harvard Business Review.* 83(9), pp.78-91.

Spicker, P. (2002). *Poverty and the welfare state- Dispelling the myths,* A Catalyst Working Paper. London: Catalyst.

Stevenson, J. (1999). Comprehensive Assessment of Older People. *Journal of Integrated Care.* 7(5), pp. 7-16.

Stock, J.R., Boyer and S.L. (2009). Developing a consensus definition of supply chain management: a qualitative study. *International Journal of Physical Distribution & Logistics Management.* 39(8), pp. 690-711.

Stone, E. (2010). "Spending review and social care" [weblog post]. Available at: http://www.jrf.org.uk/blog/2010/10/spending-review-and-social-care (Accessed 10th August 2012).

Strauss, A. and Corbin, J. (1998). *Basics of Qualitative Research: Grounded Theory Procedures and Technique,* 2nd Edition. London: Sage.

Supply Chain Council (2010). *Supply chain operations reference model: Overview of SCOR version 10.0.* Washington: Supply Chain Council.

Suter, E., Oelke, N.O., Adair, C.E., Armitrage, G.D. (2009). Ten key principles for successful health systems integration. *Healthcare Quarterly.* 13, pp. 16-23.

Syson, G. and Bond, J. (2010). Integrating health and social care teams in Salford, *Journal of Integrated Care.* 18(2), pp. 17-24.

Taylor, G.R. (2005*). Integrating Quantitative and Qualitative Methods in Research*, 2nd Edition. USA: University Press of America.

The Institute for Research and Innovation in Social Services (2010). *Effectiveness of reablement services,* [online] Available at: www.iriss.org.uk (Accessed 16th March 2014).

Tilley, S. (1998). Conducting Respectful Research: A Critique of Practice. *Canadian Journal of Education.* 23, pp. 316-328.

Tinetti, M., Baker, D., Gallo, W.T., Nanda, A., Charpentier, P., and O'Leary, J. (2002). Evaluation of restorative care vs usual care for older adults receiving an acute episode of home care, *Journal of the American Medical Association.* 287(16), pp. 2098-2105.

Tinetti, M., Charpentier, P., Gottschalk, M., and Baker, D. (2012). Effect of a restorative model of posthospital home care on hospital readmissions. *Journal of American Geriatric Society.* 60(8), pp. 1521-1526.

The Department of Economic and Social Affairs of the United Nations, (2009). *World Population Ageing 2009.* [online] New York: United Nations. Available at: http://www.un.org/esa/population/publications/WPA2009/WPA2009_WorkingPaper.pdf (Accessed 15th July 2012).

The Dilnot Commission, (2011). "Fairer Care Funding", *Department of Health,* July 2011, [online] http://webarchive.nationalarchives.gov.uk/20130221130239/https://www.wp.dh.gov.uk/c

arecommission/files/2011/07/Fairer-Care-Funding-Report.pdf (Accessed 12th November 2012).

The Health and Social Care Information Centre (2012). *Elderly people account for bigger proportion of NHS hospital activity every year, report shows.* [online] Available at: www.hscic.gov.uk (Accessed 21st September 2012).

The Health Committee, (2012). "Social Care", *House of Commons,* [online] Available at: http://www.publications.parliament.uk/pa/cm201012/cmselect/cmhealth/1583/158302.htm (Accessed on 8th November 2014).

The House of Commons Health Committee Inquiry: Social Care. *History of social care in England.* By Pat Thane. 2009.

The King's Fund (2014). *A new settlement for health and social care: interim report.* [online] London: The King's Fund. Available at: http://www.kingsfund.org.uk/sites/files/kf/field/field_publication_file/commission-interim-new-settlement-health-social-care-apr2014.pdf (Accessed 2nd November 2014).

The National Health Service Information Centre, (2011). *Personal Social Services Expenditure and Unite Costs: England 2010-11- Provisional Release.* [online] London: The Health and Social Care Information Centre. Available at: http://data.parliament.uk/DepositedPapers/Files/DEP2012-0198/DEP2012-0198.pdf (Accessed 3rd June 2012).

The Select Committee on Public Service and Demographic Change (2013). *Ready for Ageing?* [online] London: The Stationary Office Limited. Available at: http://www.parliament.uk/public-services-committee (Accessed 15th July 2014).

The Working Group (2012). "A review of the modernisation of older people's services". [online] UK: Bracknell Forest Council. Available at: http://www.bracknell-forest.gov.uk/modernisation-of-older-peoples-services-final-report.pdf (Accessed 12th December 2013).

Think Local Act Personal (2014). *Working together for personalised, community-based care and support: A partnership agreement 2014-17.* Available at: http://www.thinklocalactpersonal.org.uk/Latest/Resource/?cid=10154 (Accessed 15th June 2014).

Timmins, N. (2013). *The shifting nature of the health and social care divide.* [online] London: The King's Fund. Available at: http://www.kingsfund.org.uk/audio-video/nicholas-timmins-shifting-nature-health-and-social-care-divide (Accessed 2nd November 2014).

Torbay Health & Wellbeing Board (2013). "Section 256 Social Care Funding for Health Benefit- Allocation and Monitoring", *Torbay Council,* 17th July 2013, [online] Available at: http://www.torbay.gov.uk/DemocraticServices/documents/s14937/Section%20256%20Report.pdf (Accessed 23 January 2015).

Triggle, N. (2011). "Basic home care help 'breaching human rights'", *British Broadcasting Corporation,* 23rd November 2011, [online] Available at: http://www.bbc.com/news/health-15836500 (Accessed 2nd May 2012).

Triggle, N. (2012). "Hospital discharge delays 'continue to rise'", *British Broadcasting Corporation*, 30th April 2012, [online] Available at: http://www.bbc.co.uk/news/health-17893429 (Accessed 2nd May 2012).

Triggle, N. (2014). "Social care reforms: Councils raise funding concerns", *British Broadcasting Corporation,* 6th August 2014, [online] Available at: http://www.bbc.com/news/health-28673385 (Accessed 8th August 2014).

Trochim, W. (2006). *Research Methods Knowledge Base.*

VanVactor, J.D. (2011). Health care logistics: who has the ball during disaster? *Emerging Health Threats.* 4, pp. 1-8.

VanVactor, J.D. (2012). Strategic health care logistics planning and emergency management. *Disaster Prevention and Management.* 21(3), pp. 299-309.

VanVactor, J.D. (2013). Leveraging the Patient-Centered Medical Home (PCMH) model as a health care logistics support strategy. *Leadership in Health Services.* 26(2), pp. 95-106.

Villa, S., Barbieri, M., and Lega, F. (2009). Restructuring patient flow logistics around patient care needs: implications and practicalities from three critical cases. *Health Care Management Science.* 12, pp. 155-165.

Vissers, J. and Beech, R. (2005). *Health Operations Management: Patient Flow Logistics in Health Care.* London: Routledge.

Voss, C., Tsikriktsis, N., and Frohlich, M. (2002). Case research in operations management. *International Journal of Operations & Production Management.* 22(2), pp. 195-219.

Vrasti, W. (2008). The strange case of ethnography and international relations. *Journal of International Studies.* 37(2), pp. 279-301.

Waddington, M. (2014). "Libraries to close, adult care will lose £42m and leisure centres to shut under Liverpool budget cut plans", *Liverpool Echo,* 6th February 2014, [online] Available at: http://www.liverpoolecho.co.uk/news/liverpool-news/liverpool-council-outlines-156m-budget-6681111 (Accessed 8th September 2014).

Wahlstrom, B. (1994). Models, modelling and modellers: an application to risk analysis. *European Journal of Operational Research.* 75(3), pp. 477-487.

Wakefield, B.J., Uden-Holman, T., and Wakefield, D.S. (2005). Development and validication of the medication administration error reporting survey. *Advances in Patient Safety: From Research to Implementation.* Pp. 475-489.

Wales, K., Clemson, L., Lannin, N.A., Cameron, I.D., Salked, G., Gitlin, L, Rubenstein, L., Barras, S., Mackenzie, L., and Davies, D. (2012). Occupational therapy discharge

planning for older adults: A protocol for a randomised trial and economic evaluation. *BMC Geriatrics*. 12(34), pp. 1-7.

Walshe, C., Caress, A., Chew-Graham, C., and Todd, C. (2007). Evaluating partnership working: lessons for palliative care. *European Journal of Cancer Care.* 16, pp. 48-54.

Walters, D. and Lancaster, G. (2000). Implementing value strategy through the value chain. *Management Decision*. 38(3), pp. 160-179.

Wang, W.Y.C., Chan, H.K., and Pauleen, D.J. (2010). Aligning business process reengineering in implementing global supply chain systems by the SCOR model. *International Journal of Production Research.* 48(19), pp. 5647-5669.

Wanless, D. (2006). *Securing Good Care for Older People. Taking a long-term view.* [online] London: The King's Fund. Available at: http://www.kingsfund.org.uk/sites/files/kf/field/field_publication_file/securing-good-care-for-older-people-wanless-2006.pdf (Accessed 4th March 2014).

Ward, R., Nichols, A., and Freedman, R. (2010). Uncovering health care inequalities among adults with intellectual and developmental disabilities. *Health & Social Work.* 35(4), pp. 280-290.

Wedgwood, I. (2007). "Lean sigma". Upper Saddle River, NJ: Prentice Hall.

Weiner, K., Stewart, K., Hughes, J., Challis, D., and Darton, R. (2002). Care management arrangements for older people in England: Key areas of variation in a national study. *Ageing and Society,* 22(4), pp. 419-439.

Weiner, K., Hughes, J., Challis, D., and Pedersen, I. (2003). Integrating health and social care at the micro level: health care professionals as care managers for older people. *Social Policy and Administration.* 37(5), pp. 498-515.

Weiner, J., Tilly, J., Howe, A., Doyle, C., Cuellar, A.E., Campbell, J., and Ikegami, N. (2007). "Quality Assurance for Long-Term Care: The Experiences of England, Australia, Germany and Japan. [online]. American Association of Retired Persons, Washington. Available at: www.aarp.org/ppi (Accessed 11th November 2014).

Weitzman, E. and Miles, M.B. (1994). *Computer programs for qualitative data analysis.* California: Sage Publications.

Whalley, L. (2014). *The Department of health's strategic objectives for the health and social care information centre: April 2014 to March 2015.* [online] Leeds: Health and Social Care Information Centre Available at: www.hscic.gov.uk (Accessed 14th December 2014).

Whole Systems Partnership (2011). *The reablement agenda: challenges and opportunities.* [online] North Yorkshire: The Whole Systems Partnership Available at: http://www.thewholesystem.co.uk/docs/WSP_review_of_reablement_Feb_2011.pdf (Accessed 10th November 2011).

Wieser, P. (2011). From health logistics to health supply chain management. *Supply Chain Forum.* 12(1), pp. 4-13.

Wiggins, K. (2013). "Details of £3.8bn integration fund revealed", *Health Service Journal,* 18th October 2013, [online] Available at: http://www.hsj.co.uk/news/details-of-38bn-integration-fund-revealed/5064450.article#.VN95OChU2D4 (Accessed 3rd January 2014).

Wilson, R.M., Runciman, W.B., Gibberd, R.W., Harrison, B.T., Newby, L., and Hamilton, J.D. (1995). The Quality in Australian Health Care Study. *Medical Journal of Australia*. 163, pp. 458–471.

Wilson, A., Riddell, S. and Baron, S. (2000). Welfare for those who can? The impact of the quasi-market on the lives of people with learning disabilities. *Critical Social Policy.* 20(4), pp. 479-502.

Wirral Clinical Commissioning Group (2013). *2013-2016 Strategic Plan.* [online] https://www.wirralccg.nhs.uk/Downloads/AboutUs/Strategic%20Plan/WirralCCG_Strategic%20Plan%202013-16.pdf (Accessed 16th July 2014).

Wirral Joint Strategic Needs Assessment (JSNA) (2012). *Wirral Population.* [online] Available at: http://info.wirral.nhs.uk/document_uploads/jsna/Chapter%202%20Wirral%20%20Population%20Refreshed%20October%2012.pdf (Accessed 15th July 2014).

Wiseman, J.P. (1978) The research web, in: Gill and Johnson, (2010). *Research methods for managers,* 2nd Edition. London: Sage Publications.

Wisner, J., Leong, G.K., and Tan, K.C. (2012). *Supply chain management: a balanced approach,* 3rd Edition, Ohio: South-Western/Cengage Learning.

Wood, C. and Salter, J. (2012). *The Home Cure.* [online] London: Demos. Available at: www.demos.co.uk (Accessed 7th December 2014).

World Health Organization (2003). *Key Policy Issues in Long-Term Care.* [online] Geneva: World Health Organization Available at: http://www.who.int/chp/knowledge/publications/policy_issues_ltc.pdf (Accessed 8th April 2012).

World Health Organization (2012). *Health and social care systems.* [online] Available at: http://www.euro.who.int/en/what-we-do/health-topics/Life-stages/healthy-ageing/facts-and-figures/health-and-social-care-systems (Accessed 4th December 2012).

Wulsin, L. and Doughtery, A. (2008). "Health information technology- Electronic health records: A primer". California State Library, California Research Bureau.

Xie, C., Hughes, J., Sutcliffe, C., Chester, H., and Challis, D. (2012). Promoting Personalization in Social Care Services for Older People. *Journal of Gerontological Social Work.* 55, pp. 218-232.

Yaman, H. (2011). Allocation strategies in hub networks. *Europena Journal of Operational Research.* 211, pp. 442-451.

Yin, R.K. (1984). *Case study research: Design and methods.* London: Sage Publication.

Yin, R.K. (1989). *Case Study Research.* California: Sage Publications.

Yin, R.K. (2003) *Case Study Research: Design and Methods,* 3rd Edition. California: Sage Publications.

Young, T., Brailsford, S., Connell, C., Davies, R., Harper, P., and Klein, J.H. (2004). Using industrial processes to improve patient care. *BMJ.* 328(7432), pp. 162-164.

Young, Y., Inamdar, S., Barhydt, N., Colello, A., Hannan, E. (2010). Preventable hospitalization among nursing home residents: varying views between medical directors of nursing regarding determinants. *Journal of Aging and Health.* 22(2), pp. 169-182.

Zainal, Z. (2007). Case study as a research method. *Journal Kemanussian,* 9, pp. 1-6.

Zäpfel, G. and Wasner, M. (2002). Planning and optimization of hub-and-spoke transportation networks of cooperative third-party logistics providers. *International Journal of Production Economics.* 78, pp. 207-220.

Zhong, R.Y., Li, Z., Pang, L.Y., Pan, Y., Qu, T., Huang, Q. (2013). RFID-enabled real-time advanced planning and scheduling shell for production decision making. *International Journal of Computer Integrated Manufacturing.* 26(7), pp. 649-662.

Zhou, H., Benton, W.C., Schilling, D.A., and Milligan, G.W. (2011). Supply chain integration and the SCOR model. *Journal of Business Logistics.* 32(4), pp. 332-344.

Zimmerman, R. and Gallagher, P. (2010). Health supply chain management. *Health Informatics.* pp. 385-403.