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The Collaboration Compass: Using Grounded Theory to Map Interactive Navigation

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Abstract

Collaboration is central in the transformation and sustainability of future healthcare with a clear place in integrated models of care, but the operationalisation of collaborative working presents challenges in practice. There is a lack of evidence about how collaboration is sustained in the delivery of healthcare, and a deficiency of studies which include patients as part of collaboration. This thesis investigates the meaning and manifestation of collaboration, including the experience of patients and professionals in practice.

A social constructionist approach to grounded theory is used to investigate collaboration in an Outpatient Parenteral Antimicrobial Therapy (OPAT) service. The sample consists of staff and patients who have experience of OPAT. Interviews and focus groups are used to generate data, and grounded theory methods are used to progress the study through constant comparative analysis and theoretical sampling to a point of data saturation. Coding, categorising and techniques of situational analysis are used to analyse data and develop theory.

The theory of Interactive Navigation conceptualises collaboration as a device used to navigate complex care situations and to direct collaboration with differing consequences for patients and professionals. The factors which influence collaboration are found to be a range of Situational Co-ordinates (Certainty, Uncertainty, Limits, Goals and Power) and interaction takes place through Interactive Mechanisms (Rehearsing, Coordination, Communication and Trust). The Collaboration Compass model is presented as a tool to inform understanding of Developing, Maintaining, Limiting and Disrupting collaboration.

Collaboration is differentiated into four distinct areas and is revealed as a social device integral to the situation in which it takes place. This complexity requires recognition if collaborative health and social care developments are to succeed. The theory of Interactive Navigation presents a new way to view collaboration, and the Collaboration Compass offers a tool to navigate situations and map collaboration in practice.

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This thesis is in memory of Participant B, who was so generous in sharing his very precious time. It was an honour.

Authors Declaration

I declare that the work contained in this thesis has not been submitted for any other award and that it is all my own work. I also confirm that this work fully acknowledges opinions, ideas and contributions from the work of others.

Any ethical clearance for the research presented in this thesis has been approved. Approval has been sought and granted by the Faculty Ethics Committee on 12th December 2013 and the West of Scotland Research Ethics Committee 4 on 1st April 2014.

I declare that the Word Count of this Thesis is 62,281 words.

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Signature

Date

Chapter One – Introduction and Background

Introduction

Collaboration is a common feature in current healthcare policy and is promoted as a key aspect of delivering effective health care to individual patients and to populations. Working collaboratively is highlighted internationally as a way to support integration of services and organisations (NHS England, 2014; NHS England 2017c; World Health Organisation, 2017; Van der Heide et al., 2017) and is seen as central in the sustainability, transformation and 'financial reset' of the National Health Service (NHS) (NHS England and NHS Improvement, 2016). However, there is a lack of evidence about how collaboration relates to outcomes (Dickinson and Sullivan, 2014) and lack of clarity about how it impacts on patient care (Novikov et al., 2016).

The current environment within the NHS is framed by increasing demand, complex health needs, austerity, radical reorganisation of structures, and a greater element of competition than has ever been seen before. The immediate effects of such fundamental change can destabilise organisations and increase the possibility of fragmented services which leads to a greater requirement for collaboration across professional and service boundaries. As the NHS strives to find new ways of working with limited resources collaboration is used to drive the implementation of integrated services which aim for greater effectiveness and efficiency. Traditional models of care and ways of working are being challenged and responsibility for care and the settings in which it takes place are changing.

This chapter provides the introduction and background context for this thesis which is a response to the challenges faced in healthcare practice when services are reconfigured and new collaborations are required to deliver new ways of working. Questions from practice inspire an investigation in to the meaning of collaboration and the way it is manifested in day to day practice. This leads to understanding of the complexity of collaboration and how it is shaped by interaction and navigation of the healthcare situation in which it takes place. The thesis records the journey to answer questions from practice through a grounded theory (Glaser and Strauss, 1967; Charmaz, 2014) study of collaboration in a service designed to deliver intravenous antibiotic therapy in patient homes. This study leads to the development of the substantive theory of Interactive Navigation and a new model of collaboration

called the Collaboration Compass which informs and supports the practice of collaboration in healthcare situations.

The chapter begins with an overview of my professional practice and reflection on collaborative practice experiences which produced the impetus for this research. The background for collaboration within healthcare and the context of the intravenous antibiotic service will be discussed in relation to the development of research questions and the study designed to address them. The chapter will conclude with a brief overview of the study and an outline of the thesis structure.

Experiences in Professional Practice

I am a nurse with over thirty years of experience in a range of health care and educational settings and my career has been shaped by a desire to develop healthcare practice which meets the needs of patients and responds to the changing environment of the NHS. This has often placed me in roles which involve working across professional and organisational boundaries and over time I have become skilled in the practice and facilitation of what I have accepted to be collaborative working. At the time my doctoral study began, and during the design of the study, I was Senior Nurse for Medicines Management in a Trust which had recently been integrated from separate acute and community organisations. I was in the position of working across all trust sites and departments to support the safe and effective management of medicines in all areas.

Medicines management is one aspect of healthcare which is common to all services and departments and to most patients, with medicines being the most frequently used NHS intervention (Picton and Wright, 2013). Collaborative practice is implicit within medicines management as medicines are promoted as being 'everybody's business' (Department of Health, 2008) with the expectation that all involved in the management of medicines takes responsibility for safety. Yet there is a danger with implicit collaboration and shared responsibility, in the assumption that everyone has the same understanding of what collaboration is and the possibility that those involved in the medicines process will see responsibility as belonging to someone else. There is a lack of research into the practice of collaboration in medicines management, but there is evidence of increased errors when patients move between care settings (NICE, 2015), despite the promotion of cross-organisation and cross-sector working. The role of collaboration is fundamental to the delivery of safe and effective treatment in the NHS and my role was often to provide facilitation

of more explicit collaborative working to clarify responsibilities, particularly in areas of new practice or where complex medicines processes pass through multiple departments or organisations.

As part of my role I was asked to lead the development of a new model of care which changes the traditional ways of managing care for some patients who require intravenous antibiotic therapy. Rather than spending time as inpatients, on hospital wards, some patients who are clinically well enough are able to be treated at home. The service, known as Outpatient Parenteral Antimicrobial Therapy (OPAT), and the project to develop and implement the new service, required collaborative working across a newly integrated organisation. The aim was to develop a pathway through secondary and primary care to deliver treatment in patient homes, but the project was challenging to lead and I encountered many difficulties during the development of OPAT.

Organisational systems and processes proved difficult to negotiate and hindered integration of services across previous boundaries of care. Finances were restrictive and did not fully support the development of collaborative services which often require more resource to implement than traditional models (Martin-Misener et al., 2012). The collaborative working of a core group of likeminded professionals was a key aspect of developing this innovation at a time when the dynamics of internal and external organisational changes in structure, finance and power made wider collaboration difficult to establish. Existing services were retreating to core functions in an attempt to manage increased workload at the same time as commissioners were pushing for the implementation of multiple new services. Conversations with patients clearly established the value of the service for them and eventually the collaborative commitment of a core team of professionals, and my dedicated time to facilitate and lead the project, established a limited, but successful OPAT service.

Outpatient Parenteral Antimicrobial Therapy
Outpatient parenteral antimicrobial therapy (OPAT) is a method of delivering intravenous antibiotics in an outpatient setting to people who do not require an overnight stay in hospital. It was first described in 1974 (Rucker and Harrison, 1974) and since that time it has become established clinical practice in many countries with an increasing collection of evidence to support both clinical and cost effectiveness. The development of OPAT in the UK has been less rapid than in other countries with only a few specialist centres providing the service, until a surge

of development and expansion over the last decade or so. OPAT is now receiving increasing attention in the UK and is being actively promoted by the British Society for Antimicrobial Chemotherapy (BSAC) with recommendations for good OPAT practice (Chapman et al., 2012) and has now become a recommended prescribing option for good antibiotic stewardship (Public Health England, 2011).

There are many different designs of OPAT service and the benefits are well documented in terms of cost effectiveness, efficiency and outcomes (Wai et al., 2000; Chapman et al., 2009, Chapman et al., 2012) but much of the OPAT literature focuses on outcomes in specialist outpatient centres. There is minimal representation of OPAT delivered in domiciliary settings, and a lack of research into the processes and the collaboration needed to ensure safe and effective administration and monitoring of intravenous antibiotic treatment in the patient's home. Patients are the focal point in collaboration about medicines, yet patient experiences of OPAT receive little attention in the existing literature. There is evidence which supports patient acceptance of the treatment (Kayley et al., 1996) and improved satisfaction for OPAT at home when compared with hospital treatment (Corwin et al., 2005), but this does little to understand the patient's involvement and experience of receiving this treatment at home.

Reflection on Practice

I am a reflective practitioner and during my development as nurse and educator I have embraced reflective practice as an integral part of my professional life. Experience of the OPAT project resulted in many issues for reflection and while analysing these issues I realised that a number of questions remained unanswered and it was these unanswered questions which informed action to develop this study.

I have undertaken the leadership and facilitation of many practice projects in the development of new ways of working, and collaboration with others has always been part of that practice development role, but the OPAT project proved to be particularly challenging. Establishing and maintaining continuity in collaboration with a range of individuals and groups was difficult at every stage of the project progression, and only strong and determined collaborative relationships with key individuals implemented the service. If collaboration was this difficult in the development of OPAT then I questioned how collaboration would operate in the delivery of the care. As the developer of a service it is essential to know if collaborative difficulties continue into the delivery of that service in practice and to

understand how collaboration takes place within the challenging environment of the NHS.

My previous experience of collaboration had always been effective, productive and enjoyable with positive consequences. Although aspects of the OPAT project were all of those things it was remarkable in the challenges it posed in establishing and maintaining new collaborative relationships and in the barriers it presented to developing new ways of working. Through reflection I examined my perspective on collaboration and questioned my own understanding of it. I posed questions about what collaboration means in practice and what the consequences of it mean for those involved in the day to day delivery of the service. In analysing my own experience I wondered about the understanding and experiences of others and about the factors which influence, drive, facilitate or hinder collaboration. I particularly wondered what collaboration means for patients and how they experience it in the daily reality of treatment at home.

Collaboration as a Concept
As a practitioner familiar with seeking answers in the evidence base my first action was to consult the literature to find out more about the concept and current understanding of collaboration, and it proved to be a difficult concept to define. Study of collaboration features a diversity of interchangeable terms and a lack of common meaning across a large body of evidence and literature generated by a range of disciplines. In 1998 Oliver and Ebers characterised the literature relating to collaboration as a 'cacophony of heterogeneous concepts, theories and research results' (p. 549) and this has continued and increased in number during the ensuing years. Definitions of collaboration come from a variety of settings and range from the simple concept of 'a mechanism by which a new negotiated order emerges among a set of stakeholders' in organisational behaviour (Gray, 1989, p. 228) to the more complex idea of 'any joint activity by two or more agencies that is intended to increase public value by their working together rather than separately' in management (Bardach, 1998). This initial scoping of the literature provided an appreciation of the broad base for evidence and comment on the topic of collaboration.

Collaboration can be seen to take place between organisations, within organisations or between individuals. It can be international, interagency, intergovernmental, interdisciplinary, interprofessional or a partnership between two people. Differing

perspectives can be used to view collaboration with the macro view being of inter-organisational activity while the micro focus examines interaction between individuals (Williams, 2012). Reviews (D'Amour et al., 2005; Williams, 2012) suggest that the available literature neglects the role of the individual and that we have limited understanding of the complex relationships involved in collaboration. Appreciation of these differing perspectives and levels of collaboration framed the view required for investigating OPAT practice. This study views the middle ground and adopts a meso focus on the social interaction (Clarke, 2005) which takes place between individuals within organisations and communities. This perspective encompasses the influences of organisations and the actions of individuals and aims to represent the complex and messy hinterlands of healthcare where collaboration takes place.

Many terms are used in connection with collaboration and little distinction is made between terms such as cooperation, coordination, integration and teamwork within the context of collaboration policy, practice and research. This conceptual diversity can be seen as positive in encouraging inclusivity in multiple understandings and interpretations of collaboration (McLaughlin, 2004), but the lack of fixed terms and variety in definition can also be confusing and lead to disagreement and lack of clarity about what constitutes collaborative practice. The scale, scope and diversity of collaboration as a concept within the broad literature led me to question the meaning of collaboration, and more specifically the meaning in healthcare. There are advantages in understanding different perspectives on collaboration and this thesis draws on sources from a range of settings to inform the process of inquiry, but in order to contribute to nursing and wider professional healthcare practice the main focus of the discussion is collaboration in healthcare settings.

Collaboration in Healthcare

Healthcare definitions of collaboration have developed over time to reflect the increasingly complex, multiprofessional nature of practice. Earlier definition has a narrow professional focus: 'nurses and physicians working together, sharing responsibility for solving problems, and making decisions to formulate and carry out plans for patient care' (Baggs and Schmitt, 1988, p. 148). More recent definition is based on analysis of collaboration as a concept and is multifaceted, convoluted and somewhat idealistic when viewed from the challenges faced in practice:

'An interprofessional process characterised by healthcare professionals from multiple disciplines with shared objectives, decision-making, responsibility, and power working together to solve patient care problems; the process is best attained through interprofessional education that promotes an atmosphere of mutual trust and respect, effective and open communication, and awareness and acceptance of roles, skills, and responsibilities of the participating disciplines.' (Petri, 2010, p. 79).

None of the definitions identified at the beginning of the research represent collaboration during the OPAT project and none reflected the situation of collaboration in current health care practice. Definitions are representative of the wider literature and focus on collaboration between professionals and fail to include the patient, or service user, as part of collaboration. Only more detailed and targeted searching later in the study identified a more inclusive definition of collaboration which clearly identifies the patient as a partner in collaborative practice:

'a partnership between a team of healthcare professionals and a client in a participatory, collaborative and coordinated approach to share decision making around health and social issues' (Orchard, Curran and Kabene, 2005).

This is a more inclusive definition of collaboration, and most closely resembles my own understanding of the concept of collaboration at the beginning of the research journey. However there is no information available about how it was developed or what contributed to the concept of collaboration contained within it.

The concept of collaboration is frequently discussed, but lacks definition which is clearly informed by and representative of current practice. As a practitioner I found representations of collaboration found within the literature to be lacking in their ability to inform practice; being either too idealistic and lacking consideration of current practice situations or failing to acknowledge patients and service users in collaboration. The demand to collaborate in practice is increasing and the diverse and unrepresentative picture of collaboration is informing policy and practice expectations of what collaboration should deliver.

Policy and Drivers
The focus on collaboration and the promotion of collaborative practice has been an increasing part of public policy for over fifty years (Williams, 2012) and in

healthcare, as in other sectors, it has increased noticeably since the late twentieth and early twenty first century. Government reorganisations of the NHS have been frequent and made with the aim of professionals working more closely together. NHS investment and reform (DH, 2000) put collaboration at the heart of service redesign and although subsequent changes of Government have seen many changes in policy and structure for the NHS (DH, 2012) collaboration has remained central. New models of care which feature integrated working have been established (NHS England, 2017a) and collaboration is key for managing care (NHS England, 2015a) and in sustaining and transforming NHS provision (NHS England, 2017b). Although policy encourages and promotes the aspiration for collaborative health care it does not identify what is meant by the term collaboration and it fails to address any potential difficulties (Dickinson and Sullivan, 2014) or challenges associated with complex and frequently changing healthcare environments.

Collaboration has been linked with improved outcomes (Van Ess Coeling and Cukr, 2000; Rice et al., 2010) and possible efficiencies (Pape et al., 2013) although these studies focus on the communication involved in collaboration. The premise for promoting collaboration is safety, efficiency and quality of care (Reid Pont et al., 2010), but studies seen as supporting this premise deal with teamwork, communication and education (Kalisch and Lee, 2010; Merali et al., 2008; Neily et al., 2010) around a general notion of collaboration rather than identifying or defining collaboration in practice.

Without a clear understanding of what collaboration means it is impossible to understand what benefits may be attributed to collaborative working or to conclude that other ways of working may prevent these benefits from materialising (Cameron and Lart, 2003). The extent to which professionals collaborate is said to affect the quality and safety of patient care (Rice et al., 2010; Martin et al., 2010), but many studies which contribute to these conclusions are based on broad and general concepts of collaboration or on the measurement of specific aspects of collaborative behaviour.

Collaboration is not viewed in universally positive ways and it is said to increase cost in terms of staff time and (Glendinning, 2004; Leutz, 1999) the resources associated with it (Gache et al., 2014). The effectiveness of collaboration has been questioned (Sullivan and Skelcher, 2002) and even though collaborative working is depicted as a way to improve outcomes for the users of healthcare services, there is

little rigorous evidence to support links between collaboration and any specific patient outcomes (Dickinson and Sullivan, 2014).

Despite lack of clarity about what collaboration means or how it is manifested it is actively promoted in current healthcare policy and features significantly in new service design. There are many scales and questionnaires designed to measure the collaboration (Orchard et al., 2012; Yamamoto et al., 2014; Thannhauser et al., 2010) taking place in teams, but few include patients and most include numerous descriptors in the attempt to capture the concept of collaboration. The measurement of collaborative practice is a challenge given the difficulty which exists in defining collaboration, the different understandings (Johannessen and Steihauh, 2014) of what collaboration is and who should be involved. Before we can produce a meaningful measure we need to understand what collaboration is and how, or if, it is manifested in patient care.

Patient Involvement

NHS legislation encourages patient involvement in every aspect of care, but there is little evidence of the role patients play in collaborative working. Collaboration is frequently portrayed as an intermediary interprofessional activity (Lawson and Barkdull, 2000; Rice et al., 2010) where professional reluctance is what minimises the involvement of patients (Orchard et al., 2012), but how and why this happens is not fully understood. In light of this it is important to understand collaboration and to see if it brings, what Lasker et al (2001, p 199) call a 'unique advantage' in achieving healthcare goals in practice situations or if it continues to fall short of policy expectations (National Audit Office, 2017).

There is a long history of involving patients in their care and it has been an NHS objective since the right to choose aspects of healthcare was introduced (DH, 1989) and established as a patient right (DH, 1991). Professionals working in partnership with patients has continued to be encouraged in public health (DH,1999), during the planning of change (DH, 2006), in the making of joint care decisions (DH, 2010) and most recently legal requirements for patient and public involvement have been placed on NHS organisations (DH, 2012). Yet despite policy and regulations people are not always involved in their care and sometimes with devastating consequences (Francis, 2013).

Recent service transformation and restructure of care provision have placed new emphasis on individualised, person centred care which not only involves patients but encourages collaboration and gives patients greater control of their care (NHS England, 2014).Collaborative relationships between professionals and patients are actively encouraged and supported (Seale, 2016) with patient activation, co-production and co-design all advancing the possibilities for patient involvement in healthcare. But despite these new developments it is unclear what collaboration takes place in health care and to what extent patients are involved in collaboration during the delivering of their on-going care. This lack of knowledge means that collaboration is being actively promoted through policy and service design based on assumed benefits, but without an understanding of how collaboration takes place or what the impact of it is for patients, professionals and services. This research aims to provide a more detailed picture of the impact collaboration has in healthcare so that beneficial practice can be retained and developed while any disadvantages can be identified and avoided.

Unanswered Questions from Practice

The need for collaboration can be seen as essential as the complexity of care situations increase (Van Ess Coeling and Cukr, 2000) and health related policy continues to promote collaborative working (NHS England, 2015b; NHS England 2017b). Collaborative initiatives have been recognised for creating changes in service design and delivery (Melaville and Blank, 1992; Bronstein, 2003) for several decades, but the difficulty of some collaborative practice can lead to failure or at least to bring less than expected benefits (Williams and Sullivan, 2010). Some of the challenges of collaborating are evident in the literature (Van Eyk and Baum, 2002, Williams and Sullivan, 2010; Lawson, 2004), but there is little to inform the operationalisation of collaborative processes. As a practitioner I found a lack of research or theoretical presentation of collaboration to answer my questions from formative practice experience. Overall the practice application of collaboration was missing and particularly in relation to collaboration in medicines management.

The significance of collaboration in medicines processes is recognised in the call for research (NICE, 2015) to investigate collaborative working across different sectors, particularly from secondary to primary care, but as is often the case in medicines management, the call is positivist for trials to investigate cause and effect. The assumption of this call for research is that we already understand what collaboration

is and can test differing models to identify the best outcomes. My questions from practice and initial engagement with literature suggested that we have a diverse, but loose grasp on what collaboration means or how it is manifested in practice. Before we can measure or test models and outcomes of collaboration we need to understand it, define it and be able to apply it in the complex social situations of practice where it involves both patients and professionals subject to the realities of healthcare situations. The healthcare situation of OPAT is similar to many other areas of practice in terms of the need for integrated care in pathways which cross teams, care settings, services and organisations. Understanding of collaboration in the situation of OPAT will translate into many other areas where collaboration features in service delivery.

This thesis records my research journey (figure 1) to answer these questions from practice, to design methods which investigate collaboration in a practice situation and to interpret and discuss findings in the formation of a theoretical model which informs both understanding and operational practice application of collaboration.

Figure 1: Timeline of Research Journey

Research Activity	2013	2014	2015	2016		2017
Research Proposal	Apr - Oct					
University Ethics	Oct - Dec					
NHS Ethics		Feb - Apr				
Data Collection		Apr - Nov				
Data Analysis		Apr		Jan		
Writing up				Jan		Aug
Submission						Sept

Suspension of studies March 2016 - April 2017
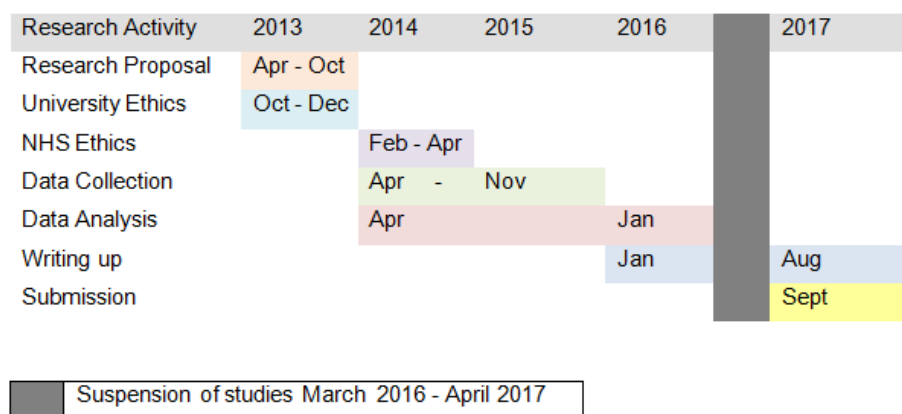
Overview of the Study

The theoretical orientation which guides this thesis is social constructionism with theories of structure and agency informing consideration of interaction in practice and the capability of individuals to act and construct collaboration within the constraints and influences of a health care situation.

Research Questions

The following research questions were created to guide the study and were developed to capture the reflective questioning of practice discussed above:

What is the meaning of collaboration and how is it manifested in a domiciliary OPAT service?

- How does collaboration take place?

- How do participants experience collaboration?

- What factors drive, influence, facilitate and hinder collaboration?

- What are the consequences of collaboration in domiciliary OPAT?

- How can collaboration be defined in domiciliary OPAT?

The main question was developed to provide a main overall focus of collaboration for the study. The sub questions allow exploration of the factors which influence individual and collective experiences of collaborative interaction and also support exploration of the wider influences and consequences within the situation where collaboration takes place. These questions guide investigation of individual perspectives and collective interaction within the situational context of an NHS practice setting.

Study Design

The theoretical ordination of the study is social constructionism informed by theories which facilitate interpretation of agency and structure within social situations. Both Symbolic interactionism (Blumer, 1986; Charon, 2010) and Structuration theory (Giddens, 1984) inform a theoretical perspective which recognises the contribution of both social structures and the agency of actors within social situations.

The study uses a social constructionist approach to grounded theory (Charmaz, 2008) and incorporates a range of situational mapping techniques (Clarke, 2005) to investigate collaboration within the situation of OPAT care delivery. Three patients and twenty one professionals, who were involved in their care, took part in the study and were interviewed individually or as part of focus groups. Grounded theory methods of theoretical sampling and constant comparative analysis were used to identify participants, capture different experiences of collaboration while concurrently analysing data. Mind mapping software was used during analysis to compare the perspectives of those involved in collaboration and then to combine these different perspectives to map and analyse interaction taking place in the OPAT situation.

Personal Influences and a Change of Role

I remained as Senior Nurse for Medicines Management in the Trust during the development and design of the study, but prior to commencing the University and NHS ethical approval processes I took up a post as Senior Lecturer at my sponsoring University. During my employment by the healthcare Trust I was viewed as an insider researcher (Costley, Elliot and Gibbs, 2010; Workman, 2007) with existing knowledge and relationships inside the field of study. Change of employment altered my status to that of an outsider, but I maintained relationships and knowledge of the NHS Trust and so could still be viewed in many ways as an insider. As a previous employee I had an overall knowledge of the service but I was no longer involved with the management or direct clinical delivery of the service. I identified a study gatekeeper (King and Horrocks, 2010) within the Trust to ensure my appropriate access and communication with participants.

Over time my status has inevitably changed and, although I maintain contact with previous colleagues, my inside knowledge of the Trust and its services has diminished. As the study progressed my perspective changed from emic as an insider to increasingly etic as an outsider and this changing perspective has been included as part of the reflexivity which features in this thesis.

Overview of Thesis

Following the introduction and background of chapter one, chapter two explores the role of literature in a grounded theory study and provides an overview of the approach taken to reviewing the literature. Themes from the literature related to collaboration and OPAT are presented to establish current knowledge in this field of study. Chapter three provides an explanation of the theories which orientate the study. The underpinning social constructionist approach is presented with consideration of agency and structure within the thesis. The chapter also explores the paradigm of interpretivist research and differentiates between constructionist grounded theory and differing approaches to using grounded theory methodology. Chapter four presents the study design and the use of research methods which are specific to grounded theory, such as theoretical sampling and constant comparative analysis. The selection and use of situational analysis tools are discussed and the methods of reflexivity used throughout the study are described.

A detailed account of data analysis is presented in chapter five and examples of situational mapping techniques are included to demonstrate analytical processes. Chapter six presents findings from the research with extracts from data used to illustrate the categories and theoretical concepts which emerged during data analysis. Findings are presented in the form of the Collaboration Compass, a theoretical model which describes the substantive theory of Interactive Navigation. Chapter seven discusses the findings and explains the intricate and dynamic social process represented in Interactive Navigation. Chapter eight discusses the implications of the Collaboration Compass Model and Interactive Navigation theory for collaborative health care practice. A reflection on the research journey in professional practice leads into the final summary and concludes the thesis.

Conclusion

The first chapter has provided the context of my professional background and identified questions from practice arising from my reflection on the challenges of collaborating when existing pathways of care and methods of communication no longer meet the requirements of new services. The practice situation of OPAT has been presented and the concept of collaboration has been examined in terms of policy, research and practice. My initial interaction with the literature highlighted a lack of patient involvement in collaboration and presented little to inform operation in practice. Unanswered questions about the meaning and manifestation of collaboration in the delivery of healthcare have been identified as instrumental in the development of the research. An overview of the research questions, study design, my position as researcher and thesis structure have been presented.

Chapter Two - Literature Review

Introduction

This chapter presents the initial review of collaboration and OPAT literature and outlines the approach taken to managing the ongoing relationship with literature during the study. The debate within grounded theory about literature reviews is discussed in relation to the development of my own, sometimes difficult, reflexive relationship with literature during the research process. Extracts from memos made during the course of the study are included, and identified within the text to demonstrate how my development as a critical learner informed ongoing research decisions.

Approach to Reviewing Literature (Initial Interactions)

The use of literature to inform the development of substantive theory is a recognised part of grounded theory, but the point at which a literature review should take place is a contentious issue amongst the proponents of the methodology. The developers of grounded theory have taken differing approaches following their original joint work. Glaser (1992) stresses the importance of not conducting a review of literature on the research topic before the substantive theory is nearing completion. This, he argues, keeps researchers 'as free and as open as possible' for analysis and interpretation of the data. He does however encourage 'voracious reading' in other substantive areas to develop and maintain theoretical sensitivity and knowledge in the use of social theory. This is a difficult balance to achieve in the practice of preparing and conducting a study. As Glaser and Strauss (1967) acknowledged, when first developing grounded theory, no one comes to research as a blank slate without some pre-existing knowledge of the area, and later Strauss (Corbin and Strauss 2008) changed his approach to grounded theory and acknowledged the need for a literature review in the early stages of a study, but warned against being stifled or paralysed by it.

The methodological disagreement about when to review literature continues, but as research approval processes and educational regulations usually require some review of literature to justify the study most grounded theory researchers find that they must adopt Urquhart's view (2007) that reviewing the literature can help to orientate the researcher, and does not necessarily prejudice them towards existing theories. Adopting reflexive methods minimises the potential for influence,

preconception, speculation and wasted time which Glaser (1998 p. 67-8) outlines as the drawbacks of pre-research literature reviews. There is now a growing consensus that a middle ground position (Dunne, 2011) acknowledges concerns about external influences imposing on data collection and analysis; yet, this position also recognises the practical need and potential benefits of engaging with the literature at an early stage.

There is benefit to having an awareness of 'the geography of a subject' (McMenamin (2006, p.134) in order to form and justify the research question and it would be impossible as a practitioner to develop questions from practice without developing some knowledge of the research area. I approached this study with the intension of an open mind, but as Dey (1993; 1999, p176) points out: an open mind does not mean an empty head. I entered the research with some preconceived ideas formed from my experience of working collaboratively, and leading collaborative work and education, in practice. I had sound knowledge of the growing OPAT evidence base and of the development of OPAT as a project, but I felt limited in knowledge about the theoretical aspects of collaboration.

The issues for me were how to use my existing knowledge and how to recognise and acknowledge my preconceptions. There was a need to become more familiar with the subject area, in order to justify the study, while still maintaining a 'fresh gaze' (Glaser and Strauss 1967). Coffey and Atkinson (1996, p157) comment on the benefits of open-mindedness, but point out the need to balance this with having sufficient knowledge of a research tradition in order to avoid the research equivalent of re-discovering the wheel. I needed to engage with the literature to find the scope of my study and to shape the research question yet manage any potential negative aspects of engaging with literature during the early stages of the study.

Reflection enabled me to identify my preconceptions. By using relational mapping techniques (Clarke, 2005) as tools of personal reflection I began a process of reflexivity which increased my awareness of the influences which shape me and impact on my outlook on the world. My aim was to develop a transparent account of my internal dialogue throughout the study and this included my dialogue with the literature as the study progressed. Memos and maps were used to facilitate and record reflection on the impact of my exposure to the literature during the study and examples of these memos will be included in the following chapters to illustrate the evolving relationship between me as researcher and as reader of literature during the research process.

A preliminary scoping exercise of the literature was performed during 2013 and this was the first step in gaining familiarity with the landscape of the subject literature. This was carried out by searching the University Database and using the broad key search terms of collaboration, teamwork AND interprofessional OR multidisciplinary OR interdisciplinary OR transdisciplinary and selecting existing literature reviews and concept analysis in the form of academic journal articles and books from a wide range of disciplines. This process was repeated using the search terms OPAT OR outpatient parenteral antibiotic therapy OR IV antibiotics AND home OR domiciliary. A date range of ten years was used and earlier texts were identified from following citations.

This process identified a large pool of literature with a substantial and diverse theoretical framework for collaborative practice and a smaller collection of outcome focused literature related to OPAT. I was familiar with some of the teamwork literature and much of the OPAT literature having recently conducted reviews for the OPAT project in practice, but this scoping exercise, with a focus on collaboration gave me a different view of the subject. I gained a better understanding of the landscape of existing knowledge about collaboration from theory to research and evaluation in practice situations. What became apparent were the differences between the diverse commentary and research related to collaboration and the more specific clinical evidence and guidance focused on specific outcomes and processes in OPAT.

Initial Scoping of the Literature
A review of the literature identified during the initial scoping exercise follows under the subheadings of Outpatient Parenteral Antimicrobial Therapy, Collaboration and Teamwork:

Outpatient Parenteral Antimicrobial Therapy
Outpatient parenteral antimicrobial therapy (OPAT) is a method of delivering intravenous antibiotics in an outpatient setting to people who do not require an overnight stay in hospital. It was first described in 1974 (Rucker and Harrison) and since that time it has become established clinical practice in many countries with an increasing collection of evidence to support both clinical and cost effectiveness. The development of OPAT in the UK has been less rapid than in other countries with only a few specialist centres providing the service, until a surge of development and expansion over the last decade. OPAT is now receiving increasing attention in the UK and is being actively promoted by the British Society for Antimicrobial

Chemotherapy (BSAC) with recommendations for good OPAT practice (Chapman et al., 2012) and is a recommended prescribing and management option for good antibiotic stewardship (Public Health England, 2011).

The advantages of OPAT are well documented and discussed (Nathwani and Tice 2002; Barr, Semple and Seaton, 2012; Chapman et al., 2009; Corwin et al., 2005; Kayley et al., 1996; Leggett, 2000; Paladino and Portez, 2010; Wai et al., 2000) and include reduced length of stay in hospital, admission avoidance for some infections, significant cost savings compared with inpatient care, reduced risk of healthcare associated infection and improved patient choice and satisfaction. There are also associated benefits which arise from reduced time in hospital in terms of reducing the social and psychological problems which can be associated with inpatient care; OPAT can enable a more rapid return to normal life by facilitating a choice of therapy which meets individual needs. There are also many benefits for healthcare services as OPAT is able to free hospital beds, and this can impact on waiting times and targets for early or timely discharges. OPAT also decreases the risk of hospital acquired infection such as MRSA and Clostridium difficile (C diff) and a number of service evaluations identify a low incidence of C diff associated with OPAT services (Seaton et al., 2011; Chapman et al., 2009). This can be seen as valuable in reducing C diff infections and in helping healthcare providers to avoid financial penalties for exceeding target numbers. OPAT requires input and review from infection specialist and this should improve appropriate and effective use of antibiotics for OPAT patients, and can also influence the practice of referring clinicians and contribute to overall antibiotic stewardship.

Just as the benefits from OPAT are well recognised so too are the risks which arise from delivering intravenous therapy in an environment with less supervision. There are risks for all patients who receive treatment for infection: risks from failing to treat the underlying infection and also the possibility of developing an acute, possibly life threatening, complication from the treatment, such as anaphylaxis, toxicity from the drug or infection from the intravenous line. These issues all require prompt action and within outpatient settings it is important that complications can be recognised and urgent admission to hospital arranged if required. Some OPAT studies (Hoffman- Terry et al., 1999; Malani et al.,2005) identify that 25% of OPAT patients will develop an adverse reaction during treatment with 10% needing to discontinue treatment early (Tice et al., 2004). Chapman et al. (2012) identify the need for patients to have access to advice and review as 6% of patients have been found to

need access to urgent telephone advice (Montalto,1996) with a further 6% requesting an unplanned home visit.

There are a number of different models for the structure and set up of OPAT services ranging from outpatient departments to community based facilities with visiting nurses and community clinics (Chapman et al., 2012). Most of the UK OPAT services which have published service evaluation are those based in acute care and operate as an outpatient clinic with patients coming into the department for treatment. These departments tend to be established as an expansion of an Infectious Diseases (ID) unit with ID Consultants (Barr, Semple and Seaton, 2012) and staff already in place or as part of an Ambulatory Clinic setting (Chapman et al., 2009). Community based models where antibiotic therapy is delivered in the patient's home are less common, but do offer effective and safe treatment (Kayley et al., 1996) and can be delivered by NHS or private companies. Each model has advantages and disadvantages and the type of model established in any particular area usually depends on the local needs and drivers for development of an OPAT service. Domiciliary OPAT provided in the patient's home has been identified as safe (Depledge and Gracie, 2006; Tice, 2000) effective (High, 2007, Kayley, 2011) and preferable (Nazarko, 2008). Services which offer both acute and community services are rare and Chapman (2013) highlights the barriers which arise from cultural and organisational situations and a general lack of willingness to work across organisational boundaries.

Medical insurance companies were the driving force behind the speed of OPAT development in the USA as companies favoured alternatives to the cost of hospital inpatient treatment (Leggett, 2000). OPAT was initially developed by specialists for the treatment of relatively rare cases of long term, lifelong conditions where it was practically, socially and economically difficult to maintain inpatient hospital treatment. The developments in improved intravenous equipment and the pharmaceutical advancements in antibiotics which allow administration once or twice a day, coupled with improvements in information technology, which have enabled virtual teams to communicate across greater distances, have contributed to the facilitation of OPAT in becoming a realistic clinical option for routine treatment of some infections.

As the UK NHS battles with the need to make efficiency savings, yet still be able to meet the demands of a growing and ageing population with ever more complex health needs (Department of Health, 2012), then the experience of American private

insurance companies becomes more influential (Pritchard, 2011). Developments such as OPAT have become more attractive to the commissioners and providers of healthcare who seek quality, innovation, productivity and prevention where ever possible (NHS Commissioning Board, 2013). OPAT is no longer an agenda driven by a discrete group of specialists in infection; it is becoming an attractive option in the NHS wide agenda to move 'care closer to home' and to bring savings through reducing the need for costly hospitalisation. The theoretical cost savings demonstrated by a number of OPAT evaluation studies (Wai et al., 2000; Corwin et al., 2005, Chapman et al., 2009; Gray, Dryden and Charos, 2012) have contributed to the overall evidence of safety and effectiveness (Kayley et al., 1996, Hitchcock et al., 2009, Marculescu et al., 2012, Paladino and Portez 2010) for all adult age groups (Perez-Lopez et al., 2008).

The potential savings for acute services and the ability to deliver treatment in communities is driving the development of OPAT and the outcomes to date are largely measured in terms of efficiency, quality and the drive to move care closer to home (Chapman, 2013). Nathwani and Tice (2002) discuss the importance of recording all OPAT outcomes to assess safety and effectiveness. They highlight treatment issues such as eradication of bacteria, adverse reactions and, performance of antibiotics and cost effectiveness as being of core importance. A national OPAT outcomes registry is in the process of being developed and the suggested core outcomes (Tice et al., 2004) remain focussed on elements of treatment and the impact on healthcare services, rather than the direct experience of individual patients or staff who deliver OPAT. The BSAC Good Practice Recommendations for OPAT (Chapman et al., 2012) acknowledge the importance of patient involvement in care and recommend that the views of key patient groups, according to their infection, be monitored by survey to ensure that OPAT remains patient focused.

Patient views of OPAT are reported as part of service evaluation (Kayley et al., 1996; Chapman et al., 2009) and would seem to be exclusively derived from survey, but are presented only in broad terms as being positive and as a preference for the location of treatment (Marra et al., 2005). Patient satisfaction is presented as supporting evidence to the main clinical and therapeutic outcomes being reported. These surveys present a positive picture of patient views but are superficial in terms of the impact of OPAT on the experience, health and wellbeing of patients. Even where OPAT is self-administered by the patient rather than a health care professional there is a lack of detailed evaluation of their experience beyond

satisfaction (Kieran et al., 2009; Matthews et al., 2007). The OPAT Good Practice Recommendations call for more 'objective' evidence of quality of life or return to work and more 'subjective' outcomes relating to patient experience.

The different models of OPAT delivery require different professionals to work together in a variety of ways and a number of studies make reference to the multidisciplinary nature of OPAT and the need for robust communication (Gilchrist et al., 2008), shared decision making, boundaries of responsibility (Chapman et al., 2012) and shared care (Kayley et al., 1996). Although the concept of patient centeredness is frequently expressed within OPAT studies and evaluations there is little evidence of patient involvement. Gilchrist et al. (2008) do outline the role of one patient participant in a group to review the risks involved in OPAT. The group consisted of two medics and one each of pharmacist, vascular nurse, district nurse, risk manager and patient representative. The study argues that this single patient who 'challenged medical issues' despite not being 'medically trained' ensured patient views were represented and 'allowed a patient centred approach'; this minimal representation of patients' views and involvement is a common feature in OPAT literature.

OPAT literature is largely written by doctors with a speciality in infection management and has a positivist, quantitative approach to research and service evaluation, and although the multidisciplinary nature and patient centeredness of OPAT are referred to, there is little patient representation or detailed discussion. A number of studies have a nursing focus and tend to deal with the practicalities of establishing a service, training requirements, (Depledge and Gracie, 2006; Dimond, 2006; O'Hanlon, 2008) and providing care (Nazarko, 2008 and 2013; Higginson, 2010). Nurse leadership and management of OPAT is also outlined, but in the case of Seaton et al. (2005) is written principally by a medical consultant and supports the nurse role to reduce the need for regular medical review. The roles of other health care professionals and the role of patients in their care would seem to be a gap within the OPAT literature with the exception of Kayley et al. (1996) who write from a community service perspective and acknowledge the roles of the multidisciplinary team and the impact when one professional is unwilling to participate, but does not give detail about the patient experience of this impact.

Collaboration
Although collaboration is a familiar concept and has been the subject of analysis (Petri, 2010; Hennemann Lee and Cohen, 1995) and research (Martin-Misener et

al., 2012; Reid Pont et al., 2010; D'Amour et al., 2005; Leathard, 2003) it is still an area of practice which is poorly understood. Despite a number of working definitions (Petri, 2010; Bronstein, 2003; Hennemann, Lee and Cohen, 1995), which convey a common idea that collaboration is about professionals sharing common goals and working together to plan and carry out patient care, there is lack of clarity about the terms used to describe types of collaboration and the nature of the interactions involved. Interdisciplinary, multidisciplinary, transdisciplinary and interprofessional are all used to portray collaborative practice (Reid Pont et al., 2010) and a number of concepts are identified as being connected with collaboration: interdependence, professional activity and responsibility, power, flexibility, sharing, focus on the patient and decision making (Petri, 2010; Hennemann Lee and Cohen, 1995).

Alliterative terms are also common in the description of collaboration with connecting, co-operation, consulting, co-locating, community building and contracting (Lawson, 2004) all being used to convey the concept. This variety of terms and meanings represents the diversity which underpins the concept of collaboration. There is no single comprehensive theory of collaboration and there is still much to be understood about the process of collaboration and the complexity of collaborative relationships, but there is literature which distinguishes collaboration from the other terms used to describe working together. Integration, interprofessional and multiprofessional team working have been examined (Boon et al., 2009). The conclusion is that collaboration is the means by which multiple professions work closely together in synergy, whereas integration requires a single organisational framework. Integration requires collaboration as a precondition, but collaboration does not require integration to exist.

 Much of the literature is conceptual in approach with far less empirical data (San Martin-Rodriguez, 2005) and collaboration is conceptualised in different ways and although there are some common features within different theoretical frameworks there are differences in the way collaboration is viewed and presented. Most theoretical frameworks deal with collaboration at a developmental stage of a project where a number of contextual issues have been found to influence collaboration. Research has increased our understanding of what Meads et al (2008) call the taxonomy of collaboration, but it is difficult to measure collaborative practice or to separate it from other team interactions and there is little focus on the sustainability of collaborative practices. Theoretical models identify a complex dynamic process with underpinning theories based in social transaction, organisational systems and professional relationships (D'Amour, Sidcotte and Levy, 1999; Gitlin, Lyons and

Kolodner, 1994; Corser, 1998). Lawson (2004) discusses three broad levels of collaboration which involve professionals, organisations and the relationship between professionals and citizens. This third level of collaboration between professionals and citizens is identified as having the potential to move away from traditional power relationships to a more shared responsibility for outcomes. Lawson makes a number of suggestions for developing and funding of such collaborations, but how this potential is delivered, or what it means in the on-going delivery of services, is not addressed.

Although patient care is identified as the focus for collaborative working in most literature, there is little representation of patients in most studies and the role of patients in collaboration seems to be missing from the theoretical models identified. D'Amour et al (1999) identifies a lack of explicit patient perspectives in the literature and, although there are examples of client participation being associated with improved outcomes (MacLeod & Nelson, 2000; Walker and Dewar, 2001), and with reduced paternalism in some situations (Lindeke & Block 1998), there is very little representation of patients in the literature relating to collaboration. Where patient experience is presented it is minimal; with collaboration and teams found to be invisible to many patients during their care (Safran, 2003) or with clients involved only as co-ordinators of professional action rather than being part of collaboration itself (D'Amour et al., 2005). Overall collaboration is presented as taking place between professionals and, although patient outcomes are considered, patient experience of collaboration is missing from the evidence which focusses on collaboration.

Although patient involvement in collaboration is not well represented in the literature, collaboration is increasingly discussed as part of patient involvement in health care (Snyder & Engstrom, 2016). Patient involvement is also an area which features a number of interchangeable terms such as patient engagement and patient participation. These terms are used to discuss both patient and public involvement in the planning and development of healthcare, and in relation to the activation of patients in their own developing or on-going care (Robinson et al., 2008). A range of models describe patient involvement; some in terms of the level of involvement (Arnstein, 1969), others present involvement as a continuum, with the receipt of information at one extreme, and full control at the other (Hickey & Kipping, 1998), with collaboration featuring in varying degrees (Grantham et al., 2006). More recent approaches focus on the processes involved (Greenhalgh et al., 2010) and

collaboration is seen as an important part of developing and delivering empowering outcomes for patients (Leske et al., 2012; Williams et al., 2012).

What constitutes collaboration in terms of patient involvement is not clear in the literature, with one interpretation being 'a two-way communication process that supports engagement' (Grande et al., 2014) and another seeing collaboration as involving decision making relationship between the patient and health care professionals (Angel & Frederiksen, 2015). Collaboration is accepted as an important part of involving patients in care and is seen as desirable by patients (Baars et al., 2010), but there is lack of clarity about what such collaboration is, and differing perceptions and expectations of collaboration have been found between patients and healthcare staff (Carlsson et al., 2006). There is little exploration of the effects of patient involvement (Snyder & Engstrom, 2016) and a lack of consideration about the consequences of collaboration for patients.

The literature presents a diverse picture of collaboration, but there is lack of detailed understanding about what makes collaboration effective in practice and worth the resources required to implement it. There is a close association between collaboration and teamwork and the consensus is that collaboration is utilised to accomplish teamwork (Xyrichis and Ream, 2008; Petri, 2010; Hennemann Lee and Cohen, 1995) and both teamwork and associated collaboration are portrayed as beneficial to practice. Areas for gains and benefits are identified in terms of: effectiveness, efficiency, resource, capacity, legitimacy and social development (Lawson, 2004), but it is not clear how this translates into patient experience. Collaboration outside existing teams is less evident in literature and integrated working, which involves additional collaboration across existing teams, is not discussed in terms of its impact or outcomes.

Collaboration can go wrong (Williams & Sullivan, 2010); sometimes with devastating consequences (Laming, 2003). Unintended effects of collaboration within teamwork have been reported with occupational divisions being reinforced (Finn et al., 2010) rather than reduced. Motivation, meaning, capacity and capability have all been identified as potential causes of failure (Williams and Sullivan, 2010). Although it is clear when it goes wrong, there is less evidence to support what delivers success in practice, how it can be rescued once difficulties arise or what failure means for patients.

Operationalising collaboration is difficult (Petri, 2010) and it involves different modes of management (Williams, 2012) which govern roles, responsibilities and the

interactions between those taking part. Governance issues in collaboration between organisations are well documented (Rodriguez et al., 2007, Ansell and Gash, 2007; Williams, 2012) and multiple modes of governance have been identified including hierarchy, which features command and control, markets driven by transaction between consumer and provider and networks which coordinate by mutual trust, negotiation and adjustment (Ferlie et al., 2010; Van Rensburg et al., 2016). These modes of governance all differ in terms of the power and influence of stakeholders and are usually used in combination, which adds to the complexity of collaboration.

In health, governance is an organisation wide approach to manage and deliver continuous improvement of quality in healthcare. It features a combination of centrally driven, traditional top down approaches to governance, and the introduction of newer, bottom up, approaches, which encourage patient and public involvement in healthcare (Veenstra et al., 2016), are being driven by policy (Ross et al., 2014). Wider changes in the commissioning and provision of healthcare have changed the way services are configured and this has brought variation in leadership styles, culture and professional status. More hierarchical modes of governance have been found in England in the past (Mur-Veeman et al., 2003), but the need to collaborate across specialities to deliver individual patient centred care (D'Amour et al., 2008) has promoted shared governance which is a key part of collaborative practice (World Health Organisation, 2013) and seen as essential in maintaining high quality care (Van Rensburg et al., 2016).

Governance within the interdependent services and organisations involved in healthcare presents a number of challenges. Governance has been found to be more than the legal requirements and reporting structures; it is inextricably linked to the way people connect, contribute to and benefit from an organisation (Ross et al., 2014). New collaborative governance has developed in some areas in response to the failure of traditional forms of governance (Ansell and Gash, 2007), and in an attempt to manage complex care situations. Calls have been made for more collaborative governance which accounts for service user and professional relationships and which give authority to service user views (Ross et al., 2014)

However, governance for collaborative situations can be challenging and a lack of consensus regarding patient involvement in clinical governance has been found (Veenstra et al., 2016). Differences in the way professionals approach patient involvement in governance issues have been found (Gauld & Horsburgh, 2012) and it may be that governance is viewed by some as an internal organisational issue

which should not include patients, who are external to the organisation (Veenstra et al., 2016). This may also mean that patients can be seen as external to collaboration and that patient involvement is not integrated into healthcare governance or culture. Findings where patient involvement has been low and viewed as tokenistic (Groene et al., 2014) would support this. It seems that governance for successful healthcare collaboration, which includes patients, is still in development.

The determinants for successful collaboration have been identified as broadly fitting into three categories of interactional, organisational and systemic factors (San Martin-Rodriguez, 2005). Interactional factors have had more focus in the literature and there would seem to be a lack of evidence about the organisational factors, such as structure and culture on collaboration. The mix of stakeholders is also seen as key with the driving force for each stakeholder being important in the compulsion to take part in collaboration; drivers to collaborate can be moral, self-interests or the fear of being left out (Lawson, 2004), but this does not include patients as stakeholders nor does it consider their role or motivation for collaboration.

The focus on professional collaboration presents a number of themes for effective multidisciplinary working (Doyle, 2008) with co-location, key workers, communication, appreciation of other agencies and information sharing all recognised parts of multidisciplinary professional practice. Current and ever changing healthcare environments mean that these aspects of practice are far from simple and straight forward, and in reorganised services they may not exist at all. These themes are not derived from patient situations and may not represent the practice of integrated care pathways in current practice. The factors thought to inhibit collaborative work are poor professional relationships, lack of trust and lack of confidence in the abilities of others (Doyle, 2008). How these factors impact on collaboration in current healthcare environments is not represented in the literature.

Teamwork
The concepts of teamwork and collaboration are closely related. Within some of the literature the terms are used interchangeably, but the consensus appears to be that collaboration is utilised to accomplish teamwork (Xyrichis and Ream, 2008; Petri 2010' Hennemann Lee and Cohen, 1995) with collaboration seen as an attribute of teamwork and a defining aspect of a team: 'a group collaborating in their professional work or in some enterprise of assignment' (Xyrichis and Ream, 2008).

The literature relating to teamwork tends to be descriptive and conceptual in nature. It comes from a diverse range of disciplines including management, organisational behaviour, education, human resources and health. Teamwork would seem to face a number of challenges in practise and in healthcare these challenges can include: hierarchies, a wide range of professionals involved in care, heavy clinical workloads, organisational change and rapid turnover of staff (Lewin and Reeves, 2011). Miller and Freeman (2001) found that within the NHS individual beliefs about working with other professionals and the effect of day to day realities in practice were most important in determining the success or failure of teamwork. Overall there is little known about how teamwork is negotiated day to day between staff in different clinical contexts (Lewin and Reeves, 2011), and there is a lack of robust predictors of effective teams (Mickan and Rodgers, 2005). The literature identified discussed professionals as members of a team, but did not include patients as part of the team. Different healthcare professionals may have different perspectives on what teamwork means (Makary et al., 2006); patients and stakeholders may all judge teamwork differently and as Mickan and Rodgers (2005) point out this brings challenges for designing research into teamwork.

Team characteristics are defined (Mickan and Rodgers, 2005) using the same concepts as those used to describe collaboration in much of the literature: collective interests, common goals, communication, cohesion and mutual respect all feature as team characteristics. Notions of synergy and goal orientation are seen as key to teamwork (Sandberg, 2010), and the concepts of leadership and management emerge as terms which may differentiate teamwork from collaboration. Leadership features as being important in influencing team performance (Mickan and Rodgers, 2005; DeRosa et al., 2004; Reid Ponte et al., 2010), but this is not found in the literature relating to collaboration.

The work of teams is examined in a variety of ways with a range of theoretical frameworks utilised to elucidate team performance. The cognitive underpinnings of effective teamwork are seen as a relationship between cognitive processes, motivation and behaviour (DeChurch and Mesmer-Magnus, 2010). It can be viewed in terms of the effort and activity which goes into team interaction and functioning (team work) and that which goes into the work the team must undertake (task work) (Crawford and Lepine, 2013). The question of what role collaboration plays in team work and task work is not addressed in the literature.

The interaction of teams has been studied using Goffman's theory of impression management (1963) to analyse the activity of teams in terms of the front stage and back stage interaction (Lewin and Reeves, 2011) and the effectiveness of official and unofficial interactions (Sinclair, 1997). This work highlights the complexity and dynamic nature of teamwork and suggests that cognition, motivation and behaviour all contribute to team performance and that informal, ad hoc interaction is as significant as formal communication processes in the performance of a team.

The nature of teamwork is well researched in terms of group psychology; Sundstrom, DeMeuse and Futrell (1990); Belbin (1993) and West (1990) all provide theory and supporting observation about how groups function in relation to tasks and how individual characteristics contribute to team working. A range of models exist which provide a variety of theoretical frameworks to explain the structure and function of teamwork. These models tend to be triad in structure or to take a step by step approach to the dynamics of teamwork. Concepts such as micro, meso, macro or past, present, future are common structures for models (Belbin, 2012), which outline teamwork, from simple production line groups, to complex, synchronous, multifunctioning, transdisciplinary teams. The defining aspect of a team in these types of models is the notion that a team adds value above and beyond the sum of each team member's contribution (Mathieu et al., 2008; Sandberg, 2010), but what contribution collaboration makes to achieving this added value of teamwork is not clear.

The advent of new virtual team configurations are documented as organisations seek to cut costs and find new effective ways of working. The benefits of virtual teams are discussed (DeRosa et al., 2004; Nunamaker, Reinig and Briggs, 2009) and it is clear that technology can bring faster communication, continuous workflow and more cost effective team interaction, but this must be balanced with drawbacks. There are challenges in establishing team relationships without face to face interaction and a lack of shared physical space. Demands from those colleagues who are physically present can compete with the needs of a virtual team (Nunamaker, Reinig and Briggs, 2009). Leadership of this type of virtual team can be challenging as virtual teams are more task focussed and tend to be autonomous and independent. Virtual teams also rely on the provision of technology and acceptance of any technology by team members (Kock, 2001). Research into virtual teams may have some relevance for situations of integrated working and new pathways of care. By nature of the lack of shared physical space and infrequent face to face interaction they have some similarity, but studies of these teams

assume dedicated access to technology, which is a feature missing in many other practice situations. Whatever technology is available the human team members are viewed as the most complex aspect of virtual teamwork (DeRosa et al., 2004), but the challenges and complexity of teamwork in healthcare practice, outside dedicated and funded virtual teams, may present a picture not yet clear in the literature.

The benefits of teamwork are highlighted within health policy (Department of Health, 2010) and interdisciplinary teamwork is regarded as a key approach to improving services and reducing errors (Haynes et al., 2009; Kvarnstrom, 2008). Education which strengthens interprofessional team working is encouraged and linked to positive health care outcomes (Zwarenstein, Goldman and Reeves, 2009) and specific team education from the aviation industry has transferred into health care, bringing greater understanding of situational awareness and team behaviour in improving safety (Connor et al., 2007; Neily et al., 2010). The relationship between teamwork and patient safety has also been explored (Manser, 2009; Richardson and Storr, 2010) with the potential for improved teamwork having positive effects in error reduction being widely discussed (Reid Ponte et al., 2010) but less widely evidenced (Lewin and Reeves, 2011). It is difficult to demonstrate improved patient outcomes which result directly from improved teamwork (Reid Pont et al., 2010), as the complex environment of healthcare challenges the ability to attribute outcomes to any specific intervention or aspect of team care. From the reviewed literature it is easier to identify the factors which may hinder or enhance multidisciplinary team working (Doyle, 2008) than it is to be specific about the contribution teamwork makes to patient experience and outcomes of care.

Learning from the Literature
Reviewing the literature identified the large body of publications related to collaboration and OPAT, but did not answer the questions arising from practice. Ways of conceptualising collaboration provided a cognitive landscape for what collaboration may include, but many areas lacked clarity and some appeared to be unexplored leaving gaps in literature about how collaboration, which includes patients, is manifested in the delivery of integrated care.

OPAT is typical of many healthcare situations in that it has guidelines for safe and effective practice with clinical outcomes evidenced and established in secondary care services, but it lacks information about how this translates into integrated

services delivered in patient homes. The collaboration required to deliver such services is acknowledged as difficult to operationalise, but there are areas of weakness in the literature about how collaboration happens, what it adds to the delivery of services and what makes it succeed or fail in challenging and changing environments. Patient experience, organisational factors and the impact of integrated working are all key issues in the NHS yet are not fully addressed by the literature relating to collaboration.

Exposure to the literature clarified the need for research which would add to the landscape of collaboration and bridge the gap between conceptions of interprofessional collaboration and the operationalisation of collaboration in organisations which are required to reorganise and integrate services, and which view patients as collaborators in care.

Establishing an On-going Relationship with the Literature

This early engagement with literature, prior to data generation, established clarity about the purpose and need for this research, and it also brought a point of clarity in my understanding of the ongoing debate about literature in grounded theory. The danger (Glaser, 1998) of exposure to literature early in grounded theory is well documented, but it was only in engagement with the literature that the significance of reflexive grounded theory methods (Charmaz, 2014) became tangible. My reflection on experiences of OPAT and thoughts about the content of Lawson's paper (2004), which relates to the logic of collaboration, seemed in danger of imposing existing theory into thought about personal experiences of the OPAT project. This seemed to be the edge of that middle ground discussed by Dunne (2011). The experience was one of realising a fulcrum which balanced the beneficial aspects of literature review with negative aspects which had the potential to influence, direct or impact on the authenticity of the study. This prompted reflection and development of a method for engaging with literature during the research process. The following memo extract records a significant moment of reflexivity which brought both clarity to my researcher relationship with literature and an appreciation of the role of reflection in maintaining a critical approach to research decisions.

Memo Extract 1: 25th January 2014: Critical Relationship with the Literature

I have been revisiting the literature in more detail and following up on some common themes. After reading Lawson's paper (2004) on the logic of collaboration in human services

I began to think about my own experience of OPAT and I realised that I was seeing similarities, and perhaps even looking for examples of theory, in my experience of OPAT. I could have been in danger of imposing theory on my experience of OPAT – perhaps this is what Glaser means by hampering the fresh gaze? This is why there is such a debate about literature. If I were to unknowingly impose theory during analysis it could threaten the authenticity of my study. I do want to maintain that 'fresh gaze', as far as possible, for active research, but if I keep reading I may impose theory from the literature. Will I hear participants clearly or only hear them through existing theory? This has made me think about my decision to use word cards (during data generation) and wonder if this is introducing the professionally produced discourse and the existing collaboration theory unnecessarily. How do I balance my knowledge of the themes from literature with gaining 'uncontaminated' data and wanting to learn what participants think about these themes? After all they are people who know about collaboration.

Later on 25th

I have been reflecting on the above. I wouldn't have thought about this without reflexivity and being critical of my thought processes, so the reflexive process works AND looking at literature has made me examine my experience of OPAT in a different way (in more detail and from different perspectives). Maintaining reflexivity and criticality is the way to capitalise on the insight and new perspectives offered by engaging with literature. Perhaps Glaser fails to recognise the role of critical reflection when he warns against consulting the literature. Nevertheless this is a difficult line to walk and I do want to maintain a refreshed gaze on research data.

I'm going to read general theory to inform my awareness and understanding of the theoretical orientation and methodology, and consult literature as I need to understand specific issues, but I will be transparent about what I read and use reflexive memos to explore the impact of this. BUT I will stop reading literature about collaboration now so I have a refreshed gaze for interviewing and analysing. AND I will use the word cards at the end of the interviews so that I get participants own words first and then learn what they think about the themes.

The issue identified in this memo began with reading literature, but its significance is in articulation of reflexivity and the ability to maintain criticality when reading and making research decisions. Reflexivity was effective in highlighting the potential for influence and this increased my self-awareness as a researcher. Glaser rejects reflexivity (2001) as a distraction from data, and it is perhaps his lack of recognition of the criticality in reflection which leads him to also warn against accessing subject specific literature before theory development (Glaser, 1992). The scrutiny of my own interests, assumptions and conduct, which is part of the reflexive process (Charmaz, 2014), was far from being a distraction; it was the means of ensuring thoughtful interviews and co-constructing rich data informed by practice, experience and existing knowledge (Rowley, 2012). Reflexivity enabled a critically aware

relationship, which allowed me to be informed by the literature, but not stifled or paralysed by it (Corbin and Strauss, 2008). As a 'learner in critical Inquiry' (Clarke, 2005) it was important to be transparent about existing and new sources of knowledge and to use information as critically as possible. This approach is what Thornberg (2011) calls informed grounded theory which sees the use of literature as 'a possible source of inspiration, ideas, `aha!' experiences, creative associations, critical reflections, and multiple lenses' (ibid, p7).

Inviting these potential benefits from literature required a critically reflective approach which included the ability to recognise times when exposure to literature was less beneficial. In order to sustain a critical approach, I decided to pause actively seeking and engaging with literature which reported on collaborative practice or teamwork two months before data collection began, although reading methodological literature and more general social theory continued. The aim was to nurture open-mindedness and the mental space to be able to see and hear participants' perspectives without any influencing echo of thought from recently read literature on the subject of collaboration or teamwork. It may not have been possible to have a completely 'fresh gaze' given my own on-going social interactions, experience and knowledge, but the aim was to enter data generation and analysis with a refreshed and reflexive gaze on collaboration; informed and inspired by the literature, but not unwittingly led or blinkered by it. Establishing this relationship with literature emphasised the significance of reflexivity in constructionist, informed grounded theory, and in the development of authentic research.

Approach to Reviewing Literature (Ongoing Interactions)
General social theory and methodological literature continued to be accessed during data generation and data analysis. This informed the research process and developed a deeper understanding of the differing approaches to grounded theory. Reading was an integral part of reflexivity and was bound together with practical application of grounded theory methods and reflection in uncovering the significance of differing epistemological approaches for data analysis and theory development. Chapter five discusses the issues of analysis which were shaped by reflexive engagement with methodological and theoretical literature.

Literature relating to collaboration and specific aspects of the findings was accessed and reviewed once final categories had been confirmed and positioned in the conceptual diagram. The initial scoping exercise had identified a large volume of

literature and this was reviewed to follow citations and author's works. Knowledge of existing literature review (Henneman, Lee and Cohen, 1995; Trickett and Espino, 2004; D'Amour et al., 2005; San Martin-Rodriguez et al., 2005; Reid Pont et al., 2010; Petri, 2010; Cunningham et al., 2012; Martin-Misener et al., 2012; Williams, 2012; Haddara and Lingard, 2013; Cameron et al., 2014; Lemetti et al., 2015) and terminology used in association with collaboration helped to target final searches during 2016 and 2017 when literature was reviewed to inform discussion of specific findings. Searches were set after the date of existing reviews and limited to the sphere of healthcare delivery using Medline and the search terms health care OR healthcare OR delivery of healthcare. The terms Collaboration OR integration OR partnership OR cooperation were used to set searches as these terms targeted collaboration rather than team work and were the terms identified, from initial scoping, as those most frequently used in healthcare. Exclusion terms were set to limit literature to that most representative of the research situation. Articles related to leadership and management were excluded in order to focus on collaboration in the delivery of care. Articles relating to child health were also excluded from final searches to focus on collaboration in adult health care situations as interaction with children is likely to differ from that in adults.

The literature, which was accessed through final searching, is assessed and critiqued from the vantage point of the developed theory and is included in the discussion of the findings. The aim of presenting the literature in this way is to convey my reflexive relationship with literature during data analysis and theory development and to finally position the substantive theory within the context of current knowledge and understanding of collaboration.

Conclusion

This chapter has outlined the literature debate within grounded theory and traced the role of reflexivity and criticality in developing a relationship with literature which informs, enlightens and inspires the research process, but does not impose or lead theory development. The initial scoping of the literature is presented and the final search strategies are described in preparation for further review of literature which is incorporated in the discussion of findings (Chapter Seven) and implications for practice (Chapter Eight). The presentation of literature throughout the thesis aims to represent the on-going role of literature as an integral part of reflexivity in the process of theory development.

Chapter Three - Theoretical Orientation

Introduction

The following chapter discusses the use of theory to position, shape and guide the research. The relationship between social constructionism and the interpretivist paradigm aligns the research questions with the grounded theory methodology. The works of Charmaz (2014), Corbin and Strauss (2008) and Clarke (2005) are examined and discussed as the main sources of methodological guidance for the study. Development of the interpretivist paradigm is considered to contextualise current research discourse, and to position the study within the influences of current evidence based practice. Finally, specific theories are discussed and their role in analysis and development of substantive theory is evaluated.

Ontology and Epistemology

All researchers have beliefs about reality, the nature of the world and about the things that are part of day to day life. This leads to questions about knowing and how we gain knowledge. These ontological and epistemological beliefs and questions determine how researchers approach research and which methodological process they use (Lincoln, Lynham and Guba, 2011). I began this study with reflection on my personal view of the world and with consideration of my philosophical standpoint. I identified a position which drew on assumptions from a number of paradigms that all reflected personal and professional experience and beliefs. I was not embedded in one philosophical camp, but identified with a number of similar ontological and epistemological positions, which fit broadly with interpretivist thinking.

Over the course of the study this oncological and epistemological reflection continued and gained in significance. From being a simple preparatory philosophical starting point it became a growing realisation and understanding of the impact theoretical frameworks have on research processes, analysis and interpretation of findings. The following sections discuss the ontology and epistemology which underpin and shape the research.

The Plurality of Practice

Work as a health care professional in medicines management took place in an environment with a mix of beliefs but, in terms of evidence base, value was placed

on positivist research. As a nurse I come from a tradition which values individual perspective and where patient experience is highly valued. It is this pluralistic work environment that influenced my professional appreciation of pragmatic approaches; with plurality of perspective grounded in the meaning of practical application and consequence. My approach, even when working with positivist, scientific evidence in practice, has been to question in a more interpretivist way. These questions in practice, about how evidence applies in social situations, what meaning it has in practice and how people interact to influence the implementation of evidence, have driven my professional path and guided me to professional doctoral study.

This reflection and philosophical horizon scanning was the starting point for a theoretical orientation, which moved my understanding of ontology from broad and general terms to an appreciation of what beliefs about reality, and ways of knowing, mean for investigation in a healthcare practice situation. Social constructionism emerged as a perspective which echoed my own comprehension of the world. Appreciation of how social constructionism developed aided my understanding of the theories and methodologies which contribute to the interpretivist paradigm and informed the theoretical and methodological framework for the study.

Social Constructionism
Social constructionism has developed from a combination of influences, as one of the most important social science perspectives and has been related to postmodernist developments (Gergen, 2009, p. 13) with its roots in phenomenology (Alvesson and Skoldberg, 2009, p. 23). As a perspective social constructionism brings together standpoints related to objective macro social facts and more subjective micro meanings of behavioural social interaction in the interpretive examination of individuals and understanding. The focus is on the individual and the social knowledge which is shared in the construction of society.

Berger and Luckmann (1966) coined the term social construction and sought to resolve how subjective processes and meanings construct the world we share with others and how a 'social stock of knowledge' (p. 56) is built through language and shared routines to act as a recipe for actions (p. 56). There is no single definition or even single description of what social constructionism is, but some writers and researchers share what Burr (2015) calls a 'family resemblance' with similar characteristics. Social constructionism has evolved through the work of a number of theorists and authors over time and according to Pearce (1995) various versions are

not all consistent, but there are some shared assumptions which Penman (1992) outlines as: communicative action being voluntary; knowledge being both a social product and dependent on context and finally that all scholarship is value laden.

Social constructionism has grown as a movement from a time in the mid twentieth century when sociologists were challenging positivist conventions (Bryant and Charmaz, 2007). Concepts of interactionism (Mead, 1967; Blumer, 1986) were used to build an argument for social construction of reality which included action and activity. This generated new methods of study and the idea of agent–centred sociology developed to study people within the situation of daily life. Psychology has also contributed to social constructionist development with the idea that social knowledge is influenced by culture, history and the changing aspects of social life (Gergen, 1973). This aspect of social constructionism acknowledges many of the factors which impact on healthcare and which feature in collaborative situations and includes the consideration of cultural, political and economic aspects of social life.

Tracing the evolution of social constructionism provided an overview of different theoretical perspectives on social interaction and enabled more clarity in terms of my ontological position and that of the study. This position was confirmed through rejection of some constructivist positions which focus on the internal constructions of each individual. Some concepts, such as individual adaptation to environments (Von Glasersfeld, 1991, p.16) broadly fit with my position. While other, more radical, constructivist concepts, of internally constructed experiential worlds, fail to address the collective and interactional aspects of social life and are at odds with a belief in the existence of a world independent of the individual. My guiding ontology sees construction as a social interactive process which takes place over time, and ways of knowing about this place communication, social interaction and environment at the centre of epistemology.

Social constructionism presents a view of society through which collaboration can be viewed. It includes the micro perspectives of individuals and acknowledges the macro social contexts in which interaction takes place. My unanswered questions from practice were related to the processes and meanings of collaboration and how social knowledge impacts on the practice of collaboration in the social world of healthcare. The shared assumption of value laden scholarship (Penman, 1992) also provides a theoretical perspective for my position as a practitioner with a role in the construction of OPAT as a service, but also as a researcher with a role in the construction of research. My relativity to the research situation is acknowledged in a

social constructionist approach and embeds reflexivity as a way of recognising this relationship. This understanding provides a broad conceptual basis from which to view the research situation and from where methodological issues are explored. Specific theories have added to this broad base, but social constructionism provides the foundation for my own theoretical understanding and exploration throughout the study.

Theoretical Orientation to Paradigm and Methodology
Identifying social constructionism as the theoretical orientation for research provides the basis for locating the study within the interpretivist paradigm. This has been acknowledged as an important first step in study design (Denzin and Lincoln, 2005). Establishing the basic ontological and epistemological underpinning principles provides a set of sensitizing concepts (Milliken and Schreiber, 2012) which serve as a way of viewing the world and aligning the research question with the methodology and methods.

The diverse theory base of collaboration and the gaps in the published literature about the patient role in collaborative practice, and in OPAT, prohibit the identification of one single theory or hypothesis to test. This study features the discovery of variables rather than any testing of them (Corbin and Strauss, 2008) and interpretive methods are required to focus on the everyday life of participants in OPAT to examine the experiences and perceptions of participants and to fully explore the setting of the study (Holloway and Wheeler, 1996). A qualitative, interpretive approach provides the means to study interaction and meaning in practice, to account for different perspectives and to acknowledge my own contribution, as researcher, to the research process and to the construction of knowledge during that interpretive process (Flick, 2014, p. 12)

Denzin and Lincoln (2005) present a chronological description of the developments and trends within interpretivist research over time. While this is informative it may give the impression of obsolete approaches. The issue for researchers is not about what approach is in trend and it is not about which paradigm is viewed as superior; the issue for researchers is about which methodology will facilitate understanding and answer the research question. This study draws on the methods and approaches developed by grounded theorists over a period of fifty years and although the background of grounded theory is well documented (Bryant and Charmaz, 2007; Birks and Mills, 2011) there are some key points in its history which

anchor it in the interpretivist paradigm, and which also illuminate the differences in various grounded theory approaches. Understanding these differences informed the decision to select grounded theory as a methodology and specifically to select the approaches which would enable exploration of collaboration within OPAT while acknowledging my own relativity to the situation.

Interpretivist research began with a paradigm shift (Lincoln and Guba, 1990); when positivist traditions were questioned and new beliefs, values and techniques challenged existing assumptions. Research methods developed to describe and interpret human experience within the contexts of life and to explore subjective interpretations, but research approaches retained some positivist traditions. For example Glaser and Strauss (1967) assumed a social constructionist approach in their development of grounded theory and, although their work explored interpretations it also reported positivist concepts such as objectivity and generality. This work is credited with the establishment of respectable and defensible inductive, qualitative research (Charmaz, Albrecht and Fitzpatrick 2000; Charmaz, 2006; 2008) and began the development of grounded theory methodology, but it is a product of its history and carries with it some inherent positivist positions.

Through the development of the interpretivist paradigm the role of researcher has changed in some approaches to grounded theory, from remaining separate from the processes of research, to being recognised by some as part of a socially constructed research process. This movement of position has raised questions of validity and promoted a search for methods of assessing its quality (Flick, 2014, p. 483). Many researchers have sought guidelines for research and grounded theorists have published methods, which are, in effect, step by step procedures for success in qualitative research (Corbin and Strauss, 1990; Strauss and Corbin, 1998). Although these recipes for research have moved away from many of the positivist influences there are still elements of objectivity on the part of the researcher. Many researchers, and particularly novices, have adhered rigidly to these methods (Charmaz, 2008) in an attempt to deliver quality assured research, but in doing so the flexibility and adaptability of research can be lost. The grounded theory approach of this study enabled an interpretivist approach which was able to respond to analysis with methods assured by ongoing critical reflexivity.

Grounded theory provides both methodology and methods, but it does not have to follow a strict recipe. Although not a philosophy, grounded theory provides a way of thinking about data (Morse et al., 2009 p.14) and a set of methods which can be

adapted. This flexibility was significant in the decision to adopt grounded theory as a methodology. It provides support for a way of thinking about collaboration and presents a collection of techniques and procedures which can be used for the purpose of building theory from data (Corbin and Strauss, 2008). The work of Corbin and Strauss (1997; 2008) and the methods of the second generation (Bryant and Charmaz, 2007), twenty first century postmodern grounded theorists provided the flexibility needed to follow collaboration in practice by looking at individual (Corbin and Strauss, 2008) and collective action (Clarke, 2005). These grounded theory methods provided the ability to focus on the situation (Clarke, 2005) and to acknowledge my role (Charmaz, 2014; Clarke, 2005) as an insider and then outsider to OPAT.

During initial planning of this study the methodological position taken by Corbin and Strauss (1997; 2008) seemed to articulate an approach which offered ontological and epistemological fit with the study aims. A book of methods was attractive to me a novice researcher, but application of some of their procedural approach fell short of acknowledging the contribution of researcher and participants during the research process. It became apparent during the development of categories, in the analysis associated with theoretical sampling, that a more emergent approach was needed to explore the perspectives of participants and to accommodate my reflective approach. Contemporary researchers such as Charmaz (2006; 2014) and Clarke (2005) offered a vision of grounded theory methodology attuned to the participant and researcher contribution and provided an expanded range of methods with which to understand and interpret the collaborative situation.

Strauss, as one of the originators of the methodology, appears to welcome these developments in grounded theory (Corbin and Strauss, 2008). He acknowledges his past misconceptions and points to the adaptations he has made in his own approach by selecting or rejecting from past and present grounded theory, as he puts it: 'from this smorgasbord of ideas, based upon who and what I am' (ibid, p 9). Indeed Strauss does change his approach and adapt his methods in successive publications and particularly when writing with Corbin (2008). Strauss, and his appreciation and admiration of Clarke (2005) and Charmaz (2006) provided inspiration to build on the research practice of Corbin and Strauss (2008) and to select methods designed to facilitate social constructionist grounded theory, with reflexivity and interaction explicit in the grounding and constructing of theory about collaboration.

Paradigm and Practice

More recent developments in interpretivist research bring focus on policy (Flick, 2014) and concern with praxis in how to use qualitative research to shape and change the world. New journals disseminate findings and discuss methods, but most recently there has been a crisis of representation and legitimacy (Denzin and Lincoln, 2005), with qualitative research vulnerable in the discourse of evidence based practice. In current healthcare there is a narrow understanding of the kind of research which should inform practice. Meta-analysis and randomised control trials dominate the hierarchy of evidence and it can be difficult to position the value of qualitative research in, what Stronach (2006) calls, the neopositivist world of evidence, and where Denzin (2009) sees qualitative methods as being caught in new standards for evaluating research.

This study takes place at a time where OPAT evidence is very clearly neopositivist in approach and deals in biomedical outcomes of effect and causation. Neopositivist influences in the world of healthcare practice are becoming dominant as metrics are used to quantify almost all aspects of commissioned and delivered care in the pursuit of efficient, cost reduced care delivery (NHS England, 2016). In the drive to make savings and improve efficiency the cost effectiveness of OPAT, and other new models of care, is the driving force for their development, along with the counterbalance requirement of maintaining quality (NHS England, 2017c). Neopositivist approaches are not only underpinning the biomedical therapeutics evidence base, they are also influencing the measurement of quality and performance in the metrics of healthcare. But there remain areas of practice which positivist approaches do not address and cannot uncover.

The delivery of evidence based practice is a triad of interaction between research, patient perspectives and practitioners (Sackett, 2002) within the situation of healthcare, and it is this interaction that qualitative research can access. Understanding interaction in current healthcare requires consolidation and learning from all phases of interpretivist research, to develop approaches which can articulate the intricacy and complication of social relationships within the contexts of healthcare environments. It is the intricacy and complexity of relationships and situations in healthcare which do not fit into metrics, but which never the less are essential to the human interaction of evidence based practice and the outcomes of care.

The grounded theory methodology for this study accounts for the practice situation of OPAT and facilitates understanding of collaborative interaction between patients and professionals involved in the delivery of evidence based care. The methodology and methods provide a valuable contribution to the evidence base which supports practice, and which stands with positivist studies, to add aspects of knowledge about collaboration missing from the positivist picture of OPAT. The methodology provides an interpretivist approach able to produce quality in research yet still be flexible and responsive enough to follow interaction in practice.

Twenty First Century Grounded Theory Methodology

The reconstruction of grounded theory in the twenty first century has drawn on the original flexible approaches of Glaser and Strauss (1967), but also adopts a specific position which considers the research process as a social construction and acknowledges the researcher's prior knowledge and beliefs. Rather than attempting to become a blank slate the researcher recognises and scrutinises theoretical preconceptions and reflexively examines research decisions. This approach asks more than the application of procedure and encourages innovative methods for data collection and analysis in order to develop new understanding (Charmaz, 2008). The aim of social constructionist grounded theory is to collect data which informs insightful understanding of socially constructed worlds.

Charmaz is recognised as one of the originators of social constructionist grounded theory (Birks and Mills, 2011), although she calls her approach constructivist (Charmaz, 2000; 2006) in an attempt to differentiate her work from the earlier conventional and more objective social constructionist research (Charmaz, 2014). She uses the term constructivist to emphasise subjectivity, but distances her methodology from individualist, radical subjectivism and aligns her approach to views which stress social contexts, interaction, interpretive understanding and learning, which is embedded in social life (Charmaz, 2008, 2014).

This approach to grounded theory is a good fit for my theoretical orientation and provides a position which acknowledges my contribution as a researcher to the research situation and interpretation of data. Grounded theory for Charmaz is a method for understanding participant's social constructions, but also a method that researchers construct throughout the research process (Charmaz, 2008). There are core grounded theory methods, but how and why these methods are used emerges through interaction during the research and through interaction with data. Some

grounded theorists see specific methods and theory development (Hood, 2007) as essential to grounded theory studies, but for Charmaz grounded theory offers guidelines which can be adapted to solve research problems whether theory development is the aim or not.

Charmaz provides an approach which encourages thoughtful consideration of methods. Rather than following a step by step procedure, imaginative methods are selected with the ability to respond to the research situation and to developing data. Constructionist grounded theory, and particularly the work of Charmaz (2008; 2014) encourages thought about the research situation, scrutiny of preconceptions and reflexivity throughout the process. Use of this methodology has moved both the research and myself as the researcher beyond the simple application of grounded theory methods, to an active appreciation of social constructionist grounded theory methodology in the production of an interpretive portrayal of collaboration.

Situational Analysis

Clarke's situational analysis (2005) is an adapted model of grounded theory which uses some traditional grounded theory methods, but aims to address some areas of weakness and moves grounded theory to a postmodern standpoint. Clarke's approach reframes data analysis to consider everything within the studied situation and uses three different types of situational map as analytical tools to provoke deeper analysis of complex situations. This adaptation of grounded theory is more engaged with exploring complexity, intricacy and variation than more traditional approaches. The focus is not only the action and discourse of the human actors, but also the sociocultural, political, organisational and nonhuman elements of the situation.

Clarke bases her approach on Strauss's collective work (Clarke, 2003) and builds on that work using cartographic approaches to map the elements and conditions within the research situation. Three types of map are used in situational analysis: situational maps articulate the different elements in the situation and the differences framed by the situation and analyst. This map looks at human, non-human, symbolic and discursive elements within the data. Social world maps represent collective relations, commitments and sites of action and this map aids analysis of social and symbolic interaction where individuals participate in different social worlds. Finally positional maps plot positions, gaps and silences in the data to

represent the variety of positions within the data with the aim of identifying gaps and situating the research within broader contexts.

These maps are intended as analytic exercises which are supplementary approaches to traditional grounded theory, but which are appropriate to capturing and analysing contemporary contexts, with the potential to situate research socially, culturally, organisationally, geographically, visually and discursively (Clarke, 2003). This all-encompassing, inclusive approach allows what Clarke calls thick analysis, which is rich, detailed and views the whole situation as the unit of analysis (Clarke, 2003).

Clarke finds traditional grounded theory lacking (Clarke, 2005) in the ability to view differences, multiplicity and power honestly. Her solution is to reframe analysis by maintaining roots in symbolic interactionism, but enhance grounded theory's postmodern aspects. This shift in methodological approach results in analytical methods which bring interpretation of the broad situation and moves away from a focus on action alone. Clarke, Friese and Washburn (2015) highlight that situational analysis has some distinct strengths and contributions to make to grounded theory in enhancing reflexivity and clarifying differences.

These methods of data analysis provide an approach which accounts for the multiple contributions and different perspectives involved in collaboration within the situation of delivering OPAT as a service, treatment and as part of care. The approach also acknowledges the potential of non-human aspects of this situation, which, in an area of clinical equipment and increasing technology is important to consider. Situational analysis methods facilitated a broad understanding of the meaning, influencing factors and consequences of collaboration.

Clarke focuses on reflexivity and, like Charmaz, the experience of the researcher is explicit in her methods. Unlike more traditional grounded theory, which has been criticised for unrealistic expectations of objectivity from researchers and failing to account for the full situation of the study (Bryant and Charmaz, 2007; Clarke, 2005), situational analysis places the researcher as part of the situation. Clarke comments 'we are, through the very act of research itself, directly in the situation we are studying' (Clarke, 2005, p12). As a recent insider to OPAT collaboration my knowledge and existing relationships impact on my view of the situation and Clarke's methods provide mechanisms for critical self-exploration as well as detailed depth of analysis as an integral part of the study design.

Clarke (2005) has discussed that part of 'pushing grounded theory around the postmodern turn' is to 'assert analytic sufficiency … rather than the pursuit of formal theory' (p. 19). She asserts that in situational analysis analytics and theorising replace the development of 'substantive or formal theory' (p. 28). But this would seem to fall short of a title of grounded theory and offers no comfort or resolution to a researcher in the midst of messy analysis. While Clarke's requirement for detailed, thick analysis is important for insightful and grounded interpretation, the notion of analytics rather than theory was less comfortable in terms of a methodological fit.

The detail of theory building tends to be given little attention in the literature (Dick, 2007), but the aim of substantive theory is to understand a phenomenon within a defined situation (Birks and Mills, 2011) and it remained the aim throughout this study in order to inform the practice of collaboration. Prior to data analysis I viewed the difference between analytics and substantive theory as a matter of semantics, but in practice the difference between analytics and theory development was one of moving beyond simple representation to insightful understanding and sense making. Gregor's (2006) taxonomy proposes that theory has a number of purposes; for analysis, explaining, predicting and for design and action. The central importance of this study is in developing substantive theory which will inform collaborative practice, and without theory development this would have remained incomplete. The tools of data analysis, the reflexivity and the consideration of multiplicity, difference, heterogeneity and complexity were all methodologically appropriate aspects of situational analysis for this study but, the apparent lack of a clear theoretical product was not. Therefore, this grounded theory study drew on the works of Corbin and Strauss for initial guidance and with analytical tools, influence and insight from Clarke (2005), but methodologically the study was inspired predominantly by Charmaz (2014) and the aim of substantive theory production.

Developing and Expanding the Theoretical Orientation
Throughout the study a number of theories are used to support analysis and to solve analytical problems. These theories augment the broad perspective of social constructionism and provided ways of conceptualising data. Rather than forming a rigid framework for the development of hypotheses, these theories are used to explain, refine and challenge concepts during the course of analysis. The development and the expansion of the theoretical orientation of the study have

significance in the development of the substantive theory, but also in my development as a researcher.

Symbolic Interactionism

Symbolic interactionism is one of the founding theories of social constructionism (Burr, 2015) and the interpretivist paradigm (Herman-Kinney and Verschaeve, 2003); it focuses on the study and understanding of human action and interaction in groups (Blumer, 1986). As a theoretical framework it fits well with the concept of collaboration. It traces human communication and interdependency (Gergen, 2009) and many scholars draw from one centre of its development in Chicago, and in the work of Mead, to aid understanding of communication and society. This approach has been central in the work of many social constructionist researchers and is core to the work of some grounded theorists (Strauss 1993; Charmaz, 2014; Clarke, 2005).

The main focus of symbolic interactionism is the significance of the 'social act' (Mead, 1967) which involves a three part process; an initial gesture, a response and a result. The result is the meaning associated with the 'act' and is part of individual thinking, being an individual self and part of the social process. Through interaction and communication of the social act we develop shared understanding of objects and actions.

Objects are defined and named by people according to their use in set situations (Charon, 2010) and the meaning of an object changes through interaction over time. Some objects and actions are symbolic and take on specific meaning, which is universally understood in a number of situations. Symbols develop to have an intentional meaning, to be conventional and represent something specific and can be seen as part of the social stock of knowledge discussed by Berger and Luckmann (1966).

Social objects and symbols can be physical objects, but they can also be less tangible such as gestures and acts, the past and the future or emotions and perspectives. This shared meaning of objects and symbols is the foundation of social action and interaction. As people interpret the meaning of objects and actions in a situation they respond based on their interpretation of the shared meaning (Blumer, 1986; Charon, 2010; Milliken and Schreiber, 2012).

The concepts of mind, self and society are central to symbolic interactionism. Through interaction the mind interprets meanings and enables understanding. The concept of self allows self-reflection and is the way personal identity and conduct is shaped (Blumer, 1986). The self develops through interaction with other people in different situations and builds the capability to interact (Milliken and Schreiber, 2012). The mind and the self enable the ability to interact, take on roles and to see oneself from the viewpoint of others. Shared understanding of symbols allows our ability for 'role-taking'; when we speak or act a symbol we can empathise with the listener and understand the shared significance of the symbol. It is through taking on roles that we become conscious of ourselves and of others. Society is a network of these social interactions with meaning assigned to actions by the use of symbols (Leeds-Hurwitz, 1996).

Symbolic interactionism is appropriate to the study of collaboration as it differs from other social psychology approaches in its examination of perspectives rather than attitudes. Rather than focusing on the individual's internal response, based on an existing attitude, symbolic interactionism looks at perspectives which guide action in changing interactions and different situations. Different perspectives may arise from the different social groups an individual communicates with (Strauss, 1993) and situations with specific social and historical backgrounds influence meaning and shape interactions (Katovich and Maines, 2003). This focus on the significance of interaction and perspective in different situations and social groups is particularly informative in the study of collaboration in healthcare. Care situations give rise to one to one interaction, but also multiple interactions in differing situations which feature many social groups across organisations, departments, professions and the users of services. Symbolic interactionism provides a framework for interpreting and understanding the perspectives of those who collaborate and the meaning of collaborative interaction between different individuals in shared situations.

Understanding symbolic interactionism within a broader context of social constructionism informed the development of research questions. The concept of the social act provided me with a framework to consider what research questions I should ask about collaboration. The idea of a gesture, a response and a result in interaction promoted questions to explore the process and manifestations of collaboration, in terms of how it is expressed in practice, the mechanisms by which it takes place and what consequences it has. The concept of shared meanings through symbols which may be verbal, physical or far less tangible, presents an array of dimensions which may affect a social act. This prompted the aim of

developing a theory to explain the dimensions of collaboration and clarified questions which would explore these dimensions in terms of the factors which drive, influence, facilitate and hinder collaboration within the social situation of OPAT.

Mead's concept of Self (1934; 1967) and its contribution to self-identity, self-reflection and understanding informed the research design. My adoption of reflexive methods enabled my own identity and understanding as practitioner and researcher to be part of the research process, and methods of data collection allowed perceptions of identity and meaning to be explored with participants. Each participant or group was asked about their role in OPAT and the choice of semi-structured interviews enabled individual perspectives to be explored.

The use of symbolic interactionism, within the broad perspective of social constructionism, allowed consideration of collaboration beyond my own perceptions of it. It broadened my conceptual horizons about what collaboration may be from different perspectives and enabled more critical thought about the potential for processes, perspectives, actions and meanings which needed to be captured and analysed as part of the research process. Understanding the broad theoretical perspective of social constructionism and the theory of symbolic interactionism identified that it was both the act and the meaning of interaction in the collaborative situation that should be the focal point of the study. This focal point was not changed, but my own analytical and theoretical view of it was refocussed during data analysis and this is discussed in the following section.

Evaluating Symbolic Interactionism
Charon (2010) discusses symbolic interactionism as one of many perspectives that we may draw on to understand the world and Plummer (2000, p. 205) points out that many notions about a socially constructed world are either compatible with, or were produced by, symbolic interactionism. The perspective of symbolic interactionism represents interdependency and fits well with the communication and interaction of individuals involved in collaboration in practice. It is a theory frequently used in interpretivist studies and it contributed to the social constructionist approach used during study design, data collection and during analysis of individual perspectives in collaboration, but it proved less relevant during analysis of the collective situation.

The perspectives of the individuals involved in collaboration were explored first by gathering and analysing data collected during interviews and focus groups. The intension was to establish individual perspectives on interaction before combining data to gain an overview of the interaction taking place in the situation. During analysis of combined data I re-evaluated the theoretical contribution of symbolic interactionism. As a framework it successfully supported interpretation of individual participant perspectives on action, communication and the interaction between individual participants, but the use of symbolic interactionism presented limitations during analysis of the whole situation.

At the beginning of the study I accepted symbolic interactionism based on Blumer's premise (1969) of human action and meaning being determined by, and derived from, social interaction and personal interpretation. This proposition supported the research design which captured individual perspectives and social interaction. It also supported analysis of most, but not all, of the categories emerging from the combined data. The influencing, and more structural, elements which emerged from analysing collective data were more difficult to interpret using the lens of symbolic interactionism. Analysis of these concepts required a refocused view of the situation beyond individual perspectives.

Ongoing reflexivity captured my developing view of the research situation and also the challenges in operationalising the theoretical concept of symbolic interactionism. My initial use of symbolic interactionism was to focus on interaction and this placed the healthcare situation as a background context for interaction, with individual perspectives in the foreground. The OPAT situation, where collaboration takes place, had been part of the research design with consideration of practical and ethical issues in terms of the site and setting of the research. The community and hospital settings had been considered in terms of the professionals and service users found there, and the complexity of interaction taking place, but my main focus had been on the action and perspectives of individuals. Combining these individual perspectives had the effect of refocusing my analytical view to see the situation in detail, and as an integral part of collaboration rather than simply the setting for it.

Data collection had succeeded in gathering individual perspectives of the situation and my role as an 'insider researcher' (Costley, Elliot and Gibbs, 2010) contributed to the rich data collected during conversational interviews with participants. My familiarity with OPAT and the practice setting allowed participants to refer to the complexity of the situation easily, without stopping to describe and explain the

organisation, clinical environments or organisational systems. This produced detailed information with the situation implicit in experiences of collaboration. It was only when combining these perspectives that the structural aspects of the situation emerged as factors influencing the interaction taking place. The detail of this analysis is discussed in chapter five and the following paragraphs present the critical evaluation of symbolic interactionism which took place to inform the ongoing analysis.

Criticisms have been made of symbolic interactionism for being limited to small scale micro aspects of social action and being unable to conceptualise structure (Giddens, 1979, p. 565; Carter and Fuller, 2015). This became apparent when viewing categories from the collective rather than individual perspective when aspects of social structure as well as the action and agency of individuals emerged. Snow (2001) criticises Blumer's core principles of meaning, interaction and personal interpretation for diverting attention from issues of structure. This only became apparent when viewing the situation from the collective, combined overview where structural issues, common to all participants, appeared above their individual action and interpretation. This analytical realisation prompted engagement with authors who take a broader view of symbolic interactionism and theorists who present more integrated theories which encompass both agency of individuals and structure of situations.

Other authors have expanded Blumer's three basic premises and Charon (2010, p28) identifies five principles which link symbolic interactionism more closely to situations and the influence of structures. Charon's five central ideas outline that lifelong social interaction influences action, and people constantly engage in the process of thinking and defining the situations they are in. Human action is a result of what takes place in those situations and this makes people active beings within their environment. For Charon (2010) the broad focus of symbolic interactionism is to understand human action and interaction within the definition of the situation, but how, the agency of individuals and the structure of situations fit together is a topic of debate.

Other authors defend symbolic interactionism as capable of accounting for structural influences within each situation and they see this as moving it from a theory of micro level agency to a perspective which is capable of conceptualising relations between agency and structure (Snow, 2001; Dennis and Martin, 2005). However, few studies articulate this ability and most remain rooted in micro level analysis (Carter and

Fuller, 2015). The theoretical capability of symbolic interactionism to support interpretation of structural issues proves difficult to translate into analysis of data. In order to interpret the full situation of collaboration, which includes the agency of interaction and structural influence within the situation, the theoretical view was broadened.

Re-evaluation of symbolic interactionism as a guiding theoretical framework was a moment of realisation for me as an interpretivist researcher. Both ontology and epistemology have direct implications for the research process and the interpretation of findings. Craib (1992) points out that just as we use the real world to develop theory, we also use theories to help understand our findings in studies of the real world. The selection of any theoretical framework for the research, however good its ontological fit and relevance, has the potential to narrow interpretation of the data. Craib (1992) calls this the 'crossword puzzle trap'; using theory as a framework can lead to seeing findings only in terms of the framework, rather like only seeing words which may fit into a crossword puzzle. The frame of Blumer's symbolic interactionism had the potential to guide consideration of only the micro perspective of collaboration and to produce findings which only relate to interaction and individual perspective. Understanding the broader theories of social constructionism to inform research design and detailed methods of analysis provided sound methodological approaches which uncovered complex findings beyond the scope of the framework. This highlighted the need for an expanded theoretical perspective in order to understand the complexity of collaboration including the structural influences which are part of the situational picture of collaboration in practice. The theoretical framework was refocused from the narrow vision of Blumer's (1986) presentation of symbolic interactionism to a theoretical orientation including a broader interpretation of symbolic interactionism and other theories which account for the dichotomy of agency and structure within social situations.

Action, Agency and Structure
In refocussing the theoretical orientation it was necessary to review theories for their relevance in addressing both agency and structure and Gergen (2009) sees the review of past theories as a necessary part of theorising in social construction. Overview of social constructionism presents a typology of theories which view social construction comprising actors and structures, but differ in perspective and in the

distinction drawn between the agency of actors and structure. Agency refers to the micro level actions of actors, or collections of actors, and structure is seen as the macro influences, or sometimes large scale interaction within society (Ritzer and Stepnisky, 2017). Turner (2008, p. 493) groups these theories into those which produce deterministic accounts with little attention given to human agency, those which emphasize agency without reference to the influences or causation of social structures, and thirdly in between these extreme positions, those which combine agency and structure. The two extreme positions can be seen as different perspectives on the same situations, but can also be viewed as failing to account for the complexities of society (Hildenbrand, 2007). The theoretical orientation developed to support analysis and interpretation of data. It centres on social theories which attempt to address the complexity of social situations, and which present a more integrated relationship between agency and structure.

The Iowa and Indiana School of Symbolic interactionism
Theorists from the branch of symbolic interactionism which developed in Iowa were also concerned with social construction and interaction, but at first used only positivist approaches to investigate the relationship between the self and social structure. Later proponents took a more pragmatic view of symbolic interactionism and Stryker, from the Indiana school, supported both qualitative and quantitative methods. Stryker's work developed Mead's concepts and incorporated elements of role theory and socialisation to explore the structural aspects of interaction (Stryker, 2008). He sees social roles emerging from reciprocal influences of both interaction and structure with symbolic cues influencing action. This work builds from the individual to the situation within a larger social structure and presents reciprocity between individuals and structures. Stryker's more structural approach to symbolic interactionism appears to attempt to connect the micro and macro aspects of investigating the agency of individuals and social structure, but the main work of connecting agency and structure has fallen to others. Giddens theory of Structuration (1984) implicitly includes symbolic interactionism (Carter and Fuller, 2015) to theorise about interaction, communication and meaning, but it also encompasses a reciprocal relationship with structure.

Structuration Theory

A number of theorists have taken up the constructionist approach of Berger and Luckmann (1967) by focussing on the interaction between social structure and individuals. Bourdieu (1977), Bhaskar (1979) and Urry (1982) have all been termed structurational theorists (Jones and Karsten, 2008), but it is the work of Giddens which is most associated with structuration theory (Stones, 2005; Hildenbrand, 2007; Jones and Karsten, 2008). Giddens's numerous works have set out and developed his rather densely written theory based on social practices, which he sees as central to the interdependence of structures and the agency of social actors. It's difficult to provide individual definition of structure and agency from Giddens's work as his theory hinges on the notion of duality, with no clear boundary between them. For Giddens (1984) structures have multiple dimensions and he uses somewhat unwieldy terms to describe three types of structure: domination, signification and legitimation which can be more clearly named power, meaning and norms (Stones, 2005). Structures can be broadly seen as institutions and the established ways of doing things that exist within society which act as a pattern for ongoing social action and interaction.

Giddens proposes that people hold a stock of knowledge about structures within their memory and draw on this knowledge to inform actions within particular situations. Giddens sees people as agents rooted in structural contexts drawing on knowledge of the context to engage in social action (Stones, 2005, p. 17). Knowledge of structures within a context enables, or constrains, action and facilitates access to resources which enable practice; and practice itself creates and recreates structures.

Giddens' vision of structures being dynamically produced and reproduced by agency provided the theoretical basis for analytical interpretation of structure within the situation. The idea of structure being continually interpreted and recreated by the agency of actors, and in turn enabling or constraining action, provided a frame through which to see an inseparable relationship between agency and structure which forms the scaffold for future action. This 'duality of structure and agency' (McLennan, 1984) proved to be the key in interpreting collaboration which is continually influenced and directed by the relationship between situational structures and agency, but which also contributes to the recreation of existing social structures in healthcare.

Structuration theory is distinctive in its conceptualisation of structure and agency and in its focus on the human practices at the centre of the relationship between them (Stones, 2005), but it is open to criticism for some lack of clarity about detail, cumbersome terminology and for operating at an abstract ontological level (Parker, 2000; McLennan, 1984) which fails to engage in methodological issues. Despite the limitations of structuration theory it presents a view of interaction which addresses the complexity of social situations and promotes new thought about substantive situations. I have used structuration theory as a tool to support conceptualisation of the relationship between situational structures and the interaction taking place within the situation. It has been used in conjunction with symbolic interactionism to refocus analytical thought to include the agency of individual collaborators, the interaction between them and influencing structural aspects of the situation which influence, form and reproduce ways of interacting. The duality of agency and structure provided a way of thinking, between subjectivity and objectivity, between micro and macro views, to inform a more integrated understanding of a socially complex practice situation. This facilitated the development of a conceptual model of collaboration that moved beyond a simple one directional process to a multidirectional, dual relationship between the mechanisms and agency of interaction and the influences of structure as part of the collaborative situation.

Conclusion

This chapter has explored the ontological and epistemological underpinnings of the study. The relationship between social constructionism and the interpretivist paradigm has been aligned with the works of Charmaz (2014), Corbin and Strauss (2008) and Clarke (2005) which provide guidance for the grounded theory methodology used. The value of the methodological approach has been positioned within the discourses of current evidence based practice and the use of symbolic interactionism to shape analysis has been explored. Finally the use of structuration theory to conceptualise and explain the relationship between the agency and structure found within data is discussed in terms of substantive theory development.

Chapter Four - Research Design

Introduction

Chapter four begins with an overview of the study design and consideration of the NHS research situation. Methods of maintaining reflexivity throughout the study are discussed and the uses of methods which are associated with grounded theory are described. Theoretical sampling, data generation and constant comparative methods of data analysis are explained. The chapter ends with discussion of the ethical issues involved in the study.

Study Design

This grounded theory study is set in an NHS Foundation Trust and involves the participation of patients and staff with experience of OPAT. The study design is framed by the NHS context, and elements of flexibility and adaptability in the timing and setting of data collection are incorporated to allow for the prioritisation of patient care and service needs. The sample consists of staff, within acute and community services who deliver OPAT, and patients who have experience of receiving treatment. Interviews and focus groups are used to generate data which inform investigation of the research questions. Grounded theory methods are used to progress the study through constant comparative analysis and theoretical sampling until a point of data saturation and then on to theory development.

Consideration of the Research Situation

The context of my recent employment within the Trust, and specifically as project lead for OPAT, presented a number of advantages and some challenges which are incorporated into the research design and discussed within the following methods section. I began the development of this research study as an 'insider researcher' (Costley, Elliot and Gibbs, 2010) with a unique position within the organisation. I had knowledge of the project and of the staff involved in the service, awareness of the environment, familiarity with the processes of OPAT and an understanding of the changing services within the Trust. My change in employment removed my status as an insider researcher, but I remained socially situated (Vygotsky, 1962; Lave and Wenger, 1991) in terms of personal and professional contexts for some time and, although this study is not insider work- based research, the research process does require many of the considerations of insider research.

The progress of the study provides both an emic and etic view (Kottak, 2006) of the situation. During the course of the research I transitioned from being part of the OPAT team, and viewing the culture from inside the team, to having a viewpoint outside the group and the organisation. Awareness of both etic and emic views were informed through reflection and, rather than developing as opposing and set positions, these viewpoints occur along a continuum, as described by Hoare, Mills and Francis (2012). Awareness of this emic to etic continuum increased throughout the study and eventually it added to a growing theoretical sensitivity during data analysis, but it proved a challenging concept to manage during data generation as I positioned myself within the situation along the continuum of previous project lead, team member, community nurse and researcher. Reflexive methods feature as an important way of realising this changing perspective.

The methods used aimed to capture detailed accounts of collaboration from the perspectives of all those involved in OPAT, but also to understand how collaboration is influenced by the practice situation. Initial scoping of the literature identified that determinants of collaboration involve organisational aspects as well as the interaction between individuals (San Martin Rodriguez et al., 2005) and this, together with underpinning social constructionism, informed the design of the study. Methods were selected to collect and analyse data from individual perspectives and then to join these perspectives together to develop understanding of the combined, collective and constructed aspects of collaboration situated in practice.

Designing the study in this way required a combination of methods which would capture detailed data, allow individual and situational analysis, acknowledge my own changing position as researcher and seek to develop a substantive theory about collaboration. It was not possible to find one single grounded theory approach which was able to deliver these requirements, so a bespoke approach was used to tailor the methods to the research requirements. Rather than adopt a pre-existing grounded theory package, I selected and developed methods, reported by a number of grounded theorists (Charmaz, 2014; Corbin and Strauss, 2008; Clarke, 2005) which enabled investigation of the complexity involved in collaboration in practice.

Reflexive Methods
Reflexivity is seen as an essential qualitative approach (Corbin and Strauss, 2008) and as an obligation which must be part of research design (Charmaz, 2006; Clarke, 2005; Hand, 2003). Through reflexivity the researcher becomes aware of

personal perspective, decision making and feelings. This facilitates an audit trail recording the part of the researcher within the research process (Corbin and Strauss, 2008), but the extent of reflexivity in a study is dependent on the researcher's ontological and epistemological position. Reflexivity has been defined in a number of ways, from maintaining a self-critical view to narcissism and solipsism (Holliday, 2007) and some researchers have rejected reflexivity outright (Cutcliffe and Mckenna, 2004; Glaser, 2001). The researcher's theoretical orientation influences interpretation of reflexivity and understanding of its contribution to the research process.

The constructionist perspective of this study recognises that the research process itself is constructed with researcher and participants as part of the research. Maintaining a social constructionist orientation does not require that the researcher 'makes' any aspect of the research but, as Alvesson and Skolderberg (2009) discuss, the construction process is a social undertaking. Reflexivity acknowledges and seeks to understand this construction of the research involving researcher, participants and the research situation. Mead described reflexivity as 'bending back on itself'(1967), but it is more than looking back at experience, it can be seen as a spiral (Steier,1991) which incorporates multiple perspectives, examines interaction, consequences and opens up new perceptions of the research situation.

Grounded theory methods promote and support reflexivity and Clarke (2005) specifically addresses reflexivity as a way of ensuring transparency of method and analysis. The approach of this study concurs with Clarke's view and uses reflexivity to position the researcher as 'the learner in critical inquiry' (Clarke, 2005). Taking this stance within the study design acknowledges the research participants as equals, peers and colleagues with recognition of their expertise, and my researcher position as a recent OPAT insider is transparent within the study. Extracts from memos made throughout the study, which were made to record thoughts and reflection on the research process, are included to illustrate the integral role of reflexivity throughout the research. The extracts have been selected to demonstrate how the analysis and synthesis involved in reflexivity contribute to key research decisions. The following memo deals with reflexivity itself and records my early mental grapple to differentiate reflexivity from the reflective practice of my daily professional life. This memo also captures early consideration of the research process as a social construction in its own right.

Memo Extract 2: October 2013: Getting to Grips with Reflexivity
I have been looking at the nature of discourse, socialisation and social identity. How does contact between professionals and between professionals and patients impact on their work and life? How will my interaction with participants impact on the research? How do my experiences and knowledge shape the research?
It is now that I realise that the looking back of reflexivity is not just thought, but a spiral of thought and reflection on previous thinking:
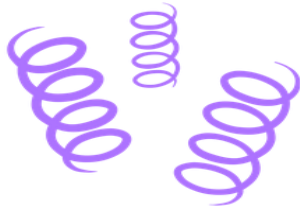
Reflexive loops of thought and learning revisiting decisions in the light of new knowledge or reframed knowledge.

This is a combination of Schon's (1991) reflection in action and on action that I am familiar with, but making the research process and the production of knowledge the focus of reflective inquiry. Robson (2002) identifies reflexivity as 'an awareness of the ways in which the researcher as an individual with a particular social identity and background has an impact on the research process' and Gardner (2006) comments that reflexivity should not be conflated with reflection, but is a particular kind of reflective activity.

Now I realise the value of time to think and the value of pausing to reflect and record before moving forward with research. I need to think about socially constructed discourses and social constructionism and how these concepts relate to me as previous OPAT project lead, as a nurse, as a community nurse and as a researcher. How do I, together with participants, shape this study?

Tools of Reflexivity

Memo writing
Memos are written records of thoughts, feelings and ideas (Birks and Mills, 2011) and are fundamental to the development of a grounded theory (Lempert, 2007). Some researchers confine memo writing to analysis and see memos simply as 'written records of analysis' (Strauss and Corbin, 2008, p.117), beginning with the first interview (Wiener, 2007). But this study features memo writing from the beginning of research design as a means of recording thoughts, developments and the deliberation of research decisions. Charmaz (2014) discusses writing memos as a pivotal step between analysis and writing draft documents and recommends keeping a reflective journal as a way to expedite memo writing. I began with both a research journal and memos with the intent of keeping prior experiences and assumptions separate from data as identified by Charmaz (2014), but as reflexivity developed, and as memos became more analytical, the journal became more a record of literature and the research process. Memos became differentiated and

developed into two types; those which reflexively examined the impact of reading, experiences, prior assumptions and feelings on the research process and those which recorded analytical decision making and the developing theory.

<u>Reflexive maps</u>
Clarke (2005) advocates using mapping techniques as analytic tools and I also used them as implements for reflexivity. At the beginning of the study I applied the techniques to my own situation as a researcher and began by mapping potential influences. Relational and social world mapping techniques revealed my worlds of social action and promoted thought about emic and etic viewpoints. Positional maps were used to locate my knowledge and skills within the situation of the research study and to identify any gaps which required resourcing. This process had a number of purposes; first it provided experience with the analytical tools prior to data analysis and second it was the starting point of reflexivity. The process of relational and social world mapping was adapted to consider my own experiences and influences and this facilitated reflexive thought. The mental process of thinking while physically drawing the map, and visually securing trains of thought provided new perspectives and supported the reflexive process.

Accessing the Research Situation: the Role of the Gatekeeper
Conducting research within an NHS organisation requires scrutiny and approval from a number of gatekeepers who have responsibility for protecting potential research participants and who control access to the research site. University Ethics Committee, NHS Ethics Committee and NHS Trust Research and Development Department all approved the study and granted access to patients and staff within the situation of OPAT (Appendix A, B and C). In addition to these mandatory authorities an additional gatekeeping role was included in the research design to assist with recruitment and access to participants.

An OPAT nurse acted as gatekeeper inside the Trust to identify potential participants, provide them with the appropriate participant information and seek approval for me as researcher to follow up with telephone or email to discuss the study. The assistance of the gatekeeper had the advantages of providing assurance of my credibility and trustworthiness (King and Horrocks, 2010) to patient participants and also in reducing the likelihood of potential staff participants, as my recent colleagues, feeling personal obligation to me to take part in the study. The gatekeeper also acted as an additional study contact for participants within the

research site and acted as a means of reporting researcher location during community interviews in line with lone working safety practices.

Throughout the study period the Trust was undergoing reorganisation which affected many clinical areas and services. The gatekeeper provided updated information about changes in Trust services and environments, some of which had implications for accessing and interviewing participants. This highlighted the benefits of a flexible study design, which could adapt to the changing research environment and accommodate the needs of participants. Vaughan (2004) argues that studies in unstable environments require flexible models of conceptualising the research process and within current NHS environments change is a frequent, and almost constant, environmental factor which must be accounted for.

The use of a gatekeeper role can potentially present disadvantages associated with recruitment, as any gatekeeper may intentionally or unintentionally select participants who will present specific views (King and Horrocks, 2010), or may even make non participation decisions on behalf of patients (White, Gilshenan and Hardy, 2008), but my time working in the Trust assured me of the appropriateness and trustworthiness of the gatekeeper. Early involvement in study design ensured no conflict with the gatekeeper's clinical role (Whicher et al., 2015) and regular briefings ensured discussion about the selection of the first participants and identification of subsequent participants. These discussions ensured mutual understanding of the gatekeeper's role in approaching eligible individuals to inform them of the study, provide information and use clinical judgement when identifying patients, but also of the need to maintain the gatekeeper's clinical obligations as a priority.

Sampling

Grounded theory uses a unique method of sampling called theoretical sampling which relies on the researcher to make ongoing decisions about who, or what, will be a source of data to inform and progress the developing theory (Morse, 2007). These ongoing sampling decisions are based on analytic grounds (Sandelowski, 1995), but, as with all other types of research, there are some principles which guide the theoretical sampling process. Techniques of sampling must be used effectively to access participants who are able to provide data, and research skills are required to obtain data for analysis (Morse, 2007). Within theoretical sampling a number of techniques can be used in order to meet analytical needs (Coyne, 1997),

but the first technique must be concerned with finding the starting point for data generation. This first step sets the direction of the study and the considerations which contributed to this decision and other aspects of the sample size are discussed below.

<u>Sampling Strategy</u>
Consultation with the gatekeeper identified two main active clinical pathways operating within OPAT; one being a set course of treatment for a specific long term condition and the other being a pathway for patients who require varying courses of treatment and who may have an infection caused by a range of conditions. The differences between the two pathways were minimal and were identified as being in the format of documentation and the length of treatment. There was no difference in the systems and processes of care involved in each clinical pathway and so both pathways were included in the sampling strategy. The aim was to recruit a patient receiving care according to each of the pathways to investigate different patient situations and any potential differences and similarities in collaboration.

<u>The First Participants</u>
A purposive sampling strategy was used to identify patients as the first participants and the process for this was devised in discussion with the gatekeeper. This approach identified two participants who were each experiencing one of the two different OPAT pathways and the collaboration associated with delivery of treatment and care. The gatekeeper identified patients who had commenced a pathway after the agreed start date of 1st April 2014 and invited them to participate, giving each information about the study (Letter of Invitation Appendix D and Patient Participant Information sheet Appendix E). The first patient in each pathway agreed to take part in the study, and these participants are identified within the study as Participants A and B.

<u>Sample Size</u>
The size of a sample in a grounded theory study is less to do with the number of participants and more to do with the significance of the collected data (Bagnasco, Ghirotto and Loredana, 2014), but appropriate numbers have been identified as twenty to thirty (Creswell and Miller, 2000). As Mason (2010) identifies there is no detailed discussion of why particular numbers of participants are appropriate in any methodology and the sample for this study was guided by the research question, the analytical processes and the principle of saturation.

Judgement of an appropriate sample size was based first on identifying the people who would give a detailed account of collaboration in practice and provide information relevant to the research questions. The sample consists of the main group of people involved in the OPAT collaboration associated with specific patients and their designated pathway of treatment. The aim was to adapt the circle of care approach (Kitson et al., 2013) used to map medication communication activities across a patient's circle of care, but instead of communication the focus was collaborative activity and those individuals and teams involved in collaboration. This approach ensured that all those involved in collaboration could be identified by following collaborative activity around the patient's care.

Sample size should facilitate detailed data for analysis which captures accounts of the phenomenon being investigated (Walsh and Downe, 2006), rather than generating large volumes of superficial data (Cleary, Horsfall and Hayter, 2014). Grounded theory supports this with the concept of 'saturation' which is the point of analysis when no new concepts emerge and all questions have been fully explored (Trotter, 2012; Hennink, Kaiser and Marconi, 2016). Saturation ensures no redundant data is generated and this point guided the end of recruitment, but in considering the adequacy of the sample it was also important to consider the principle of appropriateness (Cleary, Horsfall and Hayter, 2014) to ensure that the sample was sufficiently representative of OPAT practice situations.

Kitson et al (2013) found the number of people involved across the continuum of care related to medicines is difficult to estimate, and varies with the circumstances for each patient and the extent of involvement. They determine that the numbers of roles involved in a medicines management circle of care are between five and eleven including the patient. This was used as a guide for the number of roles which would be appropriate to be included in the sample. Ten roles were identified as being involved in the care situations and the sample contained eight roles and this was consistent with numbers identified by Kitson et al (2013). The exact number of participants was determined by the patients' care situations, theoretical sampling and responses from potential participants.

The sample consisted of twenty four participants: three patients, two district nurse teams consisting of fifteen district and community nurses and two student nurses, one OPAT specialist nurse, one respiratory specialist nurse, one pharmacist and one microbiologist, and an outline of their role details is provided in table 1. In total invitations were sent to three patients, seven individual professionals and two

district nursing teams. Three individual repeated invitations to medical staff resulted in no response.

Table 1: Participant Details

Participant identifier	Outline
Participant A	Patient with a long term condition receiving a longer term course of antibiotics
Participant B	Patient with a life limiting long term condition receiving a short course of antibiotics. This patient was aware of his terminal prognosis.
Participant C	OPAT Nurse Specialist
Participant D	Microbiologist covering all Trust services
Participant E	Pharmacist with responsibility for antibiotics
Participant F	Respiratory Nurse Specialist
Participant G	Community Staff Nurse in Team A and link trainer in OPAT
Participant H	Community Staff Nurse in Team A and link trainer in OPAT
Participant I	Community Staff Nurse in Team A trained in OPAT
Participant J	Student Nurse (3rd Year) in Team A observes OPAT
Participant K	District Nurse Team B and link trainer in OPAT
Participant L	Community Staff Nurse Team B trained in OPAT
Participant M	Community Staff Nurse Team B trained in OPAT
Participant N	Community Staff Nurse Team B trained in OPAT
Participant O	Student Nurse Team B observes OPAT
Participant P	Community Staff Nurse Team B and link trainer in OPAT
Participant Q	Community Staff Nurse Team B and link trainer in OPAT
Participant R	Community Staff Nurse Team B and link trainer in OPAT
Participant S	Community Staff Nurse Team B trained in OPAT
Participant T	Community Staff Nurse Team B trained in OPAT
Participant U	Community Staff Nurse Team B trained in OPAT
Participant V	District Nurse Team B trained in OPAT
Participant W	District Nurse Team B trained in OPAT
Participant X	Patient with an acute infection on a short course of antibiotics.

The sample has a large proportion of nurses who, as a group, have been found to have more positive attitudes to collaboration (Sollami, Caricati and Sarli, 2015) and this may have impacted on recruitment to the study, but this proportion of professional groups is reflective of care delivery in OPAT, and in other care situations, and so the sample was representative of practice.

<u>Theoretical sampling</u>

Initial analysis of data from the first participant identified concepts which required exploration and also identified a number of professionals involved in collaboration with the patient. This identified the next potential participant for selection and was the beginning of theoretical sampling (Charmaz, 2006; Glaser, 1978). These participants were invited to take part in the study by email and were sent the Staff Participant Information sheet (Appendix F). This stage of the sampling process has been identified as selective sampling (Bagnasco, Ghirotto and Loredana, 2014), but as analysis had commenced at this point, and the selection of the next participant was informed by the analysis, it can be seen as the starting point for theoretical sampling (Birks and Mills, 2011).

Some research texts attempt to simplify grounded theory and as a result portray theoretical sampling as straightforward, as if the process of theoretical sampling flows conveniently and sequentially from analysis of one participant's data to then capture relevant responses from the next identified participant, and so on until analytical need is satisfied and theory generated (Morse, 2007). The practicalities of theoretical sampling are however much less direct, and there were times during this study when the practical arrangements of contacting potential participants and coordinating interviews took six months to achieve due to reorganisation of services, changes in team managers, staff workload and the difficulty in coordinating researcher and participant availability.

During times of delay, in order to use time effectively and keep the research in line with anticipated timelines, other individuals who had been identified by participants were recruited in order to follow the collaborative interaction and explore developing categories. Corbin and Strauss (2008) provide guidance for such practical difficulties in theoretical sampling and refer to a number of variations which include gathering 'data very systematically (going from one person or place to another on a list) or sampling on the basis of convenience' (p. 153). The sampling strategy used within this study adapted to accommodate the difficulties in contacting and arranging dates and times with clinicians during a period of organisational restructure.

Participants were identified and recruited to clarify understanding, explore conceptual ideas (Charmaz, 1990) and inform the developing theory (McCallin, 2003). In order to follow collaborative leads an element of snowball sampling technique (King and Horrocks, 2010) was utilised to direct the theoretical

investigation within the patient participants' circle of care (Kitson et al., 2013) and associated collaboration. Analysis of data from each participant identified individuals and specific teams involved in collaboration (figure 2), and it was the named individuals and teams who were invited to participate in order to explore collaborative interactions and to investigate concepts and category development arising from on-going analysis.

Figure 2: Collaborative Links
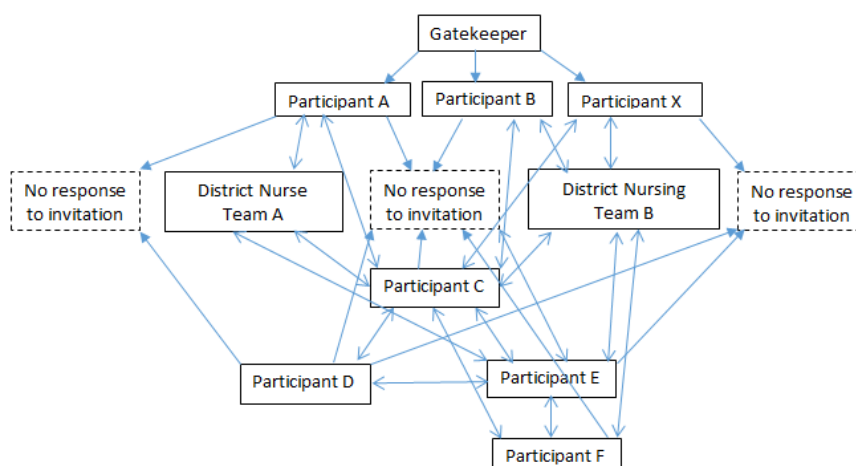
Sampling in this study was not the linear exercise that the list of participants (Table 1) and interview dates (Table 2) presents, but was more managing a web of collaborative links (figure 2) derived from data and used to select participants to inform developing categories. This strategy followed theoretical and collaborative leads from successive participants as identified in figure 3.

Figure 3: Theoretical Sampling
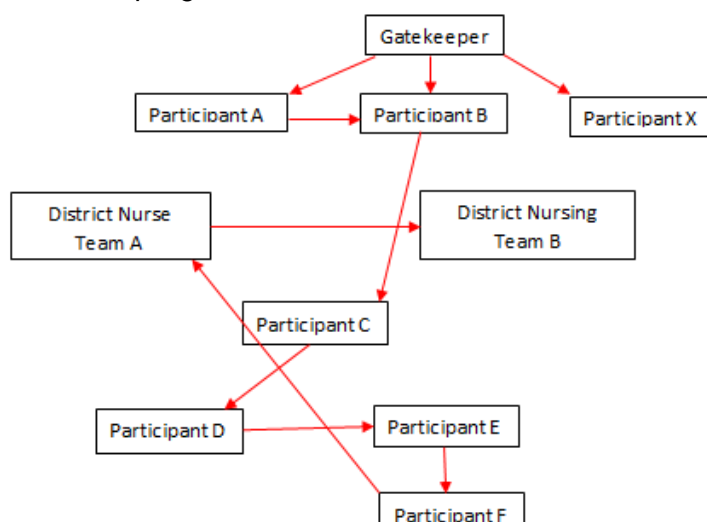
During theoretical sampling three potential participants were identified (identified by dotted box in figure 2) and invited to take part, but did not respond to repeated invitations. One hospital ward was also identified as a potential source of participants, but discussion with the gatekeeper excluded this area as Trust reorganisation had reconfigured wards and redistributed staff resulting in disruption of previous collaborating teams.

Participant X was identified following analysis of the patient role in collaboration and the gatekeeper was asked to identify a younger patient on a shorter course of antibiotics in order to check the developing theory with a patient in a different situation from those experienced by participants A and B. It took five months to identify an eligible patient due to gatekeeper workload and the infrequent requirement for short course OPAT treatment within the Trust during this period. Although it took more time than anticipated to recruit Participant X I felt it was a valuable aspect of analysis to check the theory in an additional care situation. This also provided assurance of data saturation as no new categories emerged during analysis of this additional data.

Data generation

Data generation is the production of data through the researcher interacting with a data source (Birks and Mills, 2011) and this was carried out by means of eight face to face, semi-structured individual interviews and two focus groups. These were arranged at the convenience of the participants. The patient participants were interviewed in their homes while other interviews and the focus groups were held in NHS property and all interviews took place during office hours. All participants were reminded of the information in the relevant information sheet and given the opportunity to discuss or ask questions prior to reading and signing the consent form (Appendix G). Interviews were all audio recorded and transcribed verbatim.

Table 2: Itinerary of Interviews and Focus Groups

Participant identifier		Method of data collection	Dates
Participant A		Two Interviews	7 April 2014 21 April 2014
Participant B		Interview	09 May 2014
Participant C		Interview	27 May 2014
Participant D		Interview	17 June 2014
Participant E		Interview	23 July 2014
Participant F		Interview	15 September 2014
Participant G Participant H Participant I Participant J	DN Team A	Focus Group	18 September 2014
Participant K Participant L Participant M Participant N Participant O Participant P Participant Q Participant R Participant S Participant T Participant U Participant V Participant W	DN Team B	Focus Group	14 November 2014
Participant X		Interview	2 November 2015

Interviews

Interviews are one of the principle techniques of data generation in qualitative research and are used widely in grounded theory (Birks and Mills, 2011). Charmaz (2014) sees intensive interviewing as particularly well suited to grounded theory as interviews share similar characteristics with this methodology; both being open-ended, emergent and unrestricted in outcome. These characteristics allowed exploration of the participant's experience and the aim of the interview process was to create time and a space where participants' perceptions, experiences and thoughts about collaboration would emerge in conversation.

Focus Groups

Focus groups were used to generate data from members of two district nursing teams. Multiple interviews with individual nurses were not possible due to the workload of the team and the potential impact on patient care. Both district nursing teams chose focus groups at a time to suit the team workload. District nurse team A formed a small focus group of four participants, but the focus group with district nurse team B began with thirteen. Although this is a large number for a focus group

(King and Horrocks, 2010, p 67) two nurses needed to leave part-way through the interview and two more were called away shortly afterwards. This left a more interactive group of nine for the majority of the interview.

<u>Interview and Focus Group Interaction</u>
The role of researcher was to facilitate the interaction and to direct the participants in conversation in order to gain their insight into collaboration. Semi-structured interview protocols for interviews and focus groups (Appendix H and I) were developed to guide the interviews and focus group and were available for participants to view before and during the interview. None of the participants looked at the interview protocol and all seemed comfortable to ask as well as answer questions. The protocols were effective and provided sufficient flexibility within the interviews and focus groups to allow development of discussion, which explored participant experiences, perceptions and opinions (Peters and Halcombe, 2015) and to advance aspects of developing theoretical analysis. Interviews lasted between forty five minutes to one hour and ten minutes, depending on the conversation and the time participants had available.

The location of the interview was arranged based on the convenience of the participant and this provided a comfortable and quiet environment in the participant's home or office with minimal interruption. Consent was obtained to audio record all interviews and focus groups and some notes were also made during interviews, or shortly afterwards, to capture aspects of the interview context and environment.

During the interviews a conversational style was used to engage participants and generate rich and insightful data (Bryman, 2012). All participants, apart from the patient participants, knew me prior to the interview and this aspect of being considered an 'insider' had implications for the interaction during the interview. Being seen as an insider gave me valuable interview time with some staff when an outside researcher may not have been accepted and one community nurse vocalised this special status saying 'we wouldn't do this for just anyone you know'. This familiarity had advantages and staff participants were relaxed with me and keen to discuss how OPAT was working. In some cases participants used the pre or post interview time as an opportunity to talk through OPAT operational issues or other shared professional issues with me and I found that at these times I re-engaged with my previous role as OPAT lead and team member.

These interviews presented a challenge as I moved between team member and researcher perspectives. I developed a growing awareness of the tacit organisational knowledge and language I shared with some participants and the knowledge I used to explore issues during interviews. These shared understandings can be taken for granted during interviews (Standish, 2001) and realisation of this added to the continuous reflection and interplay between data collection and analysis (Urquhart et al., 2010). As a more etic perspective developed and analysis continued I became more attuned to the influences of shared symbolic understandings and interpretation within all social situations.

Interviews with patient participants presented different issues and highlighted the impact of participants understanding of the research and perception of the researcher. Participants A and B were at first keen to tell me how much they valued OPAT and assure me of the high standards of care they were receiving. It became clear that they had been told about my previous role and were presenting positive feedback to someone they perceived as evaluating both service and staff. Roulston (2014) outlines a number of interactional problems which can arise during interviews due to the researcher's inability to establish mutual understanding and the impact of perceived power dynamics, but clarifying the purpose of the study and explaining my new role helped participants to relax and discuss their experiences and provide valuable data.

Questions were phrased using broad principles of appreciative inquiry (Reed, 2006) and this was effective in moving the conversation on in a positive frame and in building trust. Participants were able to acknowledge and communicate the positive aspects of their experience and were comfortable to discuss improvements which could be made. As rapport developed the participants shared experiences more openly and discussed aspects of collaboration, which they regarded as negative as well as those which were positive. During these interviews I intuitively adopted communication and consultation skills developed as a district nurse to establish understanding and gain trust.

At times it was difficult to separate nurse from researcher as both perspectives informed my interaction. The boundaries between insider and outsider research are dynamic and change with understandings of one's position over time (Costley, Elliot and Gibbs, 2010) and the final interview demonstrated that I was no longer viewed as an insider by either Participant X or myself, I was comfortable in the role of researcher and interaction was informed by the participants desire to contribute to

research and my analytical need to explore the participant's experiences, ideas and opinions to inform theory development.

<u>Word cards</u>

A card based technique was also used to engage participants in conversation and as an exercise to encourage reflection (Rowley et al., 2012) and expand conversation during the later stages of the interview. This card game method of data generation (Rowley et al., 2012) has been used with groups (Kitzinger, 1994) and in individual interviews (Bernhaupt, 2010; Rowley et al., 2012) and allowed participants to hold word cards (figure 4) and in some cases, move them around while they talked about collaboration. This produced some reflection on the words themselves, but also prompted reflection on experiences and detailed explanation of the way collaboration takes place. While focusing on the cards, and sometimes putting them in order of personal importance, participants seemed more relaxed and gave more detailed data.

Figure 4: Word Cards

Making Decisions	Shared/Sharing	Respect
Communication	Trust/Confidence	Aim/ Goal
Involvement	Responsibility	Power
Solving problems	Awareness of roles/ Understanding what people do	

The use of word cards developed from the desire to be transparent about any interaction, including my own interaction with literature. Interviews were approached as a conversation in which knowledge was constructed in the communication between the interviewer and the interviewee (Brinkmann and Kvale, 2008) and I viewed participants as peers with expertise in their own experience of collaboration. As part of ongoing reflection on my own methodological relationship with literature I realised that exposure to, and acknowledgement of, existing knowledge within the literature had the potential to stimulate new insights and perspectives (Thornberg, 2011) and therefore I decided to include the themes gathered from my initial scoping of the literature in the interview conversation with participants.

Roulston (2010) differentiates between different approaches to interviewing and defines constructionist interviews as a co-construction between researcher and participant and in which the researcher analyses how researcher and participants make sense of the research topic. I hoped to gain participant insight and opinion on existing ideas and also to stimulate further exploration of their collaborative

relationships. The word cards were introduced after participants had first discussed their own experiences of OPAT so that the words on the cards did not influence or direct their accounts, but did enable comment on current understandings of the research topic in the light of their experience. The card game was less effective with those participants who had very limited time (participants F, G, H, I, and J), but still stimulated more detail than conversation alone, and some participant's (A, B, D, H, K, S and X) added words which they felt should be included or removed words which they felt had no meaning or relevance for them and this also prompted more conversation.

Methods of Data Analysis

Data analysis was undertaken using a combination of mapping techniques developed by Clarke (2005) and analytical processes described by Corbin and Strauss (2008) and by Charmaz (2014). The purpose and use of these analytical methods is outlined below and more detail about the specific contribution of each method during analysis is discussed in chapter five.

Coding

Coding is the process of breaking data apart and defining what can be seen within it (Chramaz, 2014). This is the beginning of 'opening' data and moving beyond description to analysis through selecting and sorting content. Charmaz (2014) sees coding as a 'pivotal link' between collecting data and theory development and it is the stage of analysis where meaning begins to take form. The process requires detailed reading and has the effect of immersing the researcher in the content of data.

Codes were developed using a line by line approach with labels applied to sentences or chunks of data which identified what was happening within the data. The process was repeated for each transcript with initial coding being very general and thematic in nature, but subsequent codes focussed on the actions, processes and any unusual or striking concepts within the data. Transcripts were kept as whole documents with text highlighted and annotated with labels and this ensured that the context of codes remained intact.

Categorising

Codes were grouped into categories by finding similarities, patterns or themes within the codes and grouping them together. Categories were developed using mapping techniques to make connections and see the possible relationships

between codes. This was done by hand with paper and pens and also by using MindGenius (mind mapping computer software) to create a code map for each interview and focus group. This enabled codes to be moved into categories and also captured the codes associated with each transcript in one place.

Once a map had been created for each interview and focus group then a situational map was created by importing all categories and the associated codes into one map. A number of mapping techniques identified by Clarke (2005) were used throughout the process of analysis to stimulate analytic thought and promote greater depth of analysis.

<u>Situational Maps</u>
Situational maps were used to articulate each element within the situation and explore the relationships between them (Clarke, 2005). The format of abstract relational maps (figure 5) were often done by hand and were, as Clarke (2005) discusses 'messy' with several large pieces of paper and pens, used to explore and draw possible relationships by moving codes and developing categories. This mapping technique was also used in MindGenius, but paper, pen and pencil proved most productive in generating analytical thought in allowing for messy and speedy repose to analytical exploration and the frequent reconfiguring of maps to explore new relational possibilities.

Figure 5: Situational Map and Relational Analysis
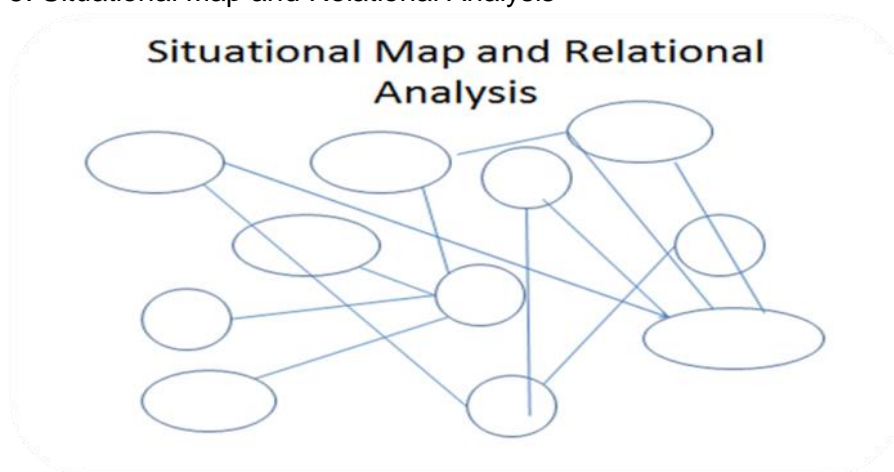
MindGenious also enabled more ordered maps in the form of lists, generated by transporting maps into Word documents at points of analytical progress, and this created documents with categories and codes grouped below them. This formed a

record and audit trail of the development process, but also facilitated more analytic thought when viewing codes and categories in a different format.

Social World Maps

Social world mapping techniques are rooted in symbolic interactionism and trace the social activity of people. They are used to consider social action more broadly than the situation of study. Clarke (2005) calls this meso-level action where people act as individuals, but also as members of social worlds. This type of mapping added to consideration of individual micro perspectives and more macro organisational issues to highlight a meso area of social interaction between these two. These social worlds may be flexible or rigid and they may well overlap with individuals acting in several social worlds. Social world maps add to analysis by making collective social interaction visible.

This type of mapping was carried out with paper and pencil and was completed for each interview and focus group as well as for the situation as a whole. These maps became increasingly complex as the situational social worlds became apparent, but the format and drawing of these maps (figure 6) facilitated greater depth of analysis in the consideration of influences, meaning and power dynamics from many social worlds and the roles associated with each social world.

Figure 6: Social World Map

Positional Maps

The drawing of positional maps aids exploration of the positions within the situation. They facilitate the researcher in understanding the issues within the data and the different positions within each issue. The maps do not look at individual participants but at the concepts which arise during analysis. This has the effect of freeing

thought from the specifics of individuals or locations and focusses on the dynamic and relative positions of analytical concepts to identify which positions are significant within the situation.

This analytical technique became valuable during theoretical analysis and was used to develop and refine theoretical concepts. The formatting of positional maps (figure 7) allowed theoretical concepts to be plotted against each other and promoted thought about the position of concepts in relation to each other.

Figure 7: Positional Map
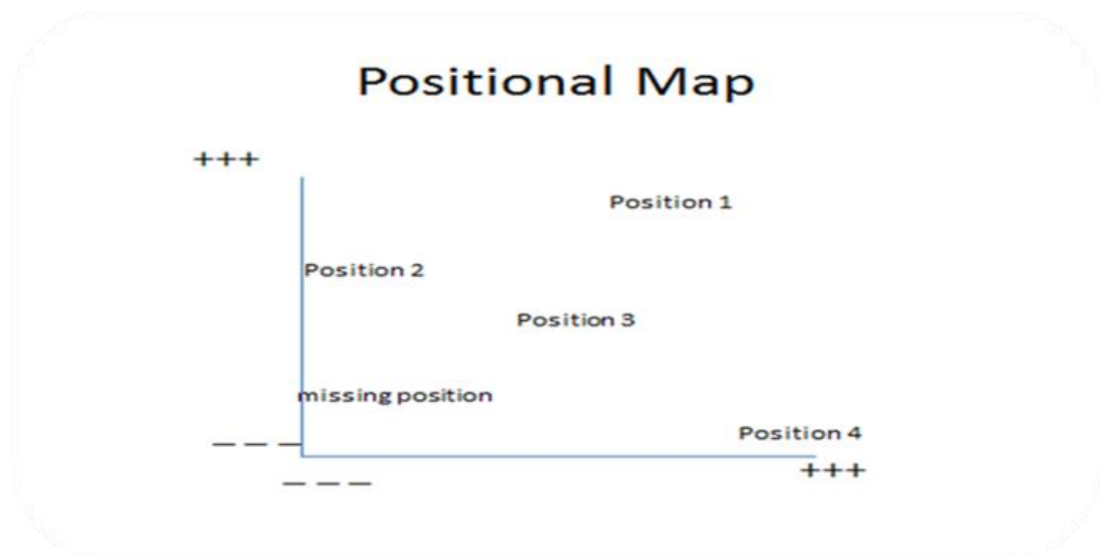
Constant Comparison

The inductive nature of grounded theory processes build theory from the data (Birks and Mills, 2011) and constant comparative analysis is a fundamental aspect of theory development. Comparison began with coding of the first unit of data (Glaser and Strauss, 1967) and was compared to identify similarity and difference of phrases and incidents (Charmaz, 2014). Comparison continued between data from different interviews in terms of the perspective from different participants, the words they used and the incidents they described. When data was coded and categories developed then these were compared with the codes and categories from all previous data. This often prompted new analytical thought about categories and a review of previous participant data maps.

At the point of data saturation, when no new categories were being generated, all participant data maps were imported to an overall situational map. Categories were imported one at a time and compared with all others. Duplicate codes were removed and some similarly named, but conceptually equivalent, categories

merged. This process provided the opportunity to review and compare all participant data maps until all codes and categories existed in one situational map. The comparative method continued through theoretical development of categories as each step of analytical progress in one category was compared with others in order to understand the interactive nature of social processes and of the developing theory. Comparison became a way of thinking and continued through the research from the first coding of data, to interaction with literature, and theoretical integration of concepts and on to the development of theory.

Theoretical Sensitivity

While the process of comparison built theory from the data and kept theoretical developments integrated with the research situation both inductive and deductive thinking were in use, but more abductive thought processes developed from engagement with the data and analytical exploration. Constant re-engagement with the data brought leaps of thought, counter-intuitive associations and moments of clarity in, what Reichertz calls, 'a cognitive logic of discovery' (2007; p. 220). This process of theorising; discerning meaning, recognising patterns in categories and constructing abstract concepts (Charmaz, 2014) forms one aspect of theoretical sensitivity. The other aspect relates to the way the researcher steers this process. Birks and Mills (2011) point out that 'researchers are a sum of all they have experienced' (p.11) and the concept of theoretical sensitivity accounts for this within the research process. Sensitivity is a culmination of experience, knowledge, reading and the increasing insight developed throughout the study.

Corbin and Strauss (1990, 1998) discuss the importance of the researcher's sensitivity in theory development, but for Glaser (1992) sensitivity must be balanced with the danger of consciously or unconsciously forcing the data in light of existing theory. Strauss and Corbin (Strauss, 1987, Strauss and Corbin, 1998) identify a range of tools to assist with the development of theoretical sensitivity and all with the aim of 'stimulating reflection about the data in hand' (1998, p. 122) and to provide different ways of understanding the data. Glaser too highlights the importance of theoretical sensitivity (Glaser, 1978), but directs researchers to steep themselves in literature other than in their own area in order to develop insight informed by many fields. For Charmaz (2014) theoretical sensitivity lies in the work of analysis; by viewing data from multiple vantage points, stopping to ponder and

question, make comparisons and follow ideas, the researcher develops theoretical sensitivity in finding ideas that best fit the data.

Theoretical sensitivity grew during the course of the study and slowly emerged from initial confusion about the conflicting views of pre-eminent grounded theorists, to become more tangible through the praxis of grounded theory methods. Reflexivity was core in understanding my own contribution to theory development and is bound up with my awareness and movement from emic to etic viewpoints. Corbin and Strauss (2008) discuss the advantage of professional experience in enhancing sensitivity by feeling comfortable in the research area and understanding the significance of data, but also warn that it can lead to misreading of data.

My own familiarity with the research area gave me the advantage of being orientated to the field of research, but it also provided potential for me to see events and hear words from my own familiar perspective rather than those of the participants. Sensitivity to this potential prompted reflective activity and this allowed me to understand my own perceptions of collaboration in OPAT and to distinguish them from those of my participants. Throughout data analysis the use of comparative methods increased my sensitivity to the words and actions of each participant and each mapping technique increased this sensitivity by adding depth and dimension to my interpretation of the situation. Memos record my immersion in analysis and increasing sensitivity to meaningful data, but also feature reflexive scrutiny of research decisions, my contribution to developing theory and movement to a more etic, abstracted view of the situation.

Ethical Issues

Conducting research within an NHS setting brings some specific ethical considerations and requirements in addition to academic approval for the design of a study. Undertaking research as a health care professional also brings with it issues of accountability and adherence to the professional code (Nursing and Midwifery Council, 2015). Ethical practice is fundamental to me as a nurse and consideration of ethical principles forms a framework for my daily decision making. Extending this aspect of professionalism into my research was achieved by using the same ethical principles of autonomy, beneficence, non-maleficence, justice and fidelity to guide research design and practice. The added aspect of my professional familiarity with the research setting and some participants also raised a number of

ethical considerations which were managed within the research design (Costley, Elliot and Gibbs, 2010).

The principle of autonomy concerns respect for people and in terms of research practice underpins informed consent, protection of subjects, privacy, anonymity and confidentiality (Farrimond, 2012). Ensuring potential participants were able to make autonomous voluntary and informed decisions about participation in the study was addressed by the provision of specific participant invitation and information (Appendices E and F). This included the nature and purpose of the study, method of selection, boundaries of confidentiality, data handling and information about the use of results, plus a copy of the consent form (Appendix G). Participants were given the time they needed to consider the provided information before deciding to participate or not, and were able to contact either myself or the study gatekeeper if they wished to participate. The consent process, as outlined in the interview protocol (Appendix H) and consent form (Appendix G) ensured participants had the opportunity to recap the study information and to ask questions before consenting. All participants were informed that they were able to withdraw from participation at any time with no detrimental effects to their treatment or their role within OPAT.

Both the NHS setting and my previous employment within the Trust raised potential influences of power within relationships. This was addressed to ensure transparency about the research process and acceptance of the voluntary nature of participation. Use of a gatekeeper within the Trust and emailed invitations to staff ensured no coercion or feelings of obligation to participate and three potential participants felt no obligation to respond to invitations. Patient participants were provided with study information and assured that their treatment would remain unchanged whatever their decision about participation and were able to contact either myself or the gatekeeper for information.

While confidentiality was assured, anonymity could not be guaranteed for all participants due to the nature of the service under study. Patients and other participants from large staff groups, such as district nurses could be guaranteed anonymity, but participants from other professional groups could be potentially identifiable by nature of being one of a limited number of the profession involved in OPAT, such as specialist nurses, consultants or pharmacists. This issue was made clear to participants and discussed with them before they decided to participate.

The principles of beneficence and non-maleficence are often considered together in practice through the concept of utility which balances doing good while minimising

harm. Justice is closely related in ensuring fair research procedures which do not disadvantage vulnerable groups. Ethics committees considered these issues and approval was granted by University Ethics (Appendix A), Trust Research and Development Department (Appendix C) and NHS Ethics Committee (Appendix B) which deemed the study to raise no material ethical issues and be at low risk of harm and, therefore, appropriate for proportionate review.

The NHS setting requires that patient care is paramount and to ensure that disruption to patients and staff was minimal all interviews were organised for participant convenience and to accommodate patient care. This required some element of lone working for me as a researcher and I informally risk assessed each interview with the gatekeeper and also communicated my location to the gatekeeper during field activity. Since my research began formal risk assessments are encouraged within the University and I would now complete a full risk assessment in relation to researcher safety.

Fidelity has been identified as a core principle in research (Kitchener and Kitchener, 2009) as it encompasses trustworthiness and honesty. As a researcher this underpins processes to support transparency and a duty to adhere to processes which maintain confidentiality and data security, but which are also transparent about ethical and professional limitations to confidentiality. Information and discussions about confidentiality addressed the researcher duty to report anything identified as being in breach of professional codes of conduct, or which put an individual at harm. No such issues were identified during the study. Procedures for data security have been maintained with a list of participant's names and their identifying participant letter held on an index list and kept in a locked University office. Interview data has been anonymised and stored on a University password protected computer system and stored in line with University policy.

Conclusion
This chapter has presented the grounded theory study design and methods used to address the research questions and the specific design requirements which arise from an NHS research setting have been discussed. The implications of the social constructionist approach have been explored in the methods used and in the contribution of reflexivity to the research process.

Methods used to identify, access, recruit and interview participants have been described and the ongoing theoretical sampling and constant comparative methods, which were used to follow collaborative relationships and inform theory development, have been discussed. The methods of data analysis and theoretical sensitivity have been described and will be discussed in relation to data analysis processes in the next chapter. The ethical principles, which have guided the research decision making, have been presented and this chapter concluded with consideration of the ethical issues arising from the study.

Chapter Five - Data Analysis

Introduction

There are specific analytical requirements which denote a grounded theory study, and many researchers have provided explanation and interpretation of the techniques and tools required. In order to be creditable grounded theory studies need to offer more than the use of grounded theory tools such as memos, constant comparison and theoretical sampling. Evident traceability requires an account of how the tools were implemented (Boeije, 2002), the analytical process involved and the product of the analysis. This chapter will present the steps of analysis used in this study which include initial and focused coding (Charmaz, 2014), categorising (Corbin and Strauss, 2008; Charmaz, 2014), situational analysis (Clarke, 2005), and the development of theoretical concepts (Charmaz, 2014). Extracts from maps will be used to demonstrate the use of analytical tools which were used to open the data and promote thought in every level of analysis. Excerpts from memos will explain the comparison and reflexivity within the analytical process.

Stages of Analysis

The aim of analysis was to make sense of the data, to analyse individual and group perspectives and to interpret the collective interaction within the situation of collaboration. The analytical process focussed first on the perspectives of individuals and groups and then combined these perspectives to analyse the collaborative situation they share. A combination of flexible and adaptable methods (Khaw, 2012) were required to achieve this, and Clarke's (2005) mapping techniques were used to facilitate and augment more traditional grounded theory methods in order to stimulate thought and open up new ways of thinking about the data. Clarke's tools provided a visual and kinetic aspect to analysis which increased opportunities to experience the data through drawing maps, which traced social and positional relationships, and these were used repeatedly and frequently throughout analytical progress. The stages of analysis are presented in table 3 to enable succinct outline of the processes used, but during analysis these stages merged and overlapped in emergent progress rather than being definite or separate instalments of analysis.

Table 3: Stages of Analysis

Stage of Analysis	Process of Analysis	Comparison	Analytical Tools Used
Coding	●Consider each segment of data and ascribe a concept to it. ●Focus on the meaning of initial codes. ●Compare and link codes by exploring the relationships between them.	Compare sections of data within each transcript. Compare codes with data and with each other.	Sensitising concepts. Relational maps for each participant or group.
Categorising	●Join codes together to form categories. ●Compare categories and merge.	Compare codes and categories derived from different transcripts. Compare with data.	Relational maps. Social world maps.
Situational Analysis	●Bring categories from all transcripts together. ●Remove duplicates. ●Explore properties and situational relationships. ●Continue categorising to reach the minimum number of categories.	Compare all categories and codes as they are brought together	Relational maps Social world maps Positional maps. Situational maps
Developing Theoretical Concepts	●Conceptualise relationships between categories. ●Abstract theory.	Compare situational categories. Check with data.	Relational and positional maps. Conceptual diagrams.

Coding

Analysis began with the first data generated in interview with participant A and continued until theoretical abstraction was complete. Repeated listening to the interviews provided familiarity with the content and provoked thought about the data and the non-verbal aspects of each interview, but coding began with the transcribed words on paper. Coding is the process of considering each segment of data and ascribing a name to it; a concept which defines what is happening in the segment of data (Charmaz, 2014). Corbin and Strauss (2008) describe coding as 'breaking data apart' (p. 195), but the process was more one of highlighting during initial coding.

Codes remained close together, joined within the transcript to allow frequent comparison and to maintain awareness of the context and continuity within the text.

Initial Coding
First attempts with coding data were performed at speed, as Charmaz (2014) recommends this for sparking a new view of the data. However, this technique resulted in general and descriptive codes, which were superficial topics and themes within the data rather than deeper concepts related to meaning. Repeating the process with sensitising concepts, derived from symbolic interactionism, (Charmaz, 2014) provided focus for a more detailed analytical view. Thinking about action, agency and process within each segment of data indicated the level of analysis required and this was aided by the use of gerunds (Strauss, 1978) within codes to express action. Initial coding was line by line in a Word document and comments were inserted beside the transcribed sentences. This close proximity of data and code, together with the immediacy of thought and allocation of concept, kept analytical thought closely linked with the detail of data and prevented any 'conceptual leaps' (Charmaz 2014, p. 117) before sufficient analysis had taken place.

Focused Coding
Once the initial coding was complete non-human aspects within the data were identified and labelled as codes. Clarke (2005) discusses the need to focus on non-human actors/actants as they can influence interactions within a situation. The first codes were provisional, and during the process of comparison codes were reworded and rephrased to depict the meaning in the data as incident was compared with incident. For example, one of the first codes from Participant A data was 'coordinated care', but the use of a gerund provided focus on the action and the code was changed to 'coordinating care'. This focus on action promoted thought about the viewpoint of the participant who was comfortable coordinating her care in one section of data, but when compared with a later section the participant was much less comfortable about her coordinating role. Two codes were therefore developed further to represent this difference: 'coordinating care comfortably' and 'coordinating care uncomfortably with hospital'. Charmaz (2014) names this focused coding and identifies its function in expediting analytic work by sharpening what has already been done in initial coding and leads into the development of categories.

Relational Maps
Maps were developed with MindGenius software for each participant, or group of participants, and relational mapping techniques were used at every stage of

analysis to visually represent codes and categories and to explore the possible relationships between them (Clarke, 2005). This type of map is closely related to the technique of clustering (Rico, 1983) and provides a visual and flexible way to view possible relationships and cluster codes together.

This technique was particularly useful in the development of categories. Mapping enabled connections and relationships between codes to be traced and this either grouped codes together, under a new category name to represent the group of codes, or it identified significant codes which could subsume others to form a category. This was the case with the codes related with 'co-ordination' in data from Participant A and figure 8 recreates the paper map used to identify the codes subsumed into the category of coordinating.

Figure 8: Participant A Data: Messy Relational Map (Coordinating)
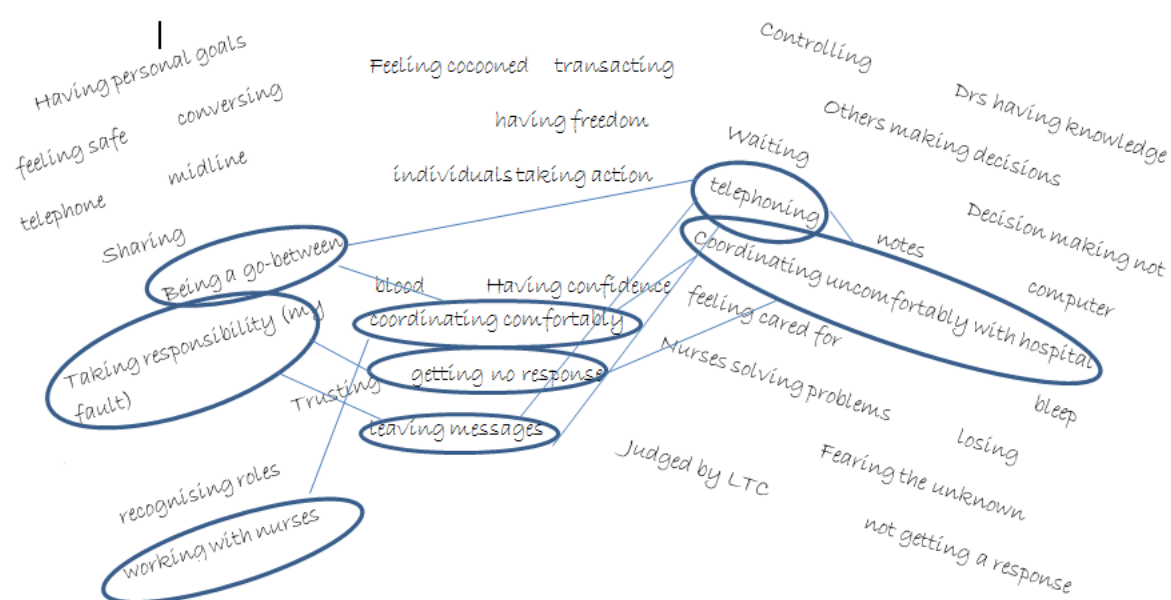
These maps were, as Clarke (2005) describes them, messy, drawn on paper and repeated many times in order to explore analytical possibilities. Once mapping proficiency had been achieved on paper the skill was developed in MindGenius. This software enabled movement of codes to explore their relation to each other and to group codes into categories, but the immediacy and convenience of paper and pen proved to be the most effective and adaptable way of exploring analytical thought.

Categorising

Categorisation closely followed on from focussed coding, but was a distinct phase of formation and confirmation of categories and sub –categories. This built on the work done in focused coding and explored the properties, dimensions, conditions and variance within each category. At this point Strauss and Corbin's (1998) axial coding was considered as an analytical tool, but it proved to be too procedural. Axial coding offers a framework of detailed analytical questions which are applied systematically to each category, but the process of applying the coding model became the analytical focus and had the effect of distracting from the data; rather than elucidating, it obscured the data. There is debate about the value of axial coding (Kelle, 2005; Charmaz, 2008) and I, like others (Kendall, 1999; Urquhart, Lehmann and Myers, 2010), found it to overpower the data with potential to impose a standardised or convoluted structure on categories.

The process which was used was an emergent process favoured by Charmaz (2014), where growing knowledge and understanding informed exploration of the qualities, features and attributes of codes and categories. Continuing the example of the developing category 'Coordinating' from Participant A helps to demonstrate this process. The difference between coordinating comfortably and coordinating uncomfortably captured a change in Participant A's approach and feelings toward coordinating aspects of her care. The action of coordinating was repeated in other codes and it had significance within the data because it had properties of being an act, which could be easy and comfortable to perform or difficult and uncomfortable; it could be part of a team or in isolation, simple or complex and the act evoked emotion and feelings of guilt when it didn't go well. Exploration of these properties confirmed 'co-ordinating' as a category with significance for Patient A, and therefore significance within the situation from the perspective of Participant A.

MindGenius software concentrated and honed codes as they were shortened to capture the key elements. What had been found within the data was represented in MindGenius maps in a more conceptual way. This was required to make maps of manageable size, but in doing so the maps highlighted what had been found to be significant in data and represented the differing properties within the category. The relational map was recreated in MindGenius (figure 9) and compared again with the data to ensure it represented the participant's words. Participant A discussed feeling comfortable when coordinating with different nurses, but identified feeling like a go-

between 'in the middle' (Participant A transcript line 120) and being uncomfortable with other aspects of coordinating her care with hospital and feeling as if it was her 'fault' because she didn't know the people who spoke to her (Participant A transcript line 24).

Figure 9: Participant A Map: Category (Coordinating)
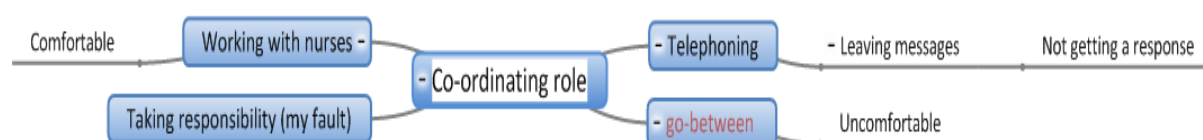
Using Colour in Categories

Colours were used to identify categories and this enabled similarities and differences between participant maps to be visualised more quickly. The same colour was used for categories which represented closely related concepts in a number of participant maps. The use of colours allowed the development of similar concepts to be traced and compared. Transcripts were also colour coded at the side of the text and this assisted comparison. Each section of coded data was highlighted in a colour which matched the category it was associated with. This visually connected the data with the corresponding maps and facilitated ongoing comparison. An example of a particularly dense section of coding next to data from Participant D data demonstrates the use of colours (figure 10).

Figure 10: Participant D Data: Colour Coded Data

The complete map for Participant D identifies the corresponding category colours and can be seen in figure 11.

Figure 11: Participant D Map: Colour Coded Categories
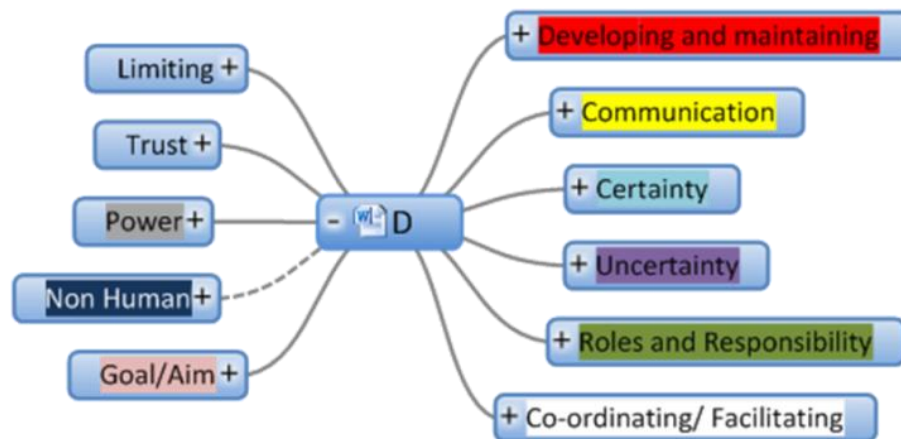
Constant Comparison and Reflexivity

Constant comparative method (Glaser and Strausss, 1967) has been identified as the core intellectual activity of grounded theory (Tesch, 1990) but Boeije, (2002) discusses the lack of clarity and detail in many accounts of analysis and it can be a challenging aspect of research to operationalise and to articulate. Strauss and Corbin (1998) describe constant comparison as a creative process between researcher and data and it is this creativity which can be missing from accounts of analysis. The process of situational mapping aided comparative method within this study and reflexivity was closely associated with the process.

The notion of constantly comparing pieces of data during analysis is a tricky concept to envisage, as analysis would not move forward if any aspect of the process was constant. A more accurate and representative term would be frequent and reflexive comparison. Morse and Field (1995, p. 130) maintain that constant comparison is every piece of data being compared with every other piece of data, but this would seem impractical and inhibiting of creative thought. The data, which is compared is that which the researcher deems to be meaningful, and this is the crux of the creativity. The decisions about what to compare are the researcher's creative contribution to the research, and there is much more involved in comparative method than simply comparing every piece of data.

At first data is compared with data then incident is compared with incident looking for differences and similarity. As analysis progresses the researcher must draw on personal perspectives (Charmaz, 2014) and existing knowledge to make comparative decisions. Reflexivity is essential to ensure the developing theory remains grounded in data and does not follow any prior perceptions or assumptions.

My existing perception of OPAT and knowledge of the service had potential to cloud my view of the data. During the progress of the study my view changed from emic to etic and the reflexive activity involved in making comparative decisions was one point of that transition. For example, while analysing data from Participant C I coded one segment of data 'Directing acts'. The participant spoke of OPAT being like a play: 'It's almost like a play; we've all got different bits to make the ultimate act work well.' I immediately coded this as 'Directing acts' seeing the concept as directing. Reflective memos record the combination of comparison and reflexivity in the decision to change the code name and the beginning of a new analytical view:

Memo Extract 3: June 2014 Categorising Participant C Map (thinking about emic and etic viewpoints (change of category name)

I have had a close working relationship with Participant C. . . Is my knowledge of this participant and our previous work together colouring the way I interpret the data? That could be the same for other staff participants, or the whole of OPAT, but more so for those I have worked with more closely.

Reading Mills, Francis and Bonner (2007) – I began reading re their use of situational analysis, but they also discuss emic and etic points of view. I've been thinking about my 'emic' view as a professional and researcher. I'm no longer in an OPAT post, but it's fresh in my mind and, just like scoping the literature – it's there, I can't pretend that I don't know it . So how do I manage it? I'm reflecting, I know it as an issue, but how do I know if what I see is only the result of my emic view?

Later in June

Charmaz (p. 132) talks of seeing your own view as one of many and having awareness of the concepts you use. I've looked at Participant C data again and looked for other views and any emic assumptions in codes. I've been thinking about the 'Directing acts' code in relation to others. It struck me as significant on initial coding, but looking at other codes in C's data: learning from mistakes, learning as things develop, reduce where things go wrong, modifying information, learning together, involving others to improve and develop, reviewing in smaller groups and learning from incidents – I think the metaphor of a play is like rehearsal. – it reminds me of the theory of front stage and backstage (Goffmann? Look at that metaphor). The participant is not directing, but they are rehearsing. It's like live rehearsal.

Perhaps my assumption was that C's role would direct things, but the words are about something more shared and participative than directing. So does anyone do the directing or is it shared? Look at A and B and the other core team and make a note for next interview.

This process developed a refocused view of data which relied on frequent comparison, not only code with code and category with category, but comparing with participant's words during the first steps of analysis to maintain conceptual authenticity. Being creative and following analytic leads went hand in hand with reflexivity. In order to be reflexive and creative a grounded theory researcher must recognise what is their participant's view and what is their own, also how and why analytical decisions are made. Fresh insights and conceptual exploration came when concepts were puzzling, did not fit with previous interpretation or were unexpected elements of the participant's view. This exploration led to new avenues of analysis and new potential participants through theoretical sampling.

Comparison was part of every stage of analysis (Table 3) and it took place frequently with the aim of inductive recognition of patterns (Birks and Mills, 2011), similarities and differences. Individual participant maps were used to analyse data from each participant and during initial and focused coding comparison only took place within data from that individual. This ensured that each participant map was conceptually grounded in participant data before being externally compared with others. This process captured the perspective of each participant before it was carried forward into analysis of the shared situation.

As analysis moved to consider the situation the perspectives of all participants were combined in the creation of a collective situational map. At this point of 'scaling up' (Urquhart, Lehmann and Myers (2010) there was little reference to the original interview transcribed data as the analytical focus changed from individuals to the collective situational picture of collaboration. While the codes and categories needed to be grounded in data from individuals the situation of interactive collaboration took a more abstract view. It was not restrained by the detail of participant's words, but it was inspired by the meaning derived from their words. Maps were used throughout analysis and provided visual aids to support frequent comparison and exploration of possible conceptual and theoretical explanations for relationships within the situation.

Situational Analysis
Clarke (2005) discusses the purpose of situational maps as framing 'the broader situation as a whole and all the elements in it at a more general and abstract level' (p. 137) and it was this broader view of the situation as a whole which was the purpose of this stage of analysis. The process of categorisation continued, but

moved from exploration of individual perspectives of the situation, to focus on the collaborative situation as a whole by merging analysed data from individual participants within the situation.

Combining each participant's categorised data provided a detailed picture of all their different perspectives and experiences of interaction in the shared situation. While each participant's data was visible, the focus for analysis now became the interpretation of social action and the shared meaning of the situation, rather than individual experiences and views.

Creating the situational map involved importing all participant maps into one overall MindGenius map of categories. This provided comprehensive and comparative review of codes and categories, and the opportunity to distil data as duplicate codes and categories were removed or combined. Thirteen categories emerged when all participant maps were merged and this first situational map is shown in figure 12. MindGenius enabled a concise view of categories, as shown in figure 12, or an expanded view, which includes sub-categories and codes. This flexible view supported analytical consideration of each category and subgroups and moved analysis forward through consideration of the relationships between the categories within the situation.

Figure 12: First Situational Map
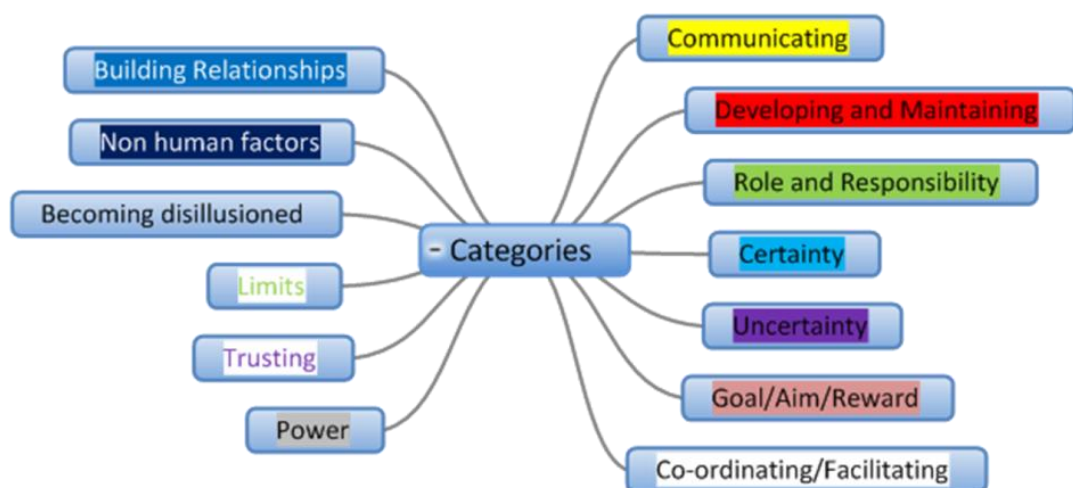
Analytical decisions took place throughout the development of the situational map. During the course of transporting categories and comparing codes, I realised that the category 'Building Relationships' consisted of codes which fit into other

categories. This stage of analysis moved away from individual action; to a more general and theoretical situational view which investigated the way relationships work and are managed in social interaction. Being able to see the situation as a whole, rather than from the perspective of individuals, brought social and situational aspects into focus. An abstract from memos, written at the time, documents the analytical development derived from this comparative analysis and situational overview.

Memo Extract 4: December 2014: Situational Analysis (Building Relationships Category)
Now that I can see the combined codes and categories I can see that the whole situation is about collaborative relationships and the categories are how they happen (action) and what influences them. Participant maps show how individuals interpret the situation and build relationships, but seeing the whole situation makes me realise that the Building Relationships category is made up of codes which fit into other categories.

I need to go through all maps and look at the Building Relationships category and reallocate the codes to the other categories.

I've removed Building Relationships and will follow the idea of action and Influence.

January 2015: Analysing participant data and working with participant maps has been informative about micro aspects of the situation, but it is putting the maps together that enable more conceptual thought and analysis of the situation as a whole. I see more through putting categories and codes together. Combining codes results in more emergent links and adds dimension to the categories. It allows me to look at the multiple perspectives and interactions which all constitute the situation of OPAT collaboration.

Combining categories, and their associated codes, from different participant maps developed understanding about the quality, depth and dimension of each situational category and began a cascade of analytic activity and discovery. Situational categories and sub-categories were arranged as their situational attributes became clear and ideas of action and influence were followed.

The example of the Coordinating category represents the analytical activity involved in situational analysis. Coordinating[1] was a category in all participant maps and represented differing levels and types of coordination action for all participants. Some coordination activity in participant maps involved facilitation and this carried forward to the first situational map (figure 12) in the category name Coordinating/Facilitation. Further analysis explored the mechanism of coordinating within the situation and sub-categories (figure 13) were formed to represent the initiation of action, responding, maintaining and facilitating involved in coordinating.

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[1] Capitals are used to identify category names.

The category name finally became Coordinating and the full category map, including all codes, can be found in Appendix J.

Figure 13: Situational Map: Coordinating/Facilitating Category and Sub-categories
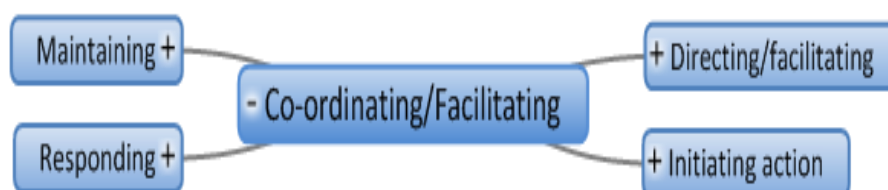
Some categories developed as my own understanding of the situation increased. For example: the category Trusting was comprised of four sub-categories: trusting self, trusting others, trusted by others and transaction (Figure 14) and these were developed through insight from relational mapping of the different ways trust was represented in the data. All participants identified aspects of trust in different ways and these subgroups represent the way I understood trust within the collective data (Charmaz, 2014).

Figure 14: Situational Map: Trusting Category and Sub-categories

The sub-category 'Rehearsing' (figure 15) replaced the category name of Developing and Maintaining. The concept of the in vivo code Rehearsing represented the subcategories more aptly. The collective repeated action involved in learning, managing mistakes and adlibbing to embed new ways of working together within the situation was clearly represented by the notion of rehearsing.

Figure 15: Situational Map: Rehearsing Category and Sub Categories
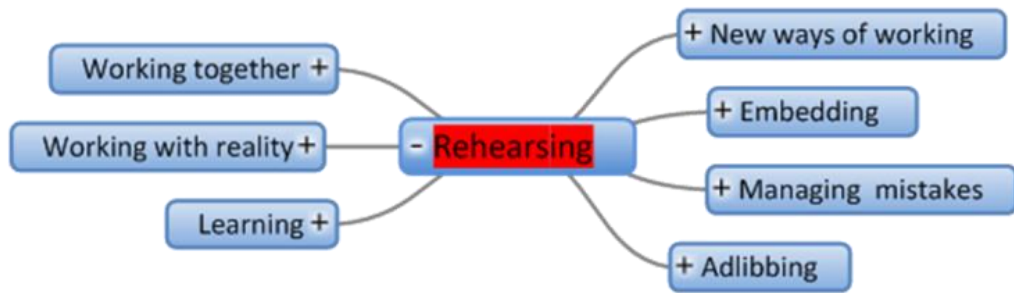
Categories were also integrated as increased abstraction gave a view through the detail of the data to the more abstract relationships, and this provided a clearer view of those categories which represented influence as opposed to action within the situation. The category 'Roles and Responsibility' was incorporated into the category 'Power' (figure 16) as it became clearer that the concept of power encompassed roles and responsibility as well as aspects of shared leadership and professional power which had dynamic influence within the situation.

Figure 16: Situational Map: Power Category and Sub-categories
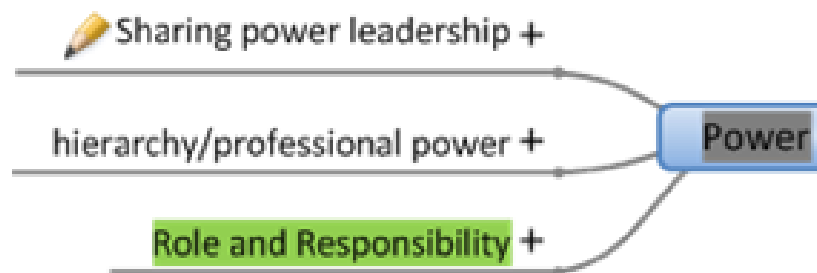
The processes of situational analysis continued until nine categories (figure 17) emerged. These categories were divided by their different qualities with four associated with action and five with influence. Four retained gerund names to denote their action within the situation (Trusting, Communicating, Coordinating and Rehearsing), four were more static concepts (Goal, Limits, Certainty and Uncertainty) which had influence within the situation and the final one was Power which was a more dynamic concept, but still influential throughout the situation. These situational categories were significant concepts, which together were the distilled essence of the situation.

Figure 17: Situational Map: Nine Situational Categories
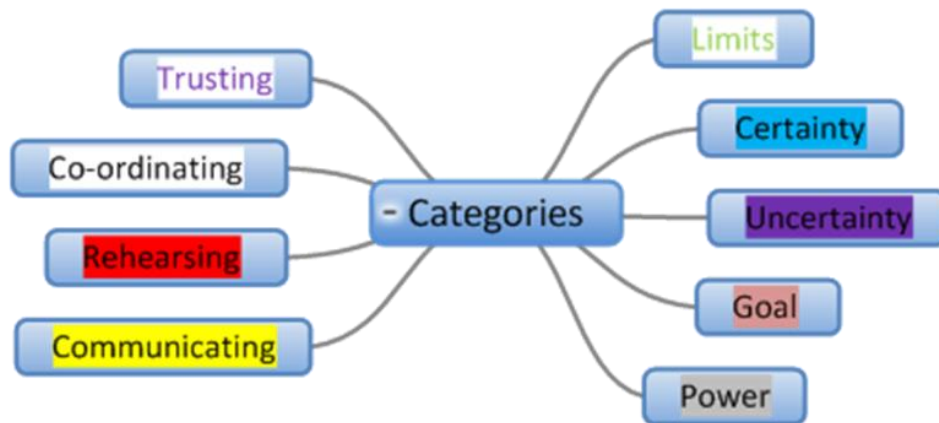
Abductive Reasoning, Agency and Structure

The coding of data features inductive thought processes in observing concepts then looking for similarity and difference with in the text and recognising patterns in data. Moving analysis forward requires abductive reasoning to make mental connections in a more theoretical direction. If decision making is the creative contribution of grounded theory researchers then abductive reasoning is the imaginative and intellectual process which underpins it. Abduction is the method of developing explanations for observed facts and it leads the researcher past induction to inspired, deductive discoveries. It involves both logic and innovation (Reichertz, 2007) in an iterative activity which brings previously un-associated things together.

Abduction is a difficult process to explain, and this may be the reason that many research articles seem vague about the detail of analysis (Boeije, 2002). Abductive thought is absorbing, fast and can cascade into a flow of ideas which makes it difficult to stop and record the activity. The researcher faces the dilemma between taking time to accurately record each analytical idea or to following rapid analytical thought to produce detailed and insightful analysis. Writing or recording a memo about each and every step of abductive reasoning would inhibit creative thought and break the flow of exploration. For this reason much of my abductive reasoning was written more fully after the event. Relational mapping had the advantage of capturing the pathway of abductive thought and memos provided more detailed consideration of meaning and overall analytical direction.

The process of moving analysis forward to achieve greater levels of abstraction is not a linear or continuous process and it has been likened to dancing with data, with moves backwards and forwards (Hoare, Mills and Francis, 2012). Abductive thought involves filtering the inductively gathered information to select relevant concepts, following leads and devising a hypothesis about how one piece of data relates to another. Exploring the many relational possibilities either supports the hypothesis or rejects it, and by repeating the process another hypothesis is considered.

Abductive reasoning played a major role in situational analysis as relationships between categories were explored and analysis moved back and forth between the overall situation and the perspectives of individuals. Hypothesizing about individual perspectives, and about the situational categories which represented action (Trusting, Communicating, Coordinating and Rehearsing), was supported by the framework of symbolic interactionism. Thinking about Blumer's principles of symbolic interactionism (1969) supported thought about the actions, interactions and interpretation of individuals. For example, a hypothesis that patient participant B's terminal illness was linked with the co-ordination of collaboration in his care was analysed effectively using symbolic interactionism. Thinking of terminal illness as symbolic and having specific shared meaning within society and particularly within healthcare explained the interaction between Patient B and Participant F. Patient B took no part in coordinating his care after his terminal diagnosis and Participant F took on the co-ordination role acknowledging her interpretation of the importance of terminal care:

> *You know I wouldn't wanna be stuck in hospital for two weeks, and towards the end of life it's even more important.*' (Participant F transcript lines137-140 and 285-287)

Participant F's action to coordinate care was informed by shared understanding of the symbolic meaning (Blumer, 1969, Charon, 2010, Milliken and Schreiber, 2012) of end of life care.

Symbolic interactionism was less informative when thinking about the influencing factors at a situation level (Goal, Limits, Certainty, Uncertainty and Power) which related to organisations, systems, processes, places and roles. Hypotheses about these more structural and collective elements of the situation seemed to be beyond the scope of symbolic interactionism. Only after re-evaluating symbolic interactionism and including theory, which related to agency and structure, did analysis and abductive reasoning move forward.

For example the category Limits highlighted constraining factors and disillusion in collaboration. I hypothesised that it was being in a professional role which produced these limiting factors and negative consequences, but on stepping back to compare with participant maps it became clear that patients also had limiting factors; although the factors which limited collaboration for patients differed from those expressed by professionals. Limiting factors for patients feature hospital environments, organisational systems and the lack of communication of some professionals. The professionals discussed increased workload, lack of staff, lack of time, excessive risk and professional restrictions as constraining collaboration. It was clear that it was not simply being in a professional role which produced limitations in collaboration, although something about being in a professional role could reduce communication and limit collaboration with patients.

Analysing this using Blumer's (1969) principles of symbolic interactionism failed to provide full interpretation of limitations which consisted of social forces and organisational structures as well as issues of individual interpretation. Incorporating a broader theoretical view, which acknowledged the agency of individuals and the structural elements within the situation, provided the means for analytical thought about the characteristics of limiting factors, the nature of roles and the capacity of individuals to use communication within structural constraints. More hypothesising followed and in this way each exercise in abductive reasoning led to increased levels of abstraction and eventually this process generated theory (Urquhart et al., 2010).

Social World Mapping

Analysis of social worlds is rooted in symbolic interactionism and has been presented theoretically by Strauss (1993), Becker (1974) and more recently by Clarke (2005). The concept of social world analysis centres on the notion of locating individuals within social units and collectives, where people do things together and where there is discourse, negotiation, debate, coercion, and transaction. Clarke (2005) calls this the meso level of social action where individuals become social beings and act both as individuals and part of a social world.

Developing a social world map allowed the links between structure and agency to become more visible and to see individuals acting as part of many different social worlds. The visual presentation of the map facilitated thought about the nature of different social worlds, the formations and collective practice within them and the

discourse around them. First maps were simple, but with the use of Clarke's (2005) sensitising concepts and questions they became more complex. This analytical tool considered the type of social world, its work and activities, the extent of membership and the view of other worlds. Reflexive activity considered which of the social groups I was part of, or had experienced, and how that participation might influence my view.

The first map (figure 18) located organisations, individuals, teams and the extent of their activity within the identified social groups. I realised that I had experience of several groups as a community and hospital nurse, but also as a patient and as a family member in situations other than OPAT. I did not have experience of the internal discourse of other professional groups, but had knowledge of external and interprofessional discourses.

Figure 18: Social World Map 1
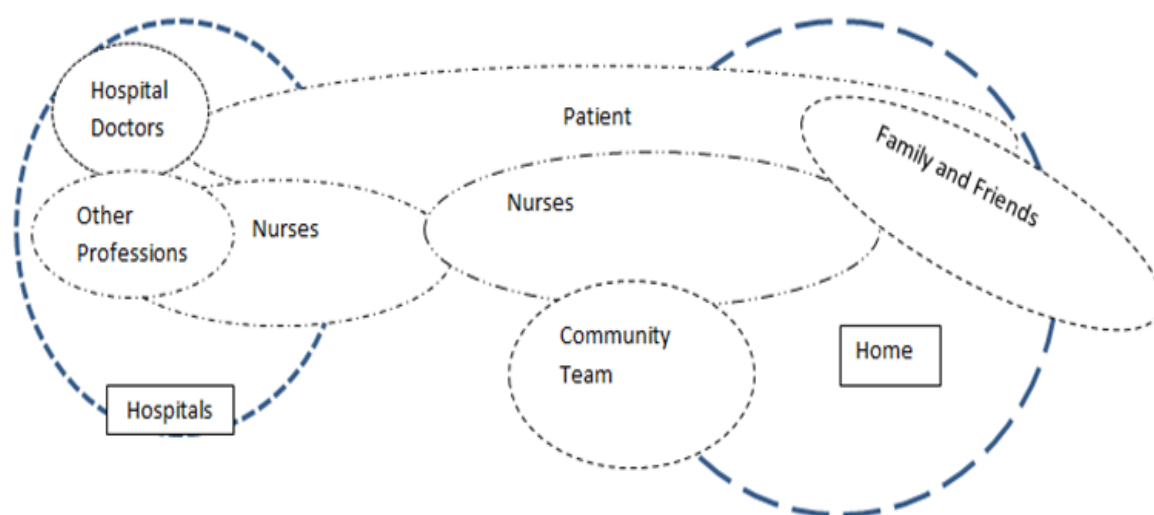
This brought consideration of shared social worlds and the extent to which one group overlaps the other. The idea of limits between social worlds was developed, and contemplation on how limits operate opened new thought about the complexity and flux of social activity as individuals interact in different social worlds. The second map (figure 19) features solid lines to represent the less flexible boundaries and limitations of some worlds. Broken lines depict the more flexible limits of other social worlds. These maps assisted the visualisation of the many shared and separate social worlds involved in the patient, professional, organisational, and personal aspects of the OPAT situation (figure19).

Figure 19: Social World Map 2
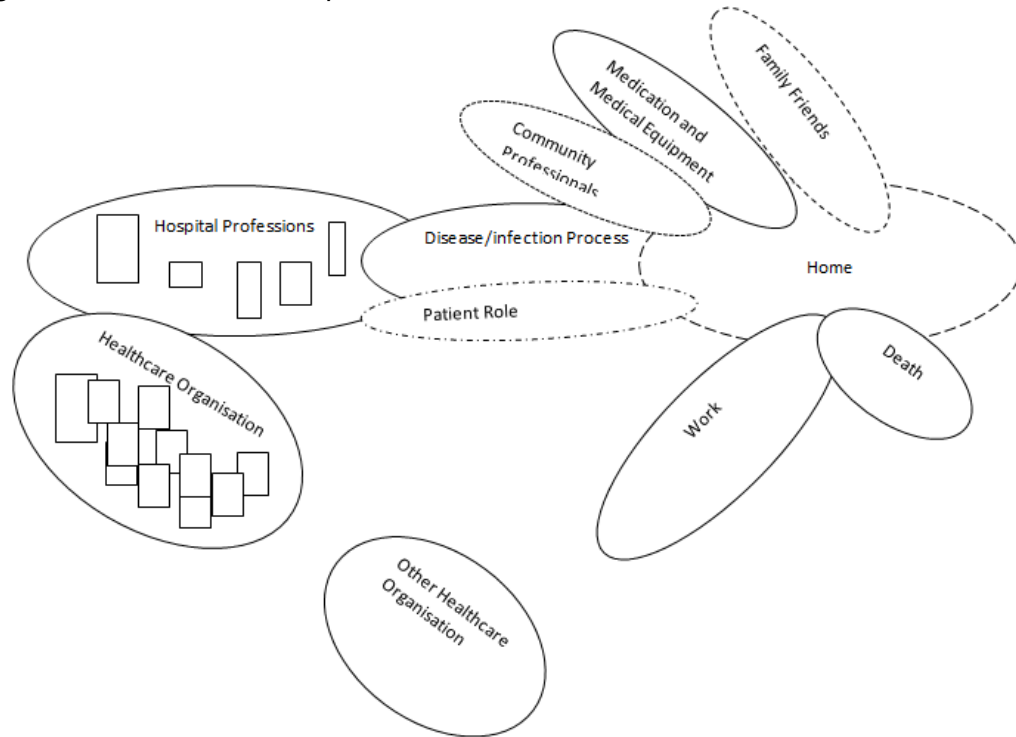
Spaces in the map between some worlds appear as gaps and Clarke (2005) emphasises the need to look for, and investigate, gaps and silences. The possibility of a gap or silence within the situation was explored by comparing the emergent categories with the identified social worlds and I hypothesised that the apparent gaps between social worlds are the areas where collaborative action and agency takes place. The emergent categories representing action now appeared within the map as interactional mechanisms between the influences from the structures of different social worlds. A more conceptual diagram (figure 20) demonstrates the categories viewed from a social world perspective with Interactive Mechanisms relationally positioned between the structural aspects of social worlds.

This began to reveal the main story of the situation and what Park (1952) called 'the big news' within the situation of concern. Although the situation contains many stories, across many different social worlds, the use of social world map analysis helped to identify and portray which story was to be told. The relationship between the influences of structure and the use of interactional mechanisms in complex and social world mapping was the foundation for moving on to position theoretical concepts within the situation.

Figure 20: Conceptual Diagram 1
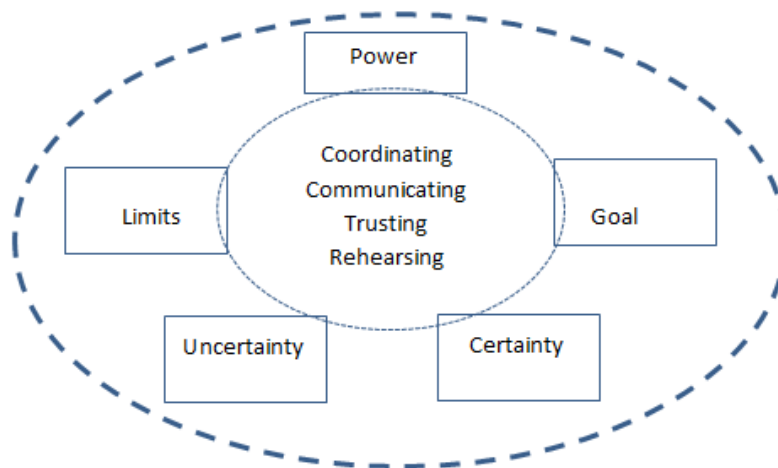
Integrating Categories

The approach taken to integrating categories and developing theoretical concepts is another area of grounded theory which is contested. Corbin and Strauss (2008) advocate selecting a core category which represents the main theme or phenomenon of research, but provide little detail about how the core category should be selected, stating: 'How a researcher defines the core category depends on how he or she wants to place the emphasis' (p. 266). This seems vague, and any unexplained or unjustified analysis decisions would leave research open to a lack of creditability, but this statement does not represent Corbin's further methodological notes, which describe extensive analysis and the intense thought, over some time, which resulted in 'finding' the core category. This description implies an emergent and inspirational aspect to making sense of categories and 'discovering' key theoretical concepts, but exactly how this takes place is not clear in many grounded theory studies.

My analytical process did not identify one core category. None of the categories appeared to be more significant than any of the others within the situation and all seemed of equal value within collaboration, and of value in terms of answering the research questions. It became clear that in order to understand collaboration my analysis needed to focus on how all the situational categories related to each other. Selecting just one core category at this point would not have explored the two related aspects of agency, through interactional mechanisms, and the more structural influence which had emerged from the data.

Corbin and Strauss (2008) name this stage of analysis integrating categories; while Glaser (2005) introduces the idea of developing theoretical codes as a process of conceptualising how codes and categories relate to each other to form hypotheses. Glaser (1998) applies theoretical coding families to data in order to analyse cause, context, contingency, consequence, covariance, conditions and other discipline specific codes (Glaser, 2005), but like axial coding (Corbin and Strauss, 2008) this had the potential to apply a framework, or impose a structure, to categories. I continued with the emergent approach (Charmaz, 2014, p. 150) through the iterative process of analysis, following links within the data and using mapping techniques to explore relationships and ask questions about the categories. This stage explored the properties and dimensions of each category and their relationship with each other. Categories became more abstracted and 'densified into more enduring' categories (Clarke, Friese and Washburn, 2015, p. 122) as an increasingly theoretical analysis of the situation progressed. More detailed maps were constructed to incorporate all categories together with the existing concept of interactional mechanisms. Memos continued to record and promote analytical thought and maps explored the positions within the situation.

Exploratory conceptual diagrams (Miles and Huberman, 1994; Corbin and Strauss, 2008) took the form of a continuum to conceptualise collaboration as a process in a linear form with interactional mechanisms placed between the other categories along the continuum (figure 21).

Figure 21: Conceptual Diagram 2
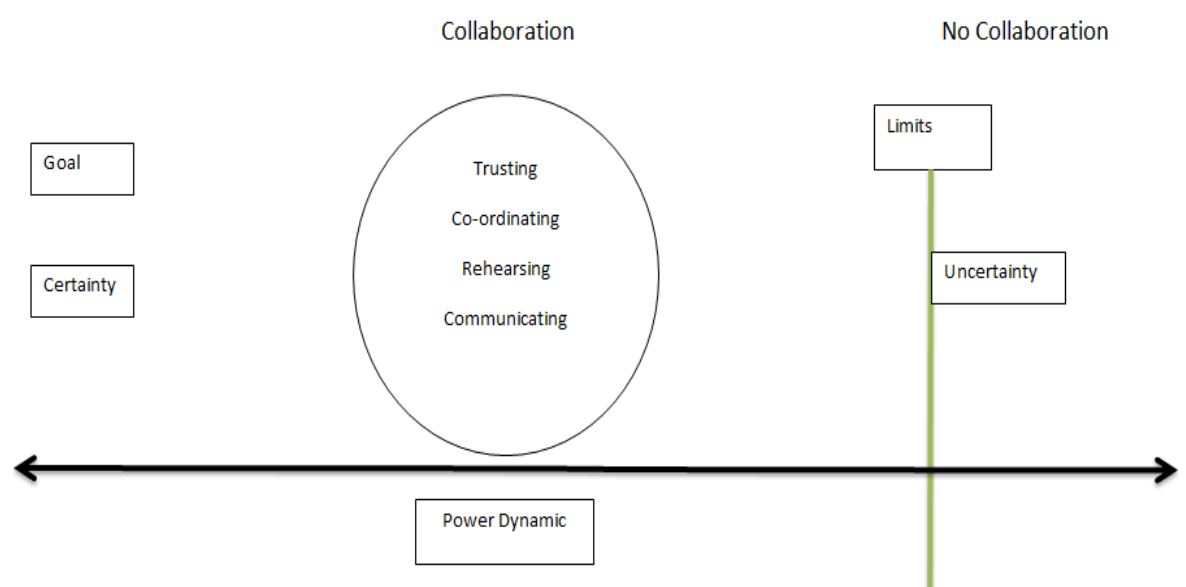
The form of a continuum was limited in representing the complex relationship between categories and the dynamic nature of interaction within the data. This diagram did promote thought about the concept raised by participants of balancing tensions between goals and limits and between certainty and uncertainty. The extremes of the continuum seemed isolated from each other and implied movement between two fixed points in one or two directions, yet within the data interaction was multi-directional and influenced by the structure. The need to find the position of each category within the complexity of the situation brought the use of positional mapping

Memo Extract 5: February 2015: Complexity
As I analyse the structural categories I go back and forth to the situational map and I'm almost blinded by the complexity of it at first, but being able to look at the whole map and then each category in detail helps me see things in new ways. I'm looking at the whole situation and I see interactional mechanisms and structure BUT feel as if I can't quite grasp it. It feels as if there is something there – just beyond what I can see at the moment. There is something about the balancing of goals and limits, certainty and uncertainty. How do these categories fit with interactional mechanisms? I need to stand back and see what's going on in the situation.
Maybe looking at the positions will be the way to focus analysis.

Positional Mapping
Clarke (2005) advocates using positional maps to plot the discursive positions of the situation and the issues associated with those positions. These maps do not represent individuals or groups, but plot the issues of focus. Each category was mapped against each of the others to plot the issues arising in the data. For example Positional Map 1 (figure 22) demonstrates my developing understanding of the way interaction relates to the influence of structures. These maps plot what interaction takes place in relation to different combinations of influences.

Figure 22: Positional Maps 1
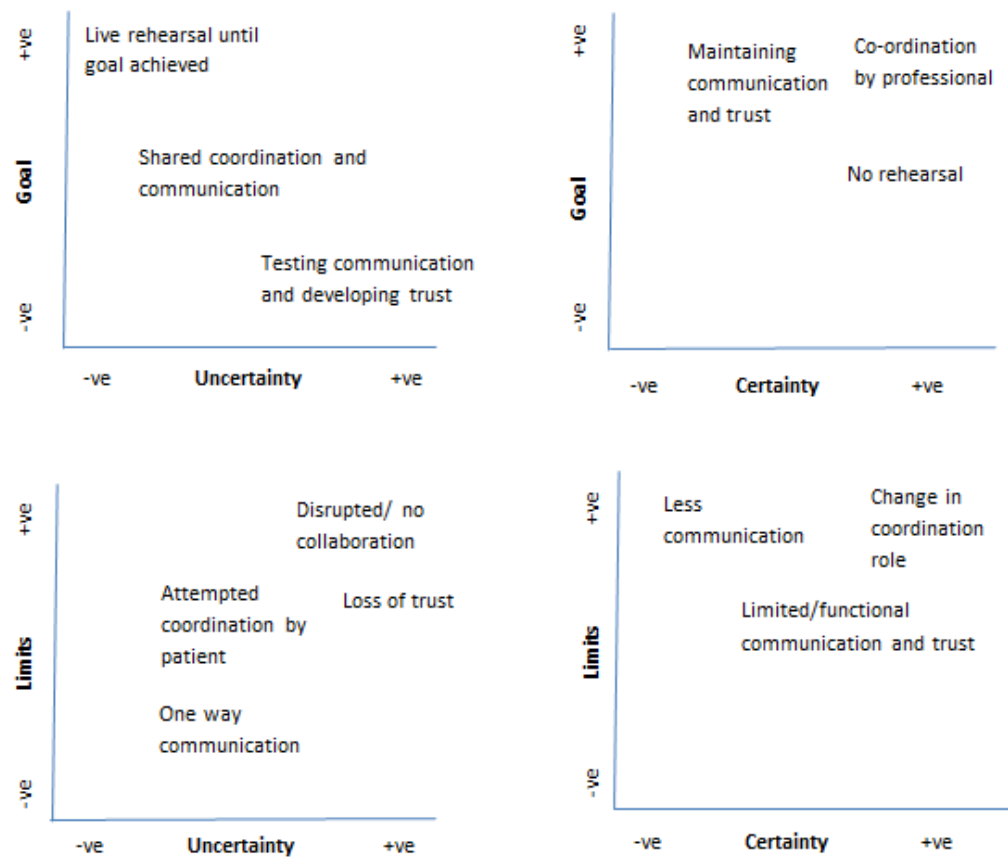
This type of mapping proved effective in positioning most of the significant issues within the situation and in capturing the changing use of interaction in relation to structural influences. However, power was a far more difficult concept to position as it was the most dynamic of concepts and appeared as a flowing feature, with aspects running through all other categories. It appeared to influence both interactional agency and structural influence within the situation.

Positional mapping helped to locate positions which are missing from the data. Each positional map contained a blank area at the negative intersection of each category and this represented issues which were not covered by the data. There was no data that covered the negative in each category. Partly this was due to the opposing, but continuous relationships in categories, for example a negative in certainty becomes a positive in uncertainty, but this also represented negative positions within the situation of collaboration. Participants discussed those who do not collaborate and, although the impact of non-collaboration is included in the data, there is no data from people who were identified as not collaborating. The people who participants discussed as not collaborating were also the people who did not respond to

invitations to participate. Therefore, the position of non-collaboration is only represented from the perspective of those who are involved in collaboration.

Developing Theoretical Concepts and Abstracting Theory

Insight from positional mapping produced a new way of looking at the dynamic relationships between categories. Returning to the data checked the developing theory and produced a cascade of clarity and insight in abstracting theory.

Memo Extract 6: February 2015   Discovering Navigation

I've been looking at the positional maps and thinking about how these concepts fit with interactional mechanisms and particularly Trust. I was thinking that Goal balanced with Limits, and Certainty with Uncertainty, but it's not that simple – they all balance each other. Participant E talked about this in terms of collaboration influencing treatment decisions i.e. more risk accepted as trust (and other interactional mechanisms) develops. Trust is demonstrated and tested through rehearsal as collaboration is developing, but there is a limit to risk accepted when there is no trust (or limited use of any of the interactional mechanisms) – unless someone coordinates.
Patient A is left to attempt co-ordination alone, but a professional coordinates collaboration for Patient B (symbol of terminal illness). Power influences every aspect of this and flows through actions, interactions and the structure. Collaboration can move/ change as the balance changes.

The desire for safe care at home is the Goal for all involved and not wanting harm or mistakes can make professionals cautious and fearful (some of the limits) and that has to be balanced with uncertainty of new treatments, changing services, certainty of treatment and clarity in professional roles. Is collaboration how evidence based practice is operationalised by groups in practice? How patients and professionals navigate new situations in the changing NHS? Navigation! – They are using collaboration to navigate the situation and navigation of the situation is shaping collaboration! - go back to positional maps and see how they fit together.

By placing positional maps together (figure 23) I was able to refocus my analytical lens and interpret the structural categories as Situational Co-ordinates, with interaction appearing as collaborative 'directions' between them.

Figure 23: Positional Maps 2

Situational Co-ordinates emerged beside Interactive Mechanisms as theoretical categories. Figure 24 is the final situational map demonstrating theoretical categories and sub-categories.

Figure 24: Final Situational Map: Theoretical Categories and Sub-categories.
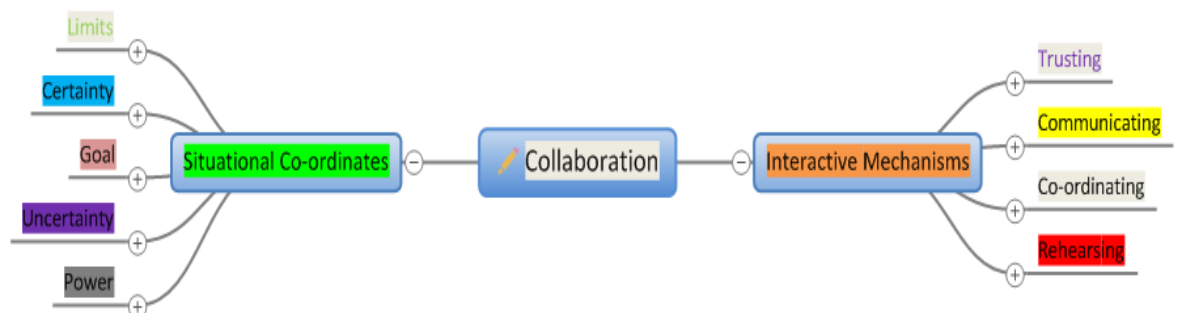
The concept of navigation was a crystallisation of analysis which revealed collaboration as a social device used to navigate the complex healthcare environment of OPAT. A final conceptual diagram (figure 25) integrates the

theoretical categories of Interactive Mechanisms and Situational Co-ordinates using the theoretical concept of Interactive Navigation to depict collaboration as a compass.

Figure 25: Conceptual Diagram 3
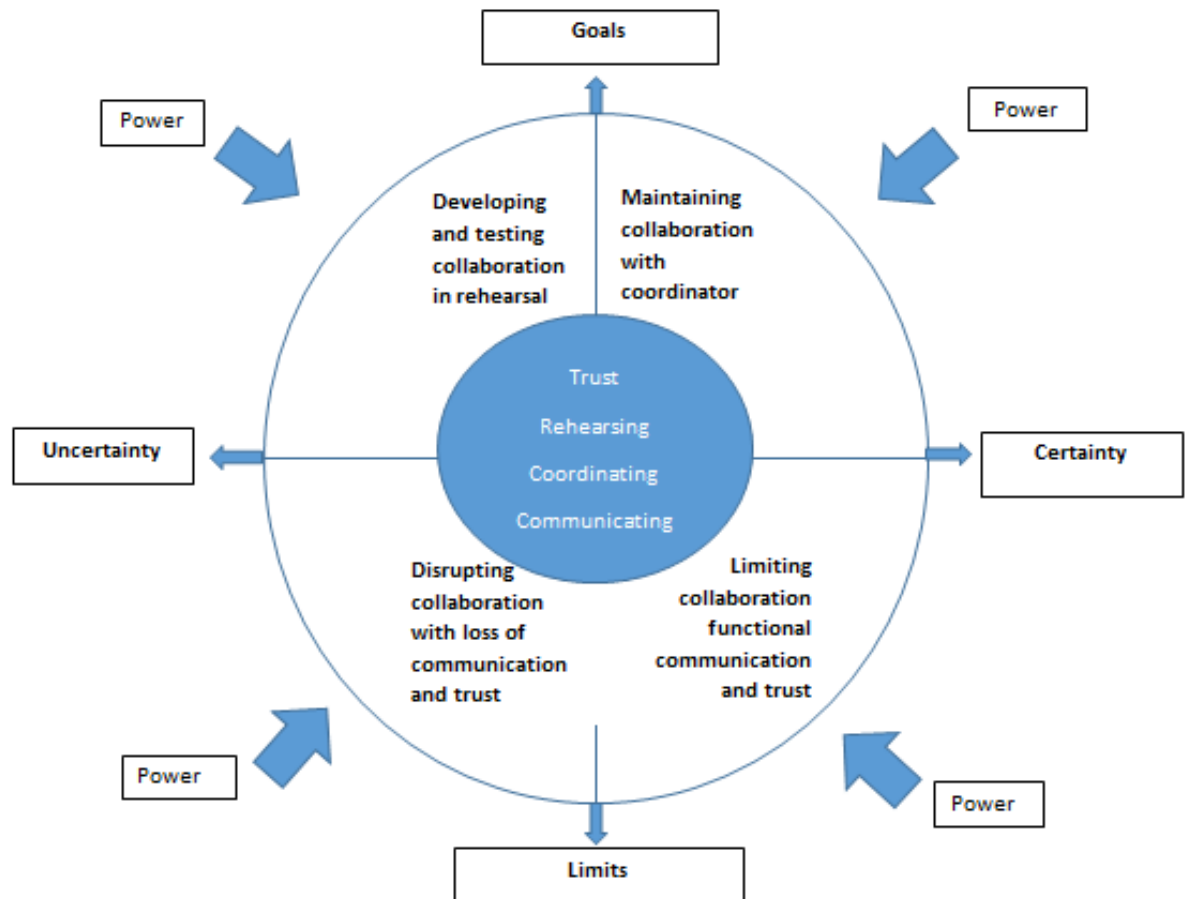
Conclusion

This chapter has traced the analysis of data and provided an account of analytical techniques and tools which are specific to grounded theory methodology. The stages of analysis present analytical activity in coding, categorising, situational analysis and the development of theoretical concepts. The use of analytical mapping tools are outlined and discussed in terms of their contribution to the process of analysis.

Analysis considers the perspectives of participants and the collective situation of collaboration. Constant comparison and reflexivity are used to support analytical decisions which ensure that all products of analysis and all aspects of the situation

are interpreted. Inductive and then abductive reasoning is used to move analysis forwards with increasing levels of abstraction to integrate categories and to develop theoretical concepts. The categories of Interactive Mechanisms and Situational Co-ordinates are integrated in the theoretical concept of Interactive Navigation to depict collaboration as a social device used as a compass to navigate the complex healthcare environment of OPAT.

Chapter Six - Findings

The Collaboration Compass and Interactive Navigation

Introduction

This chapter presents a conceptual model to introduce the theory of Interactive Navigation. The Collaboration Compass model was constructed to represent the theoretical categories of 'Interactive Mechanisms' and 'Situational Co-ordinates'[2] and to explain the complex interrelationships between them, which underpin the theory. The model is presented here to aid understanding of these relationships and to introduce the substantive grounded theory of Interactive Navigation. The model is both a product of analysis and a conceptual tool. As a product of analysis, each category and subcategory is grounded in data, and findings from the data will be used to illustrate the model. As a conceptual tool, the model aids understanding and it is used within this chapter to present and explain the theory.

The following sections of this chapter first provide an overview of the qualities and dimensions of each Situational Co-ordinate and Interactive Mechanism, and then the process of navigation is presented and outlined according to the four areas of collaboration identified in the Collaboration Compass.

The Collaboration Compass: A Conceptual Model

The Collaboration Compass model was constructed during analysis to conceptualise collaboration as a social device used to navigate complex healthcare situations and to direct interaction. The theoretical concept of Interactive Navigation integrated two theoretical categories, and their sub-categories (figure 26), which emerged through analysis of data. Participants expressed a number of Interactive Mechanisms (Trusting, Rehearsing, Coordinating and Communicating) which were influenced by a range of Situational Co-ordinates (Goals, Limits, Certainty, Uncertainty and Power). Combination of these theoretical categories represents the mechanisms and influences found in the individual perspectives, relationships and situation of collaboration in OPAT.

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[2] Capitals are used to identify components of the Collaboration Compass.

Figure 26: Interactive Navigation: Underpinning Categories and Sub-categories

The Collaboration Compass model (figure 27) depicts collaboration as a navigational process with Interactive Mechanisms at the centre of the compass and Situational Co-ordinates as cardinal points of direction in the situational landscape. The intermediate directions, between the four co-ordinates, represent different areas of collaboration. Co-ordinates orientate the situation and Interactive Mechanisms are used to direct collaboration into the area which relates to the most influential co-ordinates. Four areas of collaboration have been identified: Developing, Maintaining, Limiting and Disrupting, and each area represents the use of Interactive Mechanisms in relation to particular Situational Co-ordinates.

Figure 27: The Collaboration Compass Model
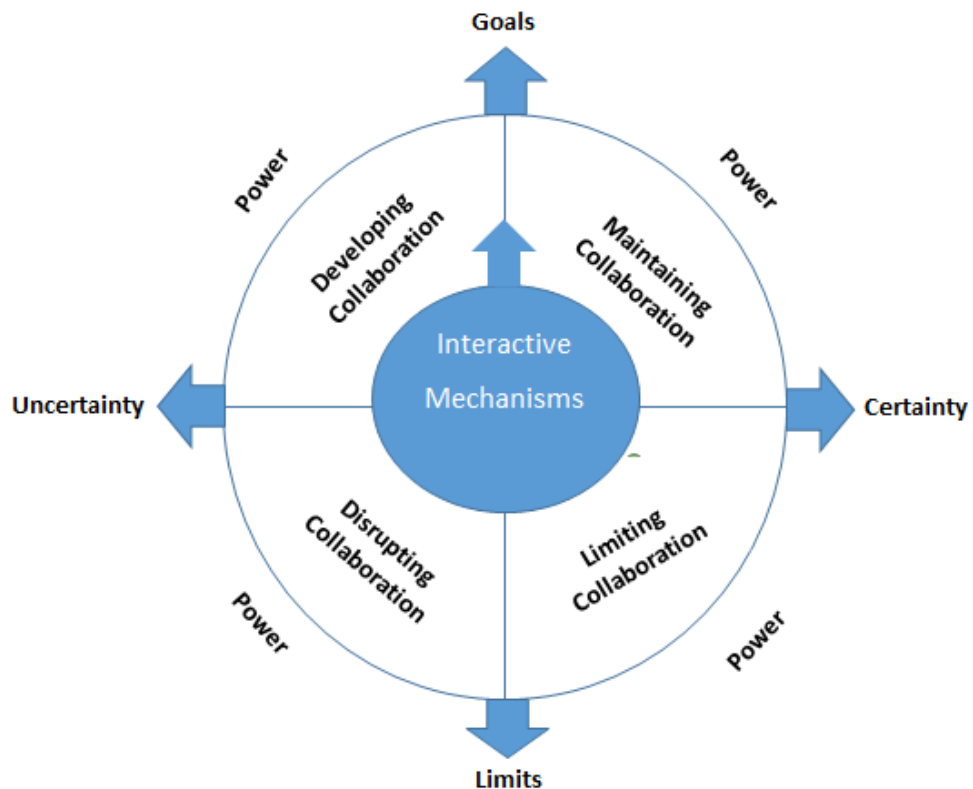
The following sections provide an overview of Situational Co-ordinates and Interactive Mechanisms. Quotations from participants are used to illustrate the findings and represent the detail and dimension which relate to each element of the theoretical model.

Orientation using Situational Co-ordinates

Situational Co-ordinates are characterised by structural elements within the OPAT situation and act as orientating points. Just as a geographical landscape is orientated by the cardinal directions of North, South, East and West; the situational landscape of OPAT is orientated by Goals, Limits, Certainty and Uncertainty. These Situational Co-ordinates relate to each other as opposing or balancing pairs (figure 28) with Certainty and Uncertainty as opposites, also Goals and Limits as opposing, driving and restricting, structures within the situation. Power is a more dynamic structural element with the ability to influence Interactive Mechanisms. It resembles the way magnetic influences in a landscape have the ability to divert the action of a compass and to alter navigation.

Figure 28: Situational Co-ordinates
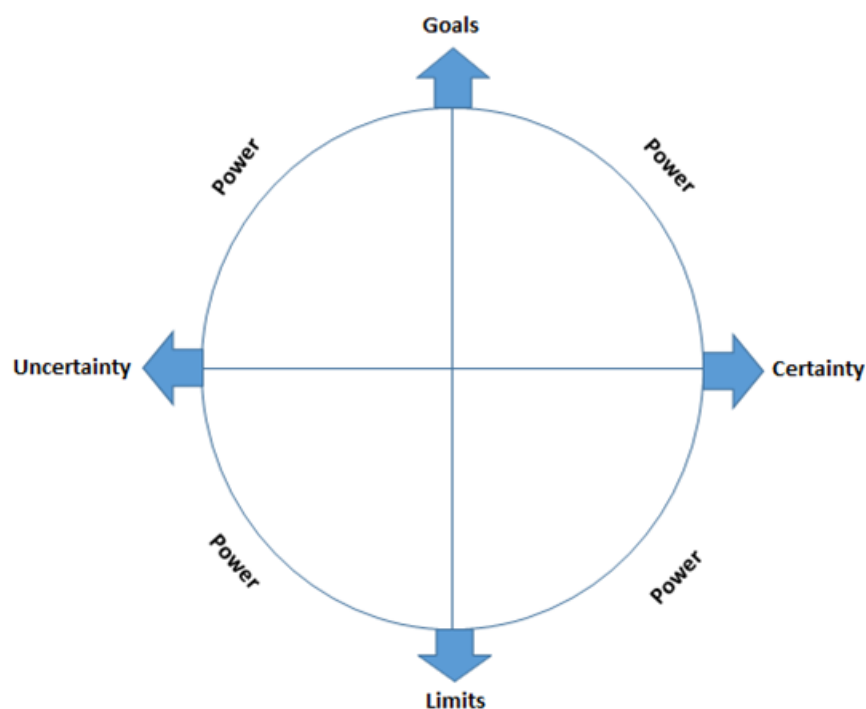
<u>Goals and Limits</u>

The co-ordinates Goals and Limits arise from issues which are individual and personal to patients and professionals or from matters which relate to organisations or professions. Goals are expressed as having significant value for participants and are discussed in terms of personal, professional or organisational aims and goals. Professionals and patients all express a shared goal of treatment at home, but the reasons for this goal vary. For patients this is about being comfortable, having a better experience and maintaining home life:

'A: being at home is naturally nicer than if I'd had to stay in hospital. I'd already been in 3 weeks, so that would have made it 10 weeks, so it's much easier to be at home. erm It's easier for the family not visiting all the time and not restricted to hospital visiting for friends. You know what I mean, but erm, how can I put this …you've got one to one. I mean, I see five, maybe five different nurses, but now they're like family' (Participant A: transcript lines 53-57)

For professionals the goal of delivering treatment at home can be multi-layered and be about focusing on patient needs and doing the best for patients, as well as delivering the OPAT service on target:

'E: you've got the patients, what the aim is for that individual patient, what your goal is for that individual patient I think is the first thing in OPAT, but equally as an OPAT project you've got to have what your aims are gonna be and what your goals are gonna be and I think we have been relatively good at saying where we expected to be every year, what our aims were.'(Participant E: transcript lines 299-303).

In the OPAT situation there is clear alignment in the goal of patients and professionals, and although there are differences in the reasons for achieving the goal, there are no disagreements about the goal itself.

Limits emerge from organisational factors and issues which arise from personal or professional restrictions and constraints with some elements, such as excessive risk or disillusion, emerging as more destructive to collaboration. These factors relate to both patients and professionals and influence or restrict interaction with others. Professionals discuss organisational factors such as lack of funding for the service, increased workload, lack of staff and lack of time as significant limitations on their ability to interact. They recognise these influencing limitations and discuss them becoming restrictive, with a point beyond which they will be unable to collaborate:

'Researcher: So do you think everybody has worked together well doing that?

F: I think on the main yes, yes, I think sometimes, sometimes frustration about a system that isn't particularly supported, and certainly isn't financially supported, always causes tension because of the fact that you're yet again

asking somebody to step up and take something else on and certainly in my team it's caused major tension. Yeh, yeh and that's why they don't really want to do it. Because they feel like yeh this is another thing, another service creep that we yet again have to pick up as part of our role. We appreciate it's for patient care but do you know what I mean? Why should we have to keep taking on these extra bits erm of service creep? You know.' (Participant F: transcript lines between, 127 and 144)

Patient participants identify hospital environments and organisations as limiting interaction due to the systems, processes and communication behaviours of some staff:

'A: Well at hospital you get it a little bit, err, … you don't see the same people because they're changing the staff all the time, but you do get certain staff that you can communicate better with. You know you get this, yes I can tell this lady and she'll understand she'll know I'm not, I'm not being a wimp,' (Participant A: transcript lines 155 -158).

Despite the many difficulties and limitations posed by organisational systems and lack of communication from professionals, patients did not identify a point where they would stop working with professionals.

Certainty and Uncertainty

Certainty and Uncertainty also have opposite positions within the compass and this reflects the balancing continuum which exists between these co-ordinates. Certainty represents codes about clarity of role, confidence, progression and known personal or professional futures. For patients, certainty is in the knowledge that treatment will be delivered on time and treatment will continue:

'B:…no it's a lot better at home and another thing you got ya injections(Coughs) virtually on time you know what I mean er they said they'd come at 9 o'clock er the latest they ever come was quarter to ten. (Participant B: transcript lines 44-46).

Certainty is also expressed as the ability to maintain a role in terms of work, family life or as a patient with a known health condition. Patient A and B expresses certainty in their long term health condition; for Patient B this is in deteriorating health and terminal illness and for Patient A it is in the physical progress made every day of being at home. Patient X expresses certainty in his expectation that professionals will perform their role:

'X: ... yes, they are doctors and nurses; you just know what they do. They do their bit and I do mine.' (Participant X: transcript lines 163-164).

Professionals also describe increasing certainty as roles and systems become established and responsibilities are clear as discussed by the OPAT Nurse Specialist:

'C: I think the core OPAT team are very aware of their role within OPAT it's the people er referring into, that's where there isn't awareness, and again that goes back to the communication and understanding of the process erm and part of my role is to help with that process which I'm starting to do and we are finding that the people who have referred in will be referring again because they have this awareness of their responsibility in the process' (Participant C: transcript lines 195-200).

Uncertainty embodies codes about unknown aspects of the present or future and the complexity of the situation and broadly falls into two types. One relates to the initial uncertainty which arises from a lack of familiarity in developing collaborative relationships and the other in the more disruptive uncertainty which results from organisational influences. A member of District Nursing Team A describes the initial uncertainty and lack of familiarity in knowing what to do:

'J: it was quite daunting, but the girls in the office, they all supported one another and you know they all sort of doubled up and made sure each other were OK and each other communicated well in the office before they all went out about it, so everybody knew sort of what had been done the process of it and erm but yeh some of the documentation was sort of, cos that was the very first one, it was quite vague.' (Participant J: transcript lines 138-142).

The impact of uncertainty which is more disruptive can be seen in the words of the Microbiologist who discussed the complexity of OPAT, with the lack of a recognised leader and unclear lines of responsibility, which give rise to uncertainty:

'D: …you know it's not just a simple thing to give antibiotics to a patient and send them home and it's not been simple when I was asked to be involved in it. … I think the problem is because we don't have a named clinician, who has patients who has beds for patients, leading on this which I think is what our OPAT service is the most majorly lacking thing erm there's nobody who's really taken the reins..'. (Participant D: transcript lines between, 177-187).

This uncertainty about the future of the service directs participants to restrict aspects of their communication and disrupts wider collaboration in order to control and restrict future workloads:

'D:… wider communication to the Trust again is something that we are hesitant about at the moment because again we are not sure about what we are advertising and we are not sure about what we can provide' (Participant D: transcript lines 333-335).

<u>Power</u>
Power is structural in terms of its influence within the situation, but unlike other co-ordinates it has no set position in relation to other co-ordinates. The influence of power is found throughout the situation and relates to all relationships, roles and responsibilities, to professionals and organisations, but also to aspects of sharing within the situation. The power individuals have, or the power they are perceived to

have, impacts on how interaction is used and interpreted. For example, professionals discuss empowering patients and giving them choice in having treatment at home:

> *'D: …because we've got a goal to improve patient choice and to be able to treat them as well as they are as an inpatient with the same outcome but give them more opportunity to get out of hospital with all the benefits that that brings so that's got to be the first thing for me.'* (Participant D: transcript lines 365-370).

Yet patients are not empowered and interpret this as controlling aspects of their behaviour and limiting choices:

> *'A: Well yes, I think I've got to do what I'm told, like when I came out of hospital I was told, erm I could, you know, this was a new thing they did in homes, erm, but I had to respect that I was coming home, but I had to come home as if I was still in hospital.'* (Participant A: transcript 1 lines 354-357)

The dynamic nature of power in the situation is also expressed well by nurses who discuss feeling empowered by their key collaborative role in OPAT, yet also feel powerless in some situations. Nurses have power in their key role enabling treatment to be delivered at home:

> *'V: Without us it wouldn't work.*
>
> *Researcher: Yeh?*
>
> *V: People would be in hospital wouldn't they.*
>
> *W: They could still get the treatment yeh.*
>
> *V: But they would be in hospital it wouldn't be in their own homes would it.'* (Participants V and W: transcript lines 557-561)

Yet nurses also feel undervalued and powerless in some situations:

> *'C: I got to a stage where I found that because I was a nurse I didn't feel people were taking me seriously.'* (Participant C: transcript lines 84-85).

The contradictory nature of power, which ebbs and flows within the situation, is also expressed by patients who respect professional status and feel powerless in the hospital system:

> *'A: when I had me first MRI done at … they sent it erm, faxed it or whatever you do, across to, for them to have a look at it erm but I think it was the doctor at (hospital) that decided erm the antibiotic to give me but …. mebbe this is where it's all going wrong because I'm between two hospitals and each doctor's waiting.'* (Patient A: transcript 2 lines 58-61).

Yet they also feel powerful in their own home and able to monitor and correct standards of care as expressed by participant B:

'B: Yeh I just go: wash your hands, and one didn't put his paper down properly on here and I ses ya supposed to have a bit of white paper on there, so sometimes you have to be er   you have to be, I think the patient has to know as well, not just the nurses.' (Participant B: transcript lines 422-425).

Although codes relating to power are present in data from all participants, they view power in different ways. Patient participants either do not see power as being part of their situation or they equate it with professional decision making. Professionals vary in their response, with some acknowledging the complex nature of power and others seeing the OPAT situation as empowering for patients and nurses. Participant F sums up the complicated influence of power within interactions:

'F: There's power everywhere in the NHS isn't there (laughs) and I suppose the only time power becomes an issue is in the management element of it, and that sort of pull me-push me bit, and the consultant power and how eventually, if all else fails, if I've got a consultant in the way then, I'll get listened to.   So if you wind (name of a consultant) up enough he fires the guns off for you. But it's a real shame that you can't do that yourself.' (Participant F: transcript lines 289-294).

Interactive Mechanisms

Interactive Mechanisms form the centre of the Collaboration Compass (figure 29) and represent the interaction between participants. Collaboration features four Interactive Mechanisms which are closely related, and in many cases are used in combination together. The mechanisms all feature the action of participants and therefore retain gerund names to denote the agency involved in them. Although Trusting, Communicating, Coordinating and Rehearsing can occur together, there are differences in the way they are manifested in each area of collaboration. This section provides an overview of the characteristics of each mechanism. The role and action of these mechanisms in collaboration will be explored in the following section.

Figure 29: Interactive Mechanisms

Trusting
Rehearsing
Coordinating
Communicating
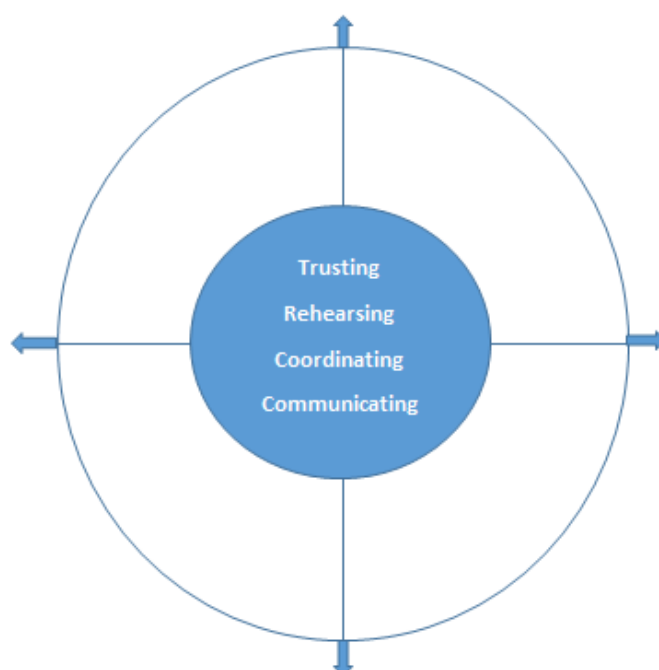
Trusting

Trusting is based on the different aspects of trust and confidence expressed by the
participants and its properties are in trusting self and others, as well as being
trusted. Trust enables sharing, reciprocity and transaction to take place.
Professionals discuss the need for trust and the advantages of trusting other
professionals and this is articulated by a Community Staff Nurse:

> *'I: Because at the end of the day it's still a drug and it's still got to be prescribed
> and we've still got to give that you know what I mean, so you've got to trust who
> you've worked with in regards to the hospital team or yourself, but who's
> actually put it in place? I think I felt a bit relaxed in this area with this with
> midlines and the cannulation and everything cos I know (names Participant C)
> and I sometimes think when you can put a face and a relationship with
> someone its better.'* (Participant I: transcript lines 101-105).

Patients identify trust in the expectations they have of professional roles, loss of
confidence when expectations are not met and the confidence they feel with
professionals they trust:

> *'B: I trust them yeh, yeh, yeh, I have confidence in them cos I know what
> they gonna do and I know if they gonna do it wrong I can point it out.'*
> (Participant B: transcript lines 419-420).

Rehearsing

Rehearsing emerged from an in vivo code, and is the most densely coded
interactive mechanism. It involves working with others in new ways, learning and

embedding interaction, managing mistakes and occasionally needing to adlib to ensure collaboration. Participant C likened collaboration to a play with a need for rehearsal:

> *'C: yes we need lots of dress rehearsals and sometimes people forget their lines and wobble of the stage but yeh it does work well because we can see erm how well patients have done we haven't had any major problems.'*
> (Participant C: transcript lines 120-122).

The word rehearsal became an in vivo code as it originated from the word used by Participant C and it represents the qualities of developing and building new routines of interaction between those involved in OPAT.

Coordinating
Coordinating, for the participants of OPAT, has properties which initiate action, respond to the action of others and direct or maintain action within the situation. Although patients express carrying out some aspects of co-ordination they are less involved in co-ordination activity than professionals, who all identify co-ordination as part of their role. At times co-ordination is shared and in some cases a single professional assumes the role of co-ordinator. Coordinating involves facilitation, organisation and knowledge of systems and processes. Participant E (Pharmacist) describes the complexity of a co-ordination role:

> *'E: they'll (clinicians) ring me and say I need to send them (patient) home but they don't know what to do so then it's a case of you've got to show them where the paper work is erm got to go to the ward, usually print it out, go through them. How to fill the document, what needs to be filled in then speak to the nurse about what their role will be, this is the DN contact number, this is who you have to ring. You then have to go back to the doctor to talk about the scripts they will have to write, so not only the discharge, it would then be the community medication chart will have to be written, advice on diluent, advice on flushes, do they need advice on whether you need a midline or a cannula, if they need a midline then how you contact the IV team erm and then make sure you have actually got enough medicines in pharmacy to supply because a lot of the drugs we use aren't heavily stocked…. we often keep a week, it depends and if it went on two weeks we then have to get a supply from the wholesaler to arrange that to then make sure it's in for the next day so all that coordination takes quite a bit of time.'* (Participant E: transcript lines 25-36).

Communicating
The non-human factors within the situation are all associated with communication; being either methods of communication or items which are the focus of communication. Technologies such as computer systems, Clinical pathways and telephone systems are established to set and maintain methods and topics of communication. The properties of communicating are in initiating, developing and maintaining communication. Initiating communication involves one-way

communication and receiving a response until two-way communication is maintained. Participant C highlights the importance of communication continuing:

> *'C: (communication) it's one of the most important things not only with erm your patient the people involved within their care erm and making sure it continues and doesn't stop erm and hopefully we've put in quite a few methods in place to make sure that communication cycle continues until the patient finishes their OPAT.'* (Participant C: transcript lines 182-185).

Interactive Navigation using the Collaboration Compass

The theory of Interactive Navigation conceptualises collaboration as a social device used to navigate complex situations. Structural Co-ordinates of certainty, uncertainty, limits and goals orientate the situation in the same way that points of north, south, east and west appear in a compass and are used to orientate a geographical landscape. Interaction takes place through the use of Interactive Mechanisms and, like a compass; these mechanisms are used to find a position which corresponds to the influence of Situational Co-ordinates. The ability to navigate between competing Situational Co-ordinates is influenced by power, and collaboration can be directed into a position in different areas, which produce developing, maintaining, limiting or disrupting collaboration.

The situation is continually navigated by interpretation of Situational Co-ordinates and the use of Interactive Mechanisms. Navigation involves interpreting and balancing the influences from different co-ordinates, and collaborative direction can change, depending on interactive navigation of the changing situation.

This section presents each area of collaboration and explores how interaction aligns with Situational Co-ordinates to direct collaboration. Positional maps, which were developed during data analysis, are used to illustrate and locate each area of collaboration in relation to the co-ordinates of the Collaboration Compass. The maps use Situational Co-ordinates as axis and the interaction which takes place is plotted between the co-ordinates. These maps do not represent individuals or groups, but do plot the issues of interaction which take place in the different areas of collaboration. Examples from each patient's care are used to demonstrate the process of Interactive Navigation and to illustrate the collaborative differences in each patient situation.

<u>Developing Collaboration</u>

The development of collaboration is orientated by the Situational Co-ordinates Uncertainty and Goals (figure 30) and is directed by use of all Interactive

Mechanisms. OPAT care for each patient participant begins with uncertainty and collaboration is developed once the shared patient and professional goal of treatment at home is identified. Interaction then directs collaboration towards the more influential co-ordinate in achieving the goal.

Figure 30: Positional Map for Developing Collaboration
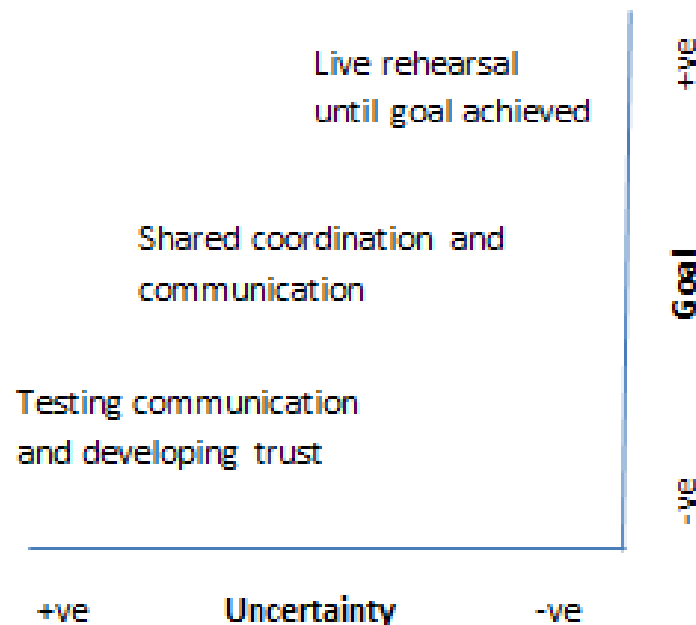
Each patient's OPAT situation is alike in the shared goal of treatment at home and in the initial uncertainty which stimulates collaboration. Patient A discusses the uncertainty about her treatment and the point at which a goal is identified. This initiates the development of collaboration:

'A: I've got to be honest, erm because nobody seemed to know what to do. I was a case; well they just didn't know erm they were trying to find out what the bug was. One was wanting me to have a biopsy, … one wouldn't do the biopsy, erm and then this gentleman wanted me to wait, ….,but there was a one doctor came in on the Wednesday morning and he said: I think it's about time somebody made a decision, and he decided er to start this ...' (Patient A: transcript 1, lines between, 188-196).

Patient B's OPAT care begins at the point when his long term condition has become terminal and he is aware of his limited time. He sees the uncertainty of hospital procedures as wasteful of his time and, even though OPAT is a new treatment, and he is one of the first patients, he views any uncertainty as worth achieving his goal of spending time at home and he discusses the freedom he has to spend time with his wife and family:

'B: We went to see our newest arrival. Ah lovely. She is little though isn't she? ...laughs. Yeh. (Emotional and wiping eyes).

Researcher: So being at home means..?

B: We pop out. We work things out so that they come and do the injection and we say right come on, we can go now and we go out for a bit…coughing. We don't go far.' (Patient B: transcript lines 199-214).

Uncertainty influences participants to interact, and the first interactive step is communicating the goal with another person. For Patient X the uncertainty is about income and home life while he is in hospital and he is first to identify and communicate his goal:

'X: I was in near enough two weeks and I needed to get back for work and we were moving (gestures to boxes in the room) so I asked if I could have it at home. They weren't sure at first, but after a day or so the hospital put the line in and it was all good.'(Participant X: transcript lines 20-23).

Reciprocated communication of a shared goal leads to increased interaction through rehearsal, shared co-ordination and trust. Rehearsal involves working together towards achieving the shared goal. Participants discuss communicating, learning from mistakes and adapting existing systems to develop and embed new ways of working. Participant F describes rehearsal and the trust which develops through working together across departments:

'F: …the busier ambulatory care got the worse our patient experience was getting. So it went to a real low time when I think one patient spent eight hours waiting for drugs. Which is just completely against everything that OPAT to me stands for, which is about a slick system that get patients home where they want to be to continue you know recovery that way, erm so I think at that point we realised we had to change erm and at the time we didn't have enough ceftazadime in the hospital to be able to get patients out on it, and I worked quite closely with pharmacy to say look we have to do something different we can't have this wait around , we can't have patients coming back two days later to get the rest of their ceftazadime . So now I know downstairs in pharmacy there is always the equivalent of a week's course. (Participant F: transcript lines 86-95).

Teams also discuss learning together and sharing responsibility to reduce uncertainty and achieve the shared goal as discussed by two Community Staff Nurses:

'H: It was scary (laughter) I mean I've done antibiotics for twenty years but I really was. I was so pleased that in the community they did it in pairs so that responsibility was shared, shared whilst it was both of ours. I mean, I went with you a few times as well in the beginning.

G: Yeh, yeh.

H: I knew about antibiotics but I'd never done them in the setting and neither had G and it was all new for both of us, but now its fine.' (Participants H and G: transcript lines 159-166).

Participants rehearse by sharing knowledge, learning from each other and using different forms of communication to build confidence, reduce uncertainty and direct collaboration, which is orientated by the goal:

'C: …we've learnt from it and we've learned that people don't like reading a set of instructions they like flow charts so we've designed flow charts. We've also looked at the pathways as well to see whether we can modify them and "Lean" them for example erm the cellulitis pathway we had two. What I've done is I've brought them together, so erm it's up to the practitioner then to write down the contact numbers whereas before it was pre-printed and the reduced number of things, options of having to choose, seems to have reduced the options of complications.' (Participant C: transcript lines 33-39).

The process of interacting and developing new ways of working through rehearsal reduces uncertainty and builds trust. Participants discuss trust developing as transactions take place and expectations are met, for example a District Nurse discusses being asked to take on more patients, and in return receiving support and assistance from the OPAT Specialist Nurse, which builds trust:

'V: I think in this area we've had an awful lot more than anybody else …… erm and the main lead from the hospital erm … She's been really really good, if there's any problems that we erm find from other hospitals if they are asking us to erm…(take a patient) that's not on our pathways you know……Yeh erm if we contact (Names Participant C)and she's great and she'll try and sort it out.' (Participant V: transcript, lines between, 62-70).

Co-ordination is shared and each participant, or group of participants, describes some contribution to co-ordination as people work together towards achieving the shared goal. Patients are less involved and it is professionals who take on most co-ordination. Participant C describes co-ordination and facilitation at the beginning of the process:

'C: I guide them through the process and guide them to which information that they need to fill out and then how to fill out and then where to send that information on. I then erm contact the iv team, which I am also a member of, to organise erm appropriate vascular access for that patient and then speak to the pharmacist team, and the microbiology team, just to make sure that that antibiotic choice is OK for that patient and that that antibiotic choice is actually in the hospital and then I erm collaborate with the medical or surgical team.' (Participant C: transcript, lines 6-12).

All professionals discuss aspects of sharing when interacting with others to develop collaboration and achieve the goal, and professionals share the view that treatment at home will empower patients to make choices and be more involved, as members of the District Nursing Team discuss:

'K: But again going back to what erm about patients in their own homes and them having a choice over their treatment it's always, it can only be for the good.

R: It's empowering for the patients.' (Participants K and H: transcript lines 418-420)

The extent to which the patients have power to make choices and be involved differs. Patient X is empowered to ask for treatment at home and is able to maintain work and home life, but his interaction with professionals is limited. He trusts professionals to fulfil their role, but he sees a clear distinction between himself as the patient and professionals and is only minimally involved in rehearsal and co-ordination:

'X: I'm not involved. I'm here and I have the injections. Beyond asking for this I'm not involved. I'm not part of any decision making, they do all that. I couldn't do any of that.'(Participant X: transcript lines 126-129)

Patient B is the most actively involved of the three patients in developing collaboration as he and a range of professionals work together towards the shared goal of his treatment at home. He discusses the development of OPAT as skills improve, knowledge is shared and relationships are built, with him taking an active role in monitoring:

'B: But they had it to top this time, they had it off pat. Some were better than others weren't they. No don't mention no names cos it's on there (pointing at recorder).

Researcher: Because they were learning a new skill is that what you mean; because it was new to them?

B: Yeh and everything was done by the book. They've come this last time they've done it quite a lot haven't they… and they were quite quick at it weren't they. They were very good. Yeh, I have to keep them right like.

Researcher: So do you feel you know it really well now?

B: Yes, Yes I do' (Patient B: transcript lines 91-93).

Patient B discusses active involvement using Interactive Mechanisms as he communicates with professionals to solve problems and build relationships in rehearsal of new procedures. He describes developing trust and coordinating visits from different professionals and although he has respect for professionals he discusses them as partners and is comfortable to challenge them.

Patient A is less involved in interaction during the development of collaboration and discusses the negative impacts of uncertainty on trust and communication:

'A: I must admit then I was starting to get a little bit frightened because well I thought if two won't do it. Why? and nobody was telling , they were just saying because it was going in your bone, they didn't say whether it was dangerous …, and I suppose I could have asked but you don't, you back, back off a little bit sometimes.' (Patient A: transcript 1, lines between, 211-215).

Although the goal of OPAT is identified and shared there is limited interaction involving patient A. She acknowledges that past experiences and culture influence the way she interacts with some groups of professionals, and she associates professional roles with hierarchy, which hinders open communication:

'A: I don't know what it is, I think it's because(laugh) they doctors erm and you think well they know what they're doing and maybe I'm being a bit cheeky, I suppose its cos I'm older and it was the way you were brought up...' (Patient A: transcript 1, lines 217-219).

Patient A clearly identifies herself in the role of a patient and even when she has close and trusting relationships with professionals, she has expectations of patient and professional roles:

'A: Yes I do, yes erm because I'm still a patient of the, I mean as I say they're like family coming in, but they are still very efficient. I don't mean that they are flippant or,… they still do their jobs like they should do it, they just make you feel more comfortable, they talk to you while they are doing the job , but I still know they are district nurses and they know I am a patient.' (Patient A: transcript 2, lines 45-48).

Far from being empowered Patient A's goal is to be treated at home, but to maintain the patient role and be 'cocooned' and 'cared for' with the responsibility to obey professionals who respond to her paternalistically:

'A: I hadn't to start (laugh), as he put it, I hadn't to start moving the furniture around (laughter). Erm you know and that's what sometimes the district nurses keep saying to me you know. If I say oh I would have loved to have done that. No remember, if it wasn't for us coming in you'd still be in hospital. So yes I have to be responsible because it's not fair on what's happening to me if I start trying to, which I can't because as I say I've got no energy, but as I call bit of dusterin, erm trying to do too much that I'm not supposed to do you know erm, I'm not being, well I'm not being responsible then, because I'm, I'm going against what I've been told to do.' (Patient A: transcript 1, lines 356-364).

Some rehearsal activities do take place in developing collaboration, but Patient A is only minimally involved in using new methods of communicating with nurses:

'A: …for instance erm they were coming yesterday morning to take my line out and when I realised what was happening, I had a erm telephone (number) given right from the beginning, erm to ring if ever there was anything, you know and I rang straight away and told them you know so that they would save coming out.

R: Ah right

A: You know, so that way yes I … can get them at the end of the phone, I don't actually get the er,I get through to an office but they know straight away which district nurse is coming to see me that day and they get in touch with that district nurse' (Patient A: transcript 1, lines 139-146).

District nurses recall the uncertainty, communication and shared coordination that takes place between professionals to establish the goal of Patient A receiving treatment at home, but this does not include Patient A and elements of uncertainty remain:

'G: should she be having this for this long and although she was backwards and forwards to the hospital every week and her bloods were done everything was done as should be….but there was problems at the hospital end because she was under two consultants for different things and one was erm saying you know I want her to continue but wasn't seeing her … and the other one was the sort of the same as us erm a bit tentative if you like, and well I need for somebody else to look into this because I don't think she should be having this for this long….

H: So the responsibility was everyone concerned, yourself, the hospital and we were all double checking.' (Participants G and H: transcript lines between, 181-202).

Collaboration is developed from uncertainty and all Interactive Mechanisms are used to navigate towards the goal shared by patients and professionals. Patients interpret their role in collaboration in different ways. Two patients (A and X) have minimal involvement in interaction. They draw a distinction between professionals and patients and identify themselves in a patient role. The third patient (B) uses all Interactive Mechanisms and takes an active part in directing collaboration to achieve the shared goal.

<u>Maintaining Collaboration</u>
Maintenance of collaboration arises once a shared goal is achieved and navigation is orientated to maintain the goal with more certainty in the situation. There is no rehearsal in this area and interaction is based on co-ordination, communication and trust (figure 31) as roles and responsibilities are confirmed.

Figure 31: Positional Map for Maintaining Collaboration
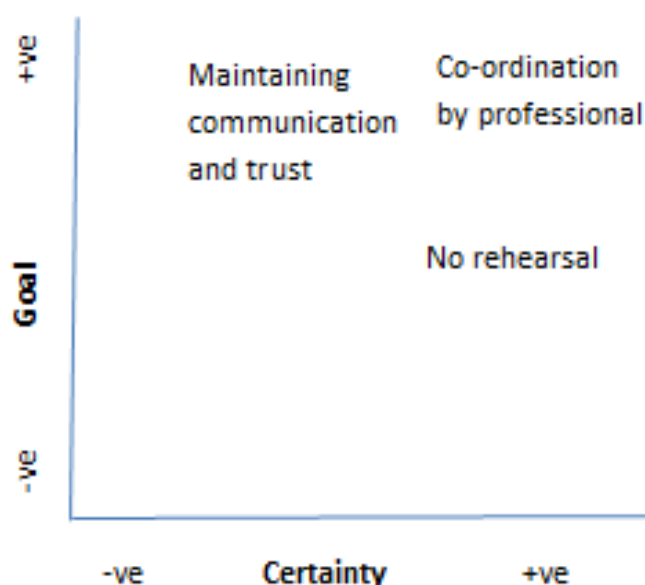
There is minimal collaboration in this area for Patient A as there is no certainty about treatment and it is uncertainty which remains the orientating co-ordinate in her care. Patient X and Patient B are both receiving a short course of antibiotics which provides some certainty, but it is the situation for Patient B where collaboration is maintained.

OPAT for Patient B features recurring, short term treatment which brings the certainty of routine. In addition to this, Patient B is very open about the certainty of his prognosis and he communicates his deteriorating and limiting health:

> *'B: (coughing and breathless)…every time I have a flare up I lose a little bit of lung, a bit of lung capacity. I noticed this time I've lost a lot, a lot of capacity.'* (Participant B: transcript lines 127-129)

The certainty of Patient B's condition, together with the short term nature of his treatment, and the inevitability of his deterioration influences the interaction which takes place. Co-ordination emerges as the role of one professional (Respiratory Nurse Specialist) who directs and facilitates to ensure that the goal is maintained for Patient B:

> *'F: I coordinate from here, the other guys know what to do and they will do it if I'm on holiday, but they'll devolve it to me if I'm around which is sort of fair enough. I think it's just you know the patient more, one, you become more confident with the patient type so erm you can sort of get a much better feel for how the patient's going'* (Participant F: transcript lines between, 77 - 80).

Knowledge of Patient B's condition, and particularly his terminal condition, influences Participant F to take on co-ordination even if it means taking on extra responsibility:

> *'I would hate to see that I hadn't tried to do everything I could to improve my patients journey erm and if that means I work a few hours extra and if that means I put in a little bit more to coordinate care that's what I do erm and that's fair enough as manager of a service I think that's fair enough ...*
>
> *… It's much better for our patients you know so my aim is if it's much better for my patients then that's what I'm gonna deliver . You know I wouldn't wanna be stuck in hospital for two weeks, and towards the end of life it's even more important.'* (Participant F: transcript lines137-140 and 285-287)

By coordinating and communicating Participant F maintains the goal and ensures more certainty. This maintains confidence in the service and trust in collaborators and the Pharmacist discusses trust in the co-ordinator:

> *'E:... I probably am less worried about because I know (names Participant F)…will review that person every week.'* (Participant E: transcript lines 161-162).

This area of collaboration is shaped by navigation towards the goal, and use of co-ordination, trust and communication create the certainty required to maintain collaboration. The power dynamics also change as the co-ordination role is taken on by one professional who acts as a hub for communication with others.

<u>Limiting Collaboration</u>
Collaboration is limited when navigation is influenced by certainty, but also by the limiting influences within the situation (figure 32).

Figure 32: Positional Map for Limiting Collaboration
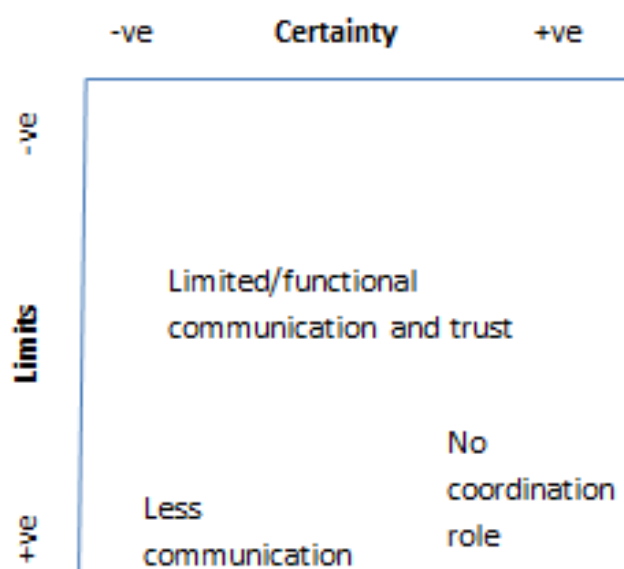
Personal or professional limitations are identified in association with certainty in the situation. All participants identify limitations in collaboration which impact in each patient's situation and it is the communication and interpretation of these limitations which influences how interaction takes place.

As in all areas of collaboration there are tensions between co-ordinates, and navigation involves finding a balance between them until one co-ordinate becomes more influential and changes the collaborative direction. The influence of Limitations is dependent on the interpretation of their significance within the situation. Patient X communicates limited time for interaction due to work commitments, and this is balanced with professional workload and time limitations. In the case of Patient X, interaction is adapted to accommodate both patient and professional limitations and to navigate between the certainty of a short course of treatment and identified limits. Interaction is simple and functional as Patient X travels between professionals to communicate with them individually and one at a time, but there is no coordination role evident in this:

> 'X: I asked for it and we arranged a time so I could still work. It has to fit in with their other patients and shifts and whatnot, but it works well. The only thing I'd change is going to hospital every couple of days to get blood results.
>
> Researcher: Who takes your blood?

X: I go to the GP's and then get results at hospital; that could be a phone call, but I suppose he looks at me leg and hopefully it's not for long this time.'
(Participant X: transcript lines 52- 59)

Recognition, and communication, of a limitation acts as an influence on others to alter their interaction. Depending on the type of limit and how it is interpreted can result in altered interaction. Some professionals discuss a need to navigate by their professional and organisational limitations, such as workload, lack of time or lack of resources, and they communicate these limits to others. They reduce their communication and navigate by their constraining professional demands. Community Staff Nurses discuss their workload limit:

'Q: Once we had to say no to actually taking any more on didn't we? Once we had a lot and massive staffing issues didn't we? So we did get, I think, did we accept five, and then we kind of were like that's our limit that we can do at the moment.

L: We have an agreement now that, erm if we feel that we are at capacity, is to liaise with the other teams to support us.' (Participants Q and L: transcript lines 253- 257).

There is a need to balance limitations with other co-ordinates. This is evident in the care of Patient B, where the certainty of his terminal situation and short course treatment is balanced with his limited physical ability and the lack of staff resource available to the specialist nurse (Participant F):

'F: I do think there is a point where I can't expect all my staff to work that extra hour a day that I work, do you know what I mean, without getting paid, erm I can expect of myself because I think that's what I wanna do, but I can't put that onto them and they are already working very hard to deliver what is an incredibly busy service.' (Participant F: transcript lines141-144)

The certainty of terminal illness and communication of physical limitations are interpreted as significant enough to redirect collaboration. This orientates the situation towards maintaining the treatment for Patient B, and away from the professional limitations. The respiratory nurse reduces her communication in the wider OPAT project and redirects collaboration by taking on the co-ordination role for Patient B, despite her increased workload:

'F: But there is also that self-preservation side of it, like I can't take on anybody else's issues do you know what I mean I can't take on what they are going to do with diabetic foot…: I can't take on if the medical director says OPATs not working. All I can say is it is working for my group of patients and they love it. So you know I can't talk for anybody else and therefore my involvement with all those extra discussions, I sit back, as long as I don't feel there's going to be too

much impact on what is delivered to my patient.' (Participant F: transcript lines 229-236)

In the case of patients X and B, both communicate limitations which influence interaction and direct the collaboration in their care, but Patient A does not communicate her limitations. She has limiting pain and immobility, but identifies that she doesn't always admit her limitations to professionals for fear of judgement:

> *'A: ... you know, like when I had so much pain, sometimes you wondered oh did they think I'm just putting it on, and cos everybody says I look well and you know, erm, but there were certain nurses you knew, they knew that you weren't putting it on, if you were in pain you were in pain so yes there were certain people that you could communicate (with) better'* (Patient A: transcript 1, lines 157 -161).

She also discusses experiencing pain and discomfort in order to ensure that she does what she has been told to do and to maintain her responsibility as a patient:

> *'A: …it's not pleasant erm and It's on me back, so it means I'm like in the car all that time erm and last time I went, getting parked was horrendous erm and then I'd have to go in and the MRI takes about 40 minutes to 50 minutes and I'm on me back all the time. Then I would have to get out, and get back in the car again, and travel home again you know erm. But if I've got to do that I will do it.'* (Patient A: transcript 2, lines 45-49).

Patient A's limitations are not explicitly communicated within the OPAT situation and therefore do not influence interaction, whereas professionals clearly identify, communicate and navigate by their own limitations within the situation. Participant E (Pharmacist) describes the interpretation of professional limitations:

> *'E: There's possibly some discussion … around erm how much they should get involved … the consultant for the patient wasn't here, they were on holiday and the decision needed to be made as to whether to continue and there was no one to make it. So one kinda said It's not my place, I'm not doing anything with this, and the other one said we can't just do that and took the responsibility on ...but then the other one argued that we shouldn't be doing that and the responsibility shouldn't lie with us, it should lie with the referring clinician if he's not there then he should be delegating out. His team should review the patient…'* (Participant E: transcript lines 198-210)

Participant C discusses the impact such professional limits have on patients and other professionals as communication becomes one way and uncertainty increases:

> *'C: … patients are left in the dark they don't know what's supposed to happen with them. They're told to report for a particular scan and they're told to ring through erm for results and the physician at the other hospital will erm speak to them, but they never do and then they are left desperate knowing what's, what's meant to be happening with them.'* (Participant C: transcript lines 92-97).

Within this area, collaboration is limited by navigation of certainties and the personal or professional limitations which exist in the situation. Interaction is limited and functional with reduced communication and trust. Power within this area of collaboration relates to the capability of individuals to use Interactive Mechanisms to communicate their limitations and to influence others. The communication of terminal illness has significance and influences one professional to work beyond limits of staff resources and contractual hours.

Disrupting Collaboration
Navigation of increasingly restrictive limitations and uncertainty within the situation disrupts collaboration. Uncertainty may exist within the situation for many reasons, but when associated with limitations it disrupts interaction with loss of communication and trust (figure 33).

Figure 33: Positional Map for Disrupting Collaboration
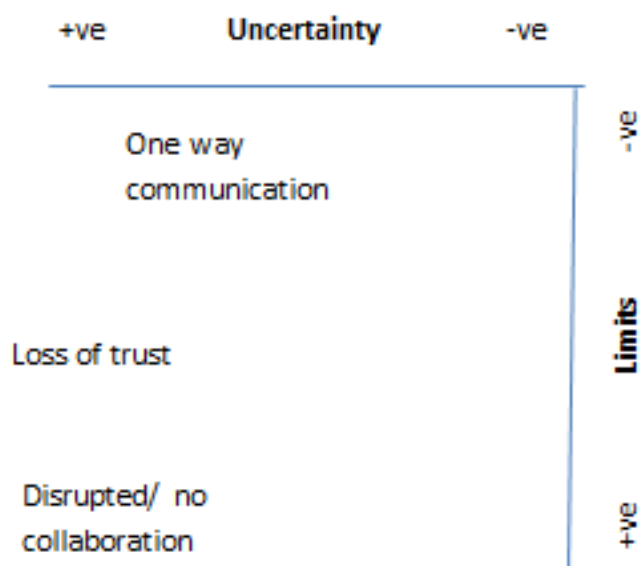
Professionals navigate restrictive limitations in different ways, and while some individuals communicate their limits and continue to interact in a limited, but functional way, others reach limits and cease communication, thereby increasing uncertainty and disrupting collaboration:

'D: … we get a lot of feedback for any of the patients on the (names a team) ward a lot of communication whereas other conditions we don't get anything back so it's often they (consultants) only ever ring you back when it's really

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gone wrong not when they've (patients) just started to go off, (Participant E: transcript lines 172-180).

This produces uncertainty through lack of response or feedback to other collaborators, which impacts on trust and, in turn, is perceived as a disrupting limiting factor by other collaborators who may then also limit or cease to interact:

> '*D: I think we're still not quite on the same page. We had a communication with them two weeks ago, we tried to set up a meeting to get it off the ground now that C is in post, really erm, but then there's erm again difficulty in er… we have to work out how we work with them (referring to a number of doctors).* (Participant D: transcript lines 95-98).

The resulting lack of trust can create uncertainty and this influences the amount of risk which is acceptable within the OPAT situation. Lack of communication and lack of trust produces limits in the levels of risk acceptable for professionals in situations of uncertainty and the Pharmacist identifies the impact on limiting treatment options:

> '*E:.. I wouldn't be doing it in a you know a (identifies a particular team) patient and using an unusual antibiotic that hadn't ever been used in OPAT before because I'd be a bit conscious I wouldn't get the relevant feedback, but in the (name)… team I'd be more confident so I'd be more happy.. happier… if that's the right word, to sort of take that risk and see whether it did work* (Participant E: transcript lines 162-166).

Prolonged limited collaboration or lack of response and feedback can result in disillusion; a limiting factor which is disruptive and potentially destructive to collaboration:

> '*C: ..we are not getting any clinical responsibility erm really no information from them. We know that sometimes they see the occasional outpatient appointment but we don't get any information directly from them, so it's always a chasing up. Always having to leave messages with their secretaries always finding out they're on holiday, always.* (Participant C: transcript lines 81-85).

Lack of appreciation for limitations which have been communicated to others also produces disillusion and feelings of being taken for granted and the Respiratory Nurse describes these feelings:

> '*F: I really got quite disillusioned by the whole OPAT thing and I was sitting in a meeting and we were discussing hours and who needed what hours … We've done it several times you know this was the latest round of it and I said I think I need …nursing time and I was told I didn't. I was told categorically I did not need nursing time and I said well how do you work that out?* (Participant F: transcript lines 296-301).

Becoming disillusioned has the potential to disrupt interaction; communication, trust and co-ordination can all be withdrawn. Participant F identifies a shift in power and

her capability to withdraw interaction. Her personal and professional limit is reached and collaboration is directed between limits and uncertainty:

> *'F:… time for my team was absolutely discarded and we put by far the most patients through this programme … so there the power switches and you know the base of it switches and I was ready to walk at that point... I really was absolutely furious that there was no recognition of what we'd done'.* (Participant F: transcript lines between, 309-319).

Navigation of Patient A's situation quickly moves from the goal of OPAT to uncertainty and the limitations of professionals. The main navigational points in the situation remain the limitations of professionals, hospitals and the increasing uncertainty resulting from reduced communication:

> *'A: …so when I had me first MRI done at (name) they sent it erm, faxed it or whatever you do, across to, for them to have a look at it erm but I think it was the doctor … that decided erm the antibiotic to give me, mebbe this is where it's all going wrong because I'm between two hospitals and each doctors waiting…. The carry on I had before when I went to see him erm a week ago, a week on Wednesday erm I can understand now a little bit what was going on because he is sitting there waiting for (name) to tell him what to do.'* (Patient A: transcript 2, lines 54-62).

As collaboration becomes disrupted Patient A recounts numerous examples of leaving messages, traveling to hospitals, wasted journeys, waiting to see professionals and being re-directed to other professionals. She finds herself communicating without response from others and attempting to coordinate, despite her limiting pain and immobility, in order to maintain collaboration. She tries to navigate back to her goal of being treated safely and cared for at home, but as communication reduces uncertainty increases:

> *'A: it'll be three weeks on Wednesday since I was there and I haven't heard anything and would I have? I mean I still haven't heard anything even though I've phoned, but if I do hear anything is it because I've phoned? or would I have heard anyway or would I just be sitting here for another month just waiting to see, you know, what's going on…I just feel a little bit as though, how can I put it erm. I'm the person that's poorly, but I feel as though I'm the person that's like having to, jig things up….'* (Patient A: transcript 2, lines 72-77)

Disrupted interaction continues and this compounds the uncertainty in the situation. Patient A begins to lose sight of her goal as uncertainty becomes the navigational point. She experiences loss of confidence, anxiety, and fear and blames herself for the uncertainty in her situation and for not asking questions*:*

A: No and I just feel as though I'm like in the middle….I've always slept well on a night and for the last fortnight I've been very restless I've been having nightmares erm I'm not sleeping I'm not having very good nights at all and I think it's a little bit anxiety. My husband thinks it is, he thinks there a little bit like panic attacks and I

wake up erm and I don't know whether it's because I just haven't got a goal any more, there's not a date, or a you know what I mean...... and when he started saying about abscesses and that, my fault I never said to him well what would that do? would that still be the antibiotics? or would it be a needle to er to burst them or what? My fault, I mean I didn't ask.' (Patient A: transcript 2, lines between, 140-162).

Silences in the Data

The above findings present the action, interaction and influence found in the collaborative situation. The consequences of non-collaboration are found within data from the perceptions of participants and are represented in the areas of limited or disrupted collaboration. There are no findings which represent the perspective of an individual who is involved in the OPAT situation, but who is perceived by others as being uncollaborative. Doctors were identified by participants as collaborating less, or not at all, and through theoretical sampling three were invited to participate, but did not respond to invitations to participate in the study.

The role of doctors in the steps of the patient journey and in decision making is present in data from participants, but their role in collaboration is less evident within data and some are identified as being difficult to collaborate with. Participants, including Participant C who is a doctor specialising in microbiology, report doctors involved in developing, limiting and disrupting collaboration. Although this representation of doctors being less involved in collaboration fits with other studies (Sollami, Caricati and Sarli, 2015; Reeves and Lewin, 2004), findings from this study would also suggest that collaboration or non-collaboration is more complex and part of interactively navigating healthcare situations. Further research is required to investigate collaboration from the perspective of doctors.

The findings represent the collaboration found in the OPAT care of three patients and, although this is a limited number of patients, the ratio of patients and professionals is representative of care in community settings. These patients also represent a limited age range and a limited range of conditions and this may impact on the transferability of these findings. Further research would be required to test the substantive theory and conceptual model in other healthcare settings with patients of different ages and with differing conditions.

Conclusion

This chapter has presented findings by utilising a conceptual model developed during analysis to introduce the substantive theory of Interactive Navigation. The theory presents collaboration as a social devise used to navigate healthcare situations and the Collaboration Compass conceptual model is used to explain the navigational relationships found between structural influences and the agency of interaction. Structural elements are identified as Situational Co-ordinates and agency as Interactive Mechanisms.

The chapter provides an overview of the complex relationships found between Situational Co-ordinates and Interactive Mechanisms and identifies four areas (Developing, Maintaining, Limiting and Disrupting) where collaboration is directed during navigation of the situation. Quotations from participants, positional maps and examples from OPAT care situations are presented using the framework of the conceptual model to illustrate theory. Finally silences and gaps in the data are considered as findings and potential limitations.

Chapter Seven – Discussion

Introduction

This chapter discusses Interactive Navigation and explores the social processes which underpin the theory in relation to current knowledge and understanding of collaboration. The context for discussion is the environment of healthcare and the structural influences which present many conflicting demands and constraints. The chapter also considers agency in the extent to which patients and professionals are able to direct collaboration in healthcare situations and the impact this has on collaborative relationships in practice.

The Challenge of Representing Complex Collaboration

The bespoke combination of methods used in the development of Interactive Navigation theory enabled me to follow collaboration in detail, and to examine it from different perspectives. Analytical methods captured the multifaceted aspects of the situation and enabled a detailed and multidimensional theory of collaboration to emerge from data. My decision to follow the influence of Charmaz (2014), and particularly Clarke's approach in analysis (2005), revealed the intricate social situation of collaboration and produced a theory which is representative of this intricacy. Had my decision been to follow Corbin and Strauss (2008, p. 104) in choosing one core category, from all of the categories developed; then the theory would be less complex and more easily discussed, but it would not represent the interrelated influences and interaction found in the practice situation.

There is a challenge in presenting and discussing Interactive Navigation. It is a theory which represents the complexity of collaboration in practice, and there are a number of components within the theory which must be addressed in order to discuss the relevance of the findings. Each individual Situational Co-ordinate, Interactive Mechanism and area of collaboration could, individually, be the focus of a detailed discussion chapter. The challenge is in representing the dynamic and interrelated aspects of the theory adequately, while still providing sufficiently detailed discussion. In order to meet the challenge this chapter will provide sufficient discussion of each aspect of the theory, in order to examine its contribution to knowledge and to move understanding of collaboration forward. This is done with the intention of communicating the relevance of the theory as a whole, rather than

discussing selected parts in greater detail, and with recognition that there are future opportunities to further examine each aspect of the theory.

The Complexity of Collaboration in Practice Situations

Interactive Navigation presents an intricate and dynamic social process, which involves continual interpretation of the situation, and the use of social interaction to direct collaboration in healthcare. It is a theory which represents the complexity of collaborative practice in health care environments. Communicating the complexity of healthcare practice is acknowledged as a difficult task (Lowe, 2014), but it has been equated to the number of elements and connections involved (Fuchs, 2003), the degree of interrelatedness (Kannampallil et al., 2011) and the number of conflicting constraints (Kauffman, 1993). Complexity in OPAT is represented by the number of people interacting, the possibilities of action and the number of competing demands and influences which are part of the situation.

Collaboration is also noted to be a complex concept (Hornby and Atkins, 2000; Williams, 2012; Petri, 2010; D'Amour et al., 2008; Johannessen and Steihaug, 2014; West et al., 2015) and many studies of collaboration deal with complexity by focusing on either the macro, larger scale organisational and structural influences on collaboration or the micro, smaller scale interaction and agency of collaborators. The challenges of researching such complex issues result in a lack of research which accounts for the operationalisation of collaboration at the interface of structure and agency, where the complexity of collaboration has been regarded as being hidden (Novikov et al., 2016; National Audit Office, 2017). This study takes a situational view of collaboration in the delivery of healthcare and includes both structure and agency to uncover the interactions and relationships at the meso level of practice. This thesis provides a detailed study of a healthcare situation which captures the complexity of collaboration, and develops understanding of how collaborative relationships are managed, by examining both agency and structure within the situation. The study also provides a new perspective which includes patients as part of collaboration, rather than viewing them as a focus around which professionals collaborate. This adds an additional dimension to existing presentations of interprofessional collaboration and ensures that patient perspectives are included and represented in knowledge of collaboration.

The dynamic nature of collaboration can be seen in some research where issues of collaboration are presented as cross-cutting; offering both opportunities and

limitations (Willumsen, 2008). Stewart et al. (2003) see the barriers and drivers of joint working in health and social care existing at two levels: one relates to organisational culture and the other to the practice and attitudes of staff. This points to multiple and conflicting influences, but does not address how these influences are manifested or how they impact on collaboration in on-going practice. My position as an insider researcher, and then as an informed outsider researcher, provided the opportunity to examine collaboration with an insiders understanding of complexity of practice, yet also with a researchers analytical scrutiny of meaning and drive to be parsimonious. Findings from this study support the dual aspect of multiple influences, and also reveal the complex relationships between structure and agency in the praxis of collaboration. Interactive Navigation recognises and accounts for the intricacy and complexity of collaborative practice and presents a new model, in the Collaboration Compass, to assist a fresh understanding of how these influences promote and constrain action to shape and direct ongoing collaborative relationships in practice.

The Role of Structure and Agency in Collaboration

The structure-agency debate within academic literature (Hay, 1995; Giddens, 1984; Stones, 2005) provides the context for this theory, but the concepts of structure and agency are equally important in the daily practice of healthcare. According to McAnulla (2002, p. 291) these concepts deal with the basic question of what capability individuals have to shape their lives when confronted by constraints. In healthcare this relates to the extent to which patients and professionals have the ability to direct the practice of care within the limitations of health and the NHS. The findings of this study show the extent to which patients and professionals are able to direct collaboration within complex healthcare situation, and the consequences this has for care.

Practice is filled with uncertainty and conflicts of value (McIntosh, 1999), and this has been found to be the case particularly in community settings (McIntosh, 1999; Carr et al., 2001). During analysis of data, maps of great detail and complexity emerged, which include a myriad of dynamic influences, and contain representation of multiple actions, non-actions and change, across a range of healthcare settings and organisations. These maps are representative of the complexity in practice which must be encountered and negotiated in the daily delivery of healthcare. People who collaborate in services which cross the boundaries between

organisations, and between care settings, can be said to face the greatest intricacy and complication. The complex landscape of practice, which is presented in the findings, combines the notion of structure and agency. It represents the synthesis (Bilton et al., 1996) of individual action and the social and organisational influences found in OPAT, which also feature in many other current healthcare environments. Interactive Navigation proposes that there is a dual relationship between the need to navigate complex structural influences in the situation, and the agency of collaborating with others.

Structures are elusive concepts (Scott and Marshall, 2014) which relate to the recurring social, cultural and organisational rules and frameworks, which govern the action of individuals (Elder-Vass, 2010). The findings of this study clarify structural influences and group them together to present five Situational Co-ordinates which orientate the situation, but which also constrain or promote individuals to act and interact in particular ways. Four of these Situational Co-ordinates have opposing relationships as participants often express the need to balance the competing demands of goals and limitations with the influences of certainty and uncertainty in the situation. The need to navigate these tensions in practice shapes interaction with others.

Interactive Mechanisms identify the action of collaboration which is shaped by interpretation of the situation and by interaction with others (Blumer, 1986; Carter and Fuller, 2015). This interaction and interpretation has the ability to reproduce existing social rules or to bring about change. The synthesis of agency and structure in collaboration arises in the action of individuals, who both produce and reproduce social, organisational and cultural rules in the course of daily life and in relationships with others.

 Agency involves the capacity individuals have to influence or change events depending on the action they take (Giddens 1984; Bilton et al. 1996). The theory of Interactive Navigation hinges on the interpretation and influence of structural influences and the ability of individuals to interact and navigate between competing demands. The orientating, but competing influence of structures, in the form of Situational Co-ordinates, and the agency of human Interactive Mechanisms combine in the practice of collaboration. The Collaboration Compass model adds detail to the portrayal of collaboration by illustrating and explaining both action and influence involved in collaborative relationships, which can be lost in the complexity of practice. The notion of navigation with a compass offers a new tool to view the

complexity of practice and the interaction which underpin relationships and drive the direction of collaborative practice.

Navigating the Situation

Navigation is the process of determining a position in relation to specified points in the landscape and then directing a route to a new position. The theory of Interactive Navigation proposes that structural Situational Co-ordinates of Goals, Limits, Certainty, Uncertainty and Power orientate the landscape of the practice situation. Situational Co-ordinates present influences in the situation which must be navigated, and the competing tensions between these co-ordinates in practice influence how interaction is used to direct collaboration to develop, maintain, limit or disrupt. This section discusses findings which relate to the navigation of Goals, Limits, Certainty and Uncertainty and the tensions which exist between them. Findings which relate to the more dynamic influences of power are discussed later in the chapter.

The importance of sharing a common goal in collaborative practice is acknowledged (D'amour et al., 2008; Sicotte et al., 2002) and has been associated with professional roles (Bronstein, 2003), linking the purpose of a professional team with the patient outcome (Mickan and Rogers, 2005). Achieving concordance in a central aim or shared purpose has been found to be a difficult process, but this has only been identified in the case of professionals (Williams and Sullivan, 2010; Cameron et al., 2014) who aim for improved patient care (Baggs and Schmitt, 1997; Keshet, Ben- Arye and Shiff, 2013; Pape et al., 2013; Kraft, Blomberg and Hedman, 2014; Gache et al., 2014; Johannessen and Steihaug, 2014). The findings from this study differ and show achieving a common goal between patients and professionals to be unproblematic. The aim of improved care was found with both patients and professionals agreeing that treatment delivered at home would be an improvement for a variety of reasons. The difficulty revealed by the findings of this study is not in the agreement of a goal, but in managing the factors which may limit the achievement of the goal.

Collaboration has been found to be constrained by personal, professional and organisational pressures (Snooks et al., 2006; Martin-Misener, 2012) and this study supports the findings of others (Dilworth and Higgins, 2013; Aein et al., 2011; Van Eyk and Baum, 2002; Bronstein, 2003; Kraft, Blomberg and Hedmann, 2014; Bainbridge et al., 2015; Olsen et al., 2013), in identifying professional time, workload

and lack of resources as hindering communication and interaction. The role of professionals in collaboration is well studied and there is understanding that role related constraints arise from professional norms and ideologies (Trickett and Espino, 2004) and strong professional allegiance has been shown to hamper teamwork (Bronstein, 2003) unless a balance between profession and team is achieved (Kvarnstrom, 2008; Kraft, Blomberg and Hedman, 2014). The findings from this study add to this current understanding by demonstrating how professionals navigate the tension between these competing demands and attempt to find a balanced position between professional role, organisational restrictions and the requirements and expectations of a collectively agreed goal.

Other studies recognise the challenges collaboration poses for professionals who have to create a balance between patient, system and process (Kraft, Blomberg and Hedman, 2014) and the barriers to communication which can arise from a lack of control over workload (Olsen et al., 2013). Crawford and Lepine (2013) point out that there is a maximum point at which the benefits of communication are overwhelmed by the costs in terms of being able to manage workload. This study adds detail about the manifestation and implication of this balancing act performed by professionals. In terms of navigation the time and attention required to communicate effectively, in support of the shared goal, must be balanced with the limitations of workload, lack of time and sparse resources. This navigation between competing co-ordinates reduces communication and shifts the direction of collaboration from the collectively agreed goal to the limitations encompassed in professional roles.

Although the professional role is well researched there is little understood about patients in collaboration. This study offers insight into the experience of patients in collaboration and findings show patients are subject to the tensions between the goal of being treated at home and the limitations of their health condition while the healthcare system also adds constraints by requiring them to leave home, wait in clinics and sometimes make wasted journeys. The reduced communication, produced as professionals navigate the situation, can feature as a limiting factor for patients, and as expressed by Patient A, can lead to loss of trust which is an important mediating factor in on-going relationships (Luhmann, 1979). The findings suggest that for patients the goal of treatment at home is the most influential co-ordinate in the situation, and they continually navigate towards it, despite the influence of their own limits and the limitations and uncertainty presented by the healthcare system and professionals.

Uncertainty and certainty are expressed within the findings and are associated with the complexity of the clinical treatment and in relation to the wider care environment. Uncertainty has been identified as an accepted part of collaboration (Van Eyk and Baum, 2002) but also as an unarticulated aspect of practice (Carr et al., 2001). There are views that suggest there is a reluctance to admit uncertainty in clinical practice (Kamhi, 2011), but findings from the OPAT situation suggest that uncertainty is readily discussed, and it is certainty which is articulated less.

My role as a practitioner and insider to the research situation may have had an impact on participants' willingness to discuss uncertainty. As a practitioner in the clinical setting I am used to asking about uncertainty related to health and clinical issues. In the educational setting I use communication skills on a daily basis to explore and invite discussion of uncertainty, and in interviews I intuitively created conversational opportunities, which invited articulation of uncertainty. My role as a practitioner familiar with OPAT also created a particular relationship with participants where uncertainty could be discussed. For practitioners I was already a trusted colleague and source of advice in relation to issues of uncertainty about medicines in practice. This existing relationship facilitated a conversation including doubts, lack of confidence and lack of knowledge, which may have been more guarded in the presence of an unknown researcher, or one without knowledge of the clinical situation.

Uncertainty in any situation arises from a lack of information or knowledge and this study reveals the way interaction is used to navigate between certainty and uncertainty in practice. Exchange of information is known to develop collaborative relationships (Rice et al., 2010), but the role of communication and trust in mediating these relationships (Luhmann, 1979), and in reducing uncertainty (D'Amour et al., 2008) has lacked operational detail. Findings from this study show that two-way communication is crucial to developing trust in collaboration and in turn in navigating towards certainty. The findings show participants becoming more certain as they communicate together and develop trust.

My familiarity with the research situation may also have had an impact on the data collected in relation to certainty. Participants may have assumed our shared level of knowledge about the research situation, and so may have been less inclined to identify shared aspects of certainty in the situation, preferring to focus on uncertainty. However, certainty also appears to be a concept which is missing from the collaboration literature. It may be that the complexity in practice situations is

decreasing certainty, or at least the articulation of it. Perhaps the recent development of the OPAT service, within on-going organisational change, had an impact on the amount of certainty expressed by participants who were experiencing the uncertainty involved in change. Despite the circumstances which lead to experience and expression of certainty and uncertainty, navigation of the tensions between them were evident in the findings and have implications for collaborative clinical practice.

The balance between certainty and uncertainty has a direct impact on clinical decisions, and participant E (Pharmacist) discusses a willingness to accept the uncertainty and risk in trying new treatments, but only where it is balanced with the certainty created by good communication in a particular team, and trust in a particular individual. Trust has been identified in relation to perceptions of competence (Hupcey and Miller, 2006; Rowe and Calnan, 2006) and communication has been shown to be an important part in building and predicting successful teams (Pentland, 2012). Interactive Navigation adds to this, by revealing how professionals make deliberate use, and non-use, of communication to manage future workload in the face of uncertainty about funding and the future of the service. Participant D discusses communicating with individuals, while limiting communication with the whole organisation, to maintain some certainty and control the uncertainty of a growing future workload. This navigation of opposing co-ordinates with use of Interactive Mechanisms allows professionals to find a collaborative position within the situation.

The navigation of certainty and uncertainty for patients is associated with the known and the unknown in relation to their health and treatment at home. Certainty in expectations of professional roles is balanced with uncertainty when professionals reduce communication, or stop communicating all together. Lack of communication has been found to cause frustration (Karlsson, 2013) and confusion (Brown, Broderick and Lee, 2007) for professionals and the findings of this study support this, but in terms of the patient experience. The findings from this study identify lack of communication from professionals to be a significant cause of uncertainty for patients who all experience, to some extent, confusion and frustration as a result.

The theory of Interactive Navigation encompasses a number of findings which offer new insight in terms of structural influences and the way these influences are navigated in collaborative situations. Patients and professionals are able to agree a goal, but the challenges in collaboration are in navigating factors which may limit

success in achieving the goal. The way professionals navigate and use communication to balance the demands of competing situational influences can have a limiting impact on the way patients navigate the situation and on the development of wider collaborative relationships. The landscape of practice requires navigation of competing Situational Co-ordinates which have both promoting and constraining influences on collaboration. This conceptualisation of navigating a landscape adds the idea of topography of collaboration to the existing concept of taxonomy (Meads et al., 2008). It is the continual navigation of the situation which creates the dynamic nature of collaboration and influences how interaction is used to direct collaboration.

Finding Collaborative Direction

In practice the tensions between goals and limits and between certainty and uncertainty occur simultaneously and underpin the complexity of the practice situation. Navigation of competing and cross cutting co-ordinates locates the direction of collaboration. In geographical navigation aligning a compass with the landscape and the co-ordinates on a map identifies a position and sets a direction. In collaborative practice using interaction in the navigation of competing co-ordinates directs and positions collaboration in one of four areas. The Collaboration Compass model identifies four distinct areas of collaboration and these share some similarities with the types of collaboration identified in the literature, but also present some new perspectives.

<u>Developing Collaboration</u>

The interaction found in the Developing Collaboration area portrays the type of collaboration which is most often represented in the literature. It fits with most models of collaboration which describe shared goals, shared power, negotiation, trust and communication (Gray, 1989; Gitlin, Lyons and Kolodner, 1994; Gardner and Cary, 1999; Hayward, DeMarco and Lynch, 2000; Orchard, Curran and Kabene, 2005; Bronstein, 2003; D'Amour et al., 2008; Fewster-Thuente and Velsor-Friedrich, 2008). Collaboration in development is frequently described in studies which examine new services (La Cour and Curchin, 2013; Gabitova and Burke, 2014; Hunt, Spence, McBride, 2016) and new ways of working (Pape et al., 2013; Gache et al., 2014; Chiocchio, Lebel and Dube, 2016). The characteristics found in this area of collaboration are also represented in healthcare definitions of collaborative practice (Baggs and Schmitt, 1988; Wood and Gray, 1991; Hennenman, Lee and Cohen, 1995; Petri, 2010), many theoretical models (Bridges

et al., 2011), and in much of the current healthcare policy advocating collaboration (NHS England, 2014; Department of Health, 2012; Department of Health, 2013).

Findings in OPAT identify all four Interactive Mechanisms being used in the area of developing collaboration, and the mechanism of rehearsal is unique to this area. Rehearsal is a mechanism developed as an in vivo code and it captures the collective learning, modification and improvement found in this area of collaboration. The identification of Rehearsal supports the findings from other research which relate to building routines and embedding action into the structure of practice (Ford, 2008). Routines emerge and change in the building of (Feldman, 2000) new structures of practice (Bronstein, 2003; Pentland and Feldmen (2005) and Rehearsal represents a state of action, modification and change found in the development of new activities aimed at achieving the goal.

New models of outpatient care have been shown to require new ways of communicating (Somerset et al., 1999) and the findings in OPAT echo other studies in identifying this taking place in the development of collaboration (Johnson and Goyder, 2005; Trickett and Espino, 2004) as knowledge is exchanged and trustworthiness is established through reciprocity and growing confidence in others. This interaction can be likened to the rehearsal of drama where the actions of actors are guided by the lines and directions of the play. In the rehearsal of healthcare practice, individuals have a range of potential actions which are guided by the social, professional, cultural and organisational rules about what actions should go together. Although many aspects of rehearsal have been identified in other studies, this study proposes it as a concept in developing collaboration which clarifies Rehearsal as interaction which is influenced by situational structures, but which also has the potential to either re-enact or change existing structures.

Many of the accepted characteristics of collaboration represented in the literature (Trickett and Espino, 2004; Cunningham et al., 2012; Martin Misener et al., 2012) are located in the area of developing collaboration. Role blurring, compromise and adaptability in changing environments (Bronstein, 2003), problem setting, direction setting, structuring (Gray, 1989) and a range of collaborative antecedents (Bell and Duffy, 2009) all fit in this area of collaboration. The findings in this study reinforce a developmental aspect of collaboration, but also identify a more complex picture of collaboration in practice, beyond the work of achieving a shared goal and into areas where collaboration exists, but where it does not fit with existing definitions.

<u>Maintaining Collaboration</u>

Collaboration which is maintained features strong communication and trust. Care pathways across hospital and community have been highlighted as being in particular need of good communication (Van Houdt et al., 2013) and maintaining trust involves retaining goodwill and competence (Tricket and Espino). It has been found that keeping people engaged in collaboration requires consistent interaction (Crawford and Lepine, 2013), but sustaining the levels and intensity of the interaction found in developing collaboration would be difficult to maintain given the many limiting factors which exist. In this study the mechanism of coordination emerges as the interaction which maintains collaboration within the situation.

Coordination has been defined as 'interlocking care planning activities created with and for team members' which involves efficient and effective use of resources (Orchard et al., 2012, p. 60). During the development of collaboration coordination is shared, predominantly by professionals, who all take on aspects of planning and organising care. This finding supports other studies which identify appropriate coordination and communication as basic requirements for the development of professional collaborative practice (Cabello, 2002), but this study also identifies a particular role of coordination during maintained collaboration. One professional takes on the role of coordinator rather than sharing this aspect of interaction. One central co-ordinator has been found to be effective at channelling communication and having good overall understanding of the situation (Hollenbeck et al., 2011) and this is seen as the best way to communicate plans across care settings (Brummel-Smith et al., 2016), but this role can increase workload for the coordinator, and runs the risk of reduced levels of communication as workload becomes too great (Cross and Parker, 2004).

The findings of this study show that Participant F (Respiratory Nurse Specialist) works extra hours and takes on more work to coordinate the care of Patient B, and other professionals report the effectiveness of communication and the trust they have in Participant F. Key professionals have been found to often take on the role of communicating and connecting professional interaction (Cunningham et al., 2012) and the findings show Participant F does this through adopting the coordination role to ensure care for her patient. D'Amour et al (2008) propose that professionals hold on to responsibility for their patients and delay collaborating in situations of excess uncertainty. Findings in this study present a different mechanism; rather than delaying collaboration, Participant F coordinates it to create certainty and to direct collaboration to maintain the goal for her patient. The coordination role maintains

trust, reduces uncertainty and increases certainty in the situation. Rather than delaying collaboration, this mechanism allows the professional to navigate certainty and uncertainty, and to establish a position where certainty can be created and collaboration can be maintained.

Specific coordination roles have been found to improve communication and coordination between primary and secondary care (Hunt, Spence and McBride, 2016) and the term boundary spanner has been used to identify people who facilitate the flow of information across such boundaries (Williams, 2012; 2013). There are roles in which boundary spanners work across organisational and service boundaries as part of their dedicated role, but boundary spanning has also been found as part of other roles, where the focus is to improve communication and co-ordination in day to day practice (Hunt, Spence, and McBride 2016). Some areas of healthcare have worked to increase boundary spanning activities and palliative and end of life care is well-defined by the coordination and communication that professionals see as an essential aspect of this care (Bainbridge et al., 2015).

Participant B's palliative, end of life situation has significant importance for Participant F (Respiratory Nurse Specialist) and she highlights it as a driver for her role as coordinator. Mead (1934) reasoned that people cooperate and communicate by interpretation of symbols. The gesture and response involved in coordination is continually interpreted and informed by the context of the situation. In order to know how to communicate, or how to act in a particular situation, people draw on their understanding of structures and respond to each other informed by social and cultural influences (Mowles, Gaag and Fox, 2010). Professionals view palliative care and end of life situations as having symbolic importance, and this informs the way they interact. For Participant F this seems to have influenced her role as co-ordinator despite the limitations of workload and resource. These findings suggest that there are some situations, and potentially some health conditions, which have symbolic importance for professionals. This can influence professionals to take on the role of coordinator and direct collaboration to be maintained despite limitations.

Limiting Collaboration
Barriers to collaboration have been identified in the literature in two themes; those which arise from the boundaries of professional roles and those which result from organisational pressures. Successful collaboration is regarded as needing to shift from traditional hierarchical structures to more horizontal relationships (San Martin Rodriguez, 2005) and new services report the need to share and adapt professional

roles to develop new ways of working (Johnson and Goyder, 2005).The boundaries between different professions have been found to be significant in a number of studies; with the notion of 'boundary work' (Abbott 1988; Strauss 1978) featuring in the establishment of clear roles, status and professional identity within collaboration (Duner, 2013). Findings in this study support the idea that some negotiation of roles takes place within developing collaboration and responsibilities become more certain in maintained collaboration.

Rigid professional boundaries have been identified as the downfall of collaborative enterprise (Aein et al., 2011; Bronstein, 2003), but this study identifies that although professional role and identity influence collaboration it is navigation of uncertainty and the constraints of organisational systems, increasing workloads and lack of time which cause professionals to restrict their interaction. What has in the past been interpreted as a rigid boundary (Aein et al., 2011; Bronstein, 2003) or the fortification of a professional line (Shaw et al., 2007; Martin et al., 2009), may in fact be the point where professionals navigate the situation, and collaboration is directed to being limited. What Duner (2013) sees as the striking of a balance between the interdependence of collaborating professionals and the desire for professional autonomy may be, what Participant F (Respiratory Nurse Specialist) calls 'self-preservation'. At this point navigation orientates the situation away from goals and certainty. Interaction is restricted to establish a manageable collaborative position, which is influenced more by the constraints of limitations and uncertainty.

Communication and trust are seen as essential in interactive team working (Van Eyk, 2002), but the literature also suggests that there are still many improvements to be made in practice (Doyle, 2008). Rice et al. (2010) suggest their findings point to interprofessional communication being a low priority, but the theory of Interactive Navigation presents a different view. Communication and trust can be seen to be shaped by the structural co-ordinates within the situation. Rather than being a priority, or not a priority, communication is a mechanism which is used, or restricted, to bring about a collaborative position which fits with professional interpretation and navigation of the situation.

The experience of reciprocal communication has been shown to have a direct impact on trust (McCabe and Sambook, 2014) and so reducing communication also reduces trust between collaborators. In this study limited collaboration features reduced communication and trust as the constraints of limitations are navigated. Limited collaboration in Patient X's care accommodates the limitations of both the

professionals and Patient X within the certainty of a short course of treatment. This area of limited collaboration is functional. It enables sufficient communication and trust to deliver cooperative treatment across primary and secondary care. There is no coordination of care, and communication is face to face between the patient and each professional. In other research face to face communication has been found to be the most valuable type of communication (Pentland, 2012) and this may ensure the effectiveness of limited collaboration. In this type of collaboration the patient relays information between professionals. This involves the patient in limited collaboration and adds both the responsibility of passing on information and the restriction of keeping multiple appointments with professionals. This form of collaboration is effective in the certainty of a short term plan of care, but as demonstrated in the case of Patient A, it is not sustainable in the face of greater uncertainty.

<u>Disrupting Collaboration</u>
Lack of communication has been found to be the most significant issue in complicating collaboration (Junger, et al., 2007) and findings in this study show the disruptive impact of a lack of communication when it is associated with limitations and uncertainty in the situation. In disrupted collaboration communication and trust are lost, creating more uncertainty in the situation. This leads to feelings of frustration and disillusion amongst collaborators. In the area of disrupted collaboration there is a decrease and loss of two way communication. Feedback between collaborators has been shown, in other research, to strengthen collaboration (Bronstein, 2003), and this study identifies the implication when there is no communicative feedback. Professionals are found to lose trust and become disillusioned while the patient experiences loss of confidence, anxiety, guilt and fear as uncertainty and limitations result in a loss of communication which disrupts collaboration in care.

Interactive Navigation presents a differentiated picture of collaboration with four distinct areas where collaboration is developed, maintained, limited or disrupted. The theory adds detail to existing knowledge about how interaction is used in practice relationships to direct collaboration. The specific uses of rehearsal and coordination add understanding of how collaborative relationships are developed and maintained. The use, or restriction, of communication and trust also add to understanding of their importance in maintaining or disrupting relationships, with direct impact on the way collaboration is experienced. The mechanism of using interaction shape relationships and direct collaboration into four areas with different

collaborative outcomes poses the possibility that collaboration can be actively directed in practice. The main determinant in the ability to direct collaboration is presented in the fluid influence of the Situational Co-ordinate Power.

Interactive Navigation and Power

Power can be viewed in different ways (Karreman and Alvesson, 2009; Pieterse, Caniels and Homan, 2012) and it features as an explicit aspect of some theories of collaboration (Benson, 1975; Huxham and Vagen, 2005, Orchard, Curran and Kabene, 2005) where it's structural influence is acknowledged. However power is also implicit in many presentations of interaction in collaboration (D'Amour et al., 2005) and is acknowledged as a key factor in explaining collaboration (Williams, 2012). Power can be seen as dominance or authority, used to make people act in a particular way, or it can be viewed as the influence of a culture or society on behaviours, values and identities (Grant and Marshak, 2011). Power has also been perceived as dynamic (Nealon, 2007) and productive, integral to all social interaction (Homan et al., 2010) and the product of social processes (Dennis and Martin, 2005). Scott (2007) discusses power, at its most basic, as the production of causal effects. This is agreed by most theorists, but beyond this, views diverge and the concept of power is contested (Wrong, 2009) across disciplines, and by multiple authors. In order to consider the complex influence of power found in OPAT collaboration it is necessary to discuss it in relation to wider theories of power.

Interpretations of power have been viewed as main stream and second stream (Van Rensburg, 2016). Mainstream theories relate to the instrumental power of individuals, collective social power and sovereign power, which invoke certain rights for individuals or groups. The formation of main stream theories was promoted by a view that the state and bureaucracies are the main sources of power (Webber, 1947). Lukes (2005) presents a theory of power which is founded in mainstream concepts, but which extends the idea of power to include social structure and ability to exercise power in action. The power found in the situation of OPAT, and represented in the Collaboration Compass model, corresponds with this concept of power in its involvement of both structure and action, but this does not fully explain the subtle and dynamic aspects of power revealed by the findings. Second stream theories offer a more nuanced understanding of power in collaboration.

Second stream theories focus more on processes, strategies and mechanisms of power, which are used to make something easy or difficult or by enlarging or limiting

(Deleuze, 1988). This fits well with the promoting and constraining influences found in Situation Co-ordinates, and also creates the idea of power as subtle influence. The power found in collaboration is not the obvious force of domination by individuals, but a more dynamic force, integral to the synthesis of agency and structure. Foucault (1982) identifies the dynamic nature of power existing in networks throughout society and part of the construction of knowledge. This view of power also acknowledges the role of structure in establishing social norms and in shaping identities, such as the identities associated with a professional role, or that of a patient. Foucault also discusses cycles of construction and reconstruction where action and agency, shaped by social norms and structure, feedback to reproduce or reshape structure (Foucault, 1982). This resonates with structuration theory (Giddens, 1984) and the synthesis of agency and structure found in collaboration, where the action of individuals is shaped by interaction and interpretation of the situation and both produces, and reproduces, social, organisational and cultural rules in the course of daily life.

These second stream theories of power, and particularly Foucault, move the debate from questions about how power is exerted over others, to a question about what enables power in different situations. This leads to questions of how autonomy, empowerment and capability are achieved, what influences them. A number of theorists draw together mainstream and second stream concepts of power (Scott, 2001; Reed, 2013) to address this issue and see differing understandings of power as complimentary rather than opposing (Scott, 2001).

Giddens' structuration theory (1982) draws on a number of these theories and presents power as 'reproduced relations of autonomy and dependence in social interaction' (1982, p. 39). There are two aspects of this: one that power is voluntary human action and the other that it is a structural quality of society (Giddens, 1984). Reed (2013) presents a typology which adds detail to these aspects of power and presents relational, discursive and performative dimensions of power, which determine the ability of some actors to control others and direct social life to their own advantage. This typology assists in the examination of power and the extent to which patients and professionals are able to direct the action of collaboration in OPAT. The power found in OPAT is multifaceted, dynamic and integral to the healthcare situation. In agency it frames the ability of Individuals to act, or not act, and in structure it constrains and produces action.

Relational power is the extent to which the structure of relations between actors determines the ability of some to control the actions of others, and to possess the ability to direct social life to their own advantage. This power is dynamic, derived from position in a social structure and involves social mechanisms. In OPAT the relationships between different professionals and between patients and professionals are influenced by the social structure which is part of the healthcare environment. The concept of power has been associated with professionals and the hierarchy found in systems of healthcare (Fredericks et al., 2012). Hierarchical relationships persist in healthcare systems and particularly in hospital environments (Lancaster et al., 2015) despite recurrent organisational changes and restructure. The power relationships between professionals arise from the socialisation which takes place in professions, and from organisational structures which maintain hierarchical decision making processes (Orchard, Curran and Kabene, 2005). The power of professionals, and of particular professional groups, is socially constructed and embedded in the way healthcare systems operate and in the way they are perceived (Fredericks et al., 2012) by other professionals, and by the people who use healthcare systems.

Power which relates to the role of the patient as a user of healthcare services is also socially constructed and subject to socialisation, but this aspect of power is less evident in research and literature relating to collaboration. These socially constructed notions of power can present challenges for collaboration and have been identified as a barrier to collaborative practice (Fredericks et al., 2012). The findings from this study demonstrate the detail of relational power in operation, as professionals navigate the situation and have the ability to use or reduce communication, which controls the action of others and directs collaboration to their own situational advantage.

Collaboration has been said to operate on a model of shared, but not equal, power (Gray, 2000) and differing roles can lead to disproportionate power which can have negative effects (Arnaert and Wainwright, 2009) on the way people work together. Collaboration in this study is typical of the relationships in many healthcare settings and is primarily centred on an agreed goal which meets the care needs of a patient, but which must also meet the needs of the healthcare organisation within the structural constraints of healthcare settings. This places patients, and the professionals who provide their care, at the centre of potentially competing demands and conflicting power. Organisational needs and constraints are matched with professional roles and patient needs. Although collaboration and patient

centred care have been called upon (Lawson, 2004; Seale, 2016), and promoted (NHS England, 2014), as a way to deconstruct traditional power relationships the findings from this study show mainly traditional relationships. The relational power exerted by professionals in OPAT produces and continues to reproduce, long established expectations of patient and professional roles and this means that collaboration is directed according navigation of the situation by professionals, and to the advantage of professionals rather than patients.

The roles of professionals and patients in collaboration involve both agency and structure. Role identity and social positioning are significant drivers of the power relationships in Interactive Navigation. Identity theory (Stets and Burke, 2000) sets out the way individuals categorise themselves as an occupant of a particular role. The patients and professionals in OPAT clearly identify their respective roles as distinct and they reproduce the expectations of their role related behaviour. In the care of Patient A and Patient X, professional and patient roles are distinctive and differentiated. Only Patient B has a more integrated view of his role as a patient in the way he works with professionals. End of life and the concept of dying at home have been found to be symbolic for professionals (Collier, Phillips and Ledema, 2015) and while symbols can signify constituent power (Dickinson and Sullivan, 2014) they can also elicit specific feelings and actions (Snow, 2001) which change interaction. This fits well with discursive power (Reed, 2013), which is the degree to which thought; symbolisation and linguistic conventions contribute to views of the world, and determine the ability of some actors to control others. Discursive power is diffuse and often hidden and, while not appearing as an exercise of power, findings in this study point to the symbolism of end of life care as significantly influential; producing differences in the expectations of the patient role, and changes in professional behaviour which impact on collaboration.

The expectations of patient and professional roles in collaboration are imbued with different perceptions of power. These expectations are have been reproduced (Dennis and Martin, 2005) in the discourse and agency of healthcare and wider society over time, and produce differences in the capability individuals have for taking action or for interacting within the healthcare situation. Overall professionals in OPAT, as in other situations (Olsen et al., 2013), have little power to control hierarchical organisational constraints such as workload, lack of resources and lack of time. However, professionals do have power to act and interact with patients and with other professionals in a way which modifies the situation in order to maintain their role (Stets and Burke, 2000. Findings show that language and symbolism play

an important part in this. Paternalistic language, which controls the behaviour of Patient A reinforces her patient role and limits her capability for action and, despite the goal of home treatment, all the patients are subject to attendance in hospital clinics which maintains the symbolic control and discursive power of hospital based professionals.

Professionals autonomously navigate the situation and use interaction to direct collaboration according to their own interpretation of the influencing co-ordinates in the situation. In navigating their own position professionals assert power and direct collaboration by using Interactive Mechanisms in such a way as to develop, maintain, limit or disrupt collaboration with others. Patients also navigate the situation, but have less power and less expectation of power. Patients have limited capability to use interaction within the constraints of uncertainty about treatment, the limitations of their health, the limiting healthcare systems, and reducing communication from professionals. Patients navigate the situation, but have less autonomy and less capability to direct collaboration.

Performance power (Reed, 2013) refers to the way interaction in a situation exerts power over actors and their future action. In collaboration this is linked with relational power, but has an impact on the capability individuals have to take action. Autonomy is often associated with the ability to take action, make decisions and to choose. This research shows professionals feel they allow choice and they assume the goal of treatment at home automatically empowers patients, but involvement in decision making was not evident in the findings and there was little choice for patients within collaboration. Autonomy is affected not only in the choices offered within healthcare, but also in expectations of identity and the capability for interaction (Entwistle et al., 2010). Social influences have the ability to promote or constrain an individual's capability to act as they want to. Interactive Navigation proposes that within collaboration patient power is restricted by the limitations of health, influence of healthcare structures, the agency of professionals and reproduced expectations of the patient role. The goal of treatment at home is important in patient navigation of the situation, but unless their situation is symbolic to professionals in some way, patients have limited power to direct collaboration towards maintaining the goal.

There is the potential for performance power to transform expectations and future actions. Collaboration has the potential to support and change expectations of patient and professional roles. The rehearsal of developing collaboration presents

the ideal opportunity to embed new expectations of roles and responsibility. Developing interprofessional collaboration has been discussed as being emancipatory for those health care professionals traditionally outranked in the hierarchy of healthcare (Haddara and Lingard, 2013). This same empowering potential exists for patients within collaboration, but findings show this does not happen in practice.

Patients do not direct collaboration, but do experience the consequences of professional direction. D'Amour, Sicotte and Levy (1999) found that service users can be external to collaboration yet still be delegated the responsibility of organising professionals and findings in OPAT support this. In the areas of limited and disrupted collaboration patients are expected to relay information between professionals or are left acting as a 'go-between' attempting to restart communication and organise appointments. This role and responsibility may be accepted as part of navigating between the goal of treatment at home and the limitations of the situation, but it can also be at odds with the perception of being a patient with detrimental effects contributing to anxiety, fear and panic.

A number of authors discuss the need for a major shift of power in collaboration between professionals and consumers of services (Curtis and Harrison, 2001; Lawson, 2004) and there is a need to move away from professional paternalism to empower patients to share responsibility and have an active role in directing their care. Developing collaboration presents the mechanism for emancipation with shared leadership, but without investing in the production and rehearsal of new patient and professional roles collaboration will continue to be orientated by structures and agency which reproduce existing power relationships, discourse and performance.

The very possibility of collaboration has been questioned within the disempowering influences in health care (Curtis and Harrison, 2001) and this study has revealed the complexity and conflicting influences in care situations which contribute to different types of collaboration in practice. Interactive Navigation proposes the possibility that collaboration can be directed into areas with very different consequences for patient and professional experience. If the power dynamic is to change, then patients and professionals need to use the Collaboration Compass model to navigate the situation together and map out a shared and maintained journey in collaboration.

The Collaboration Compass and Interactive Navigation in Theoretical Context

Investigating the interaction involved in collaboration and the situation in which it takes place has revealed action, relationships and influencing factors. This situational view of action and agency is similar to situated activity which Goffman (1963) saw as being intrinsically dependent on the conditions of the situation (Burns, 1992). Exploration of structural influences on the action and interaction of individuals makes visible the influence of, what Giddens (1984) refers to as, the virtual nature of structures, as well as the impact of more tangible structural influences, on the ability of individuals to use interaction in the management of collaborative relationships. This representation of structures, which influence the performance of interaction are also found in the theory of Goffman (1963) in situational properties, Garfinkel (1967) in accountability and Boudieu (1977) in habitus and social fields, who all discuss the manifestation of interaction and the precondition of having knowledge and understanding of social norms, practices and responses as well as understanding of the situation in which the interaction takes place.

The substantive theory of Interactive Navigation and the Collaboration Compass model present a relationship between the influence of structure and the capability involved in the agency of individuals to use interactive mechanisms in the management of collaborative relationships. This is presented as a dual relationship with structure informing and shaping agency, and agency equally informing the production and reproduction of structure. This type of relationship fits with Giddens (1984) inseparable duality of agency and structure, but as a concept this is challenging to explain and more difficult to demonstrate in a model intended to inform understanding. The visual representation of structure and agency within the Collaboration Compass fits more with the views of Archer (1995) who perceives of structure and agency as more distinct, with action taking place as agency within the limits allowed by structural conditions. Archer's theoretical perspective adds to that of Giddens (1984), and has been used to facilitate a clearer model of collaboration in the visual separation of structural influences and the mechanisms of action, while acknowledging the dual aspect, and consequences, of the relationship between them in terms of collaboration.

The Collaboration Compass presents structure, action and outcomes in terms of collaborative activity. Although these aspects of collaboration can be found separately in other theoretical models, the Collaboration Compass is unique in its navigational presentation of the non-linear, dynamic and complex relationships

found between structural factors, interaction and the outcome of collaboration experienced in the situation. Interactive Navigation acknowledges external structures, such as organisational conditions, as well as internal interpretation of social structures, in influencing the capability individuals have to take action, and to interact, within the situation. This interrelationship directs the outcomes for collaboration and these are presented in developing, maintaining, limiting and disrupting collaboration. Stone's (2005) quadripartite model of structuration theory supports an ontological view of structure, agency and outcomes in terms of events. Through the reflexive methodology used to guide analysis of the situation and hermeneutics, this research has focused at the substantive level, in what Giddens (1984) calls ontology-in-situ, to develop theory. The substantive theory of Interactive Navigation explains the nature of interaction in collaborative relationships within the structural aspects of the situation, and the Collaboration Compass model explains how these factors are interconnected in the practice of collaboration.

By depicting the interrelationships between structure, agency and collaborative outcomes Interactive Navigation and the Collaboration Compass bridge aspects found in other theories of collaboration. Some theories address interorganisational or interagency, macro level collaboration and structural approaches (Oliver and Ebers, 1998; Vogel et al., 2007). Many theories found in healthcare focus on the structural aspects of organisational and interdisciplinary collaboration (West et al., 1998; Sicotte, D'Amour and Moreault, 2002) or the managerial and teamwork aspects of interagency working (West et al, 2015; Crawford and Lepine, 2013). Other theories focus on the interpersonal aspects of collaborative working in the social exchange which takes place (Gitlin, Lyons and Koloder, 1994) or the collaborative relationships which exist between professionals (Fewster-Thuente, 2015). Interactive Navigation explains the interrelationship between these structural and interpersonal factors, and how they combine to produce the outcomes of collaboration found in practice situations.

Many theories of collaboration developed in health and social care (Orchard, Curran and Kabene, 2005; D'Amour et al., 2008; Fewster-Thuente, 2015; Vogel et al., 2007; Sorenson et al, 2013), present levels, phases or stages of collaboration and the Collaboration Compass is similar in the presentation of four areas of collaborative practice. This fits with theories of collaboration from other areas of the public sector, which have been found to present a continuum of strong to weak collaborative relationships (Williams, 2012). Although the areas of the Collaboration Compass do identify varying strengths of collaborative relationships they may occur

in any order and may change frequently. This differs from the linear, successive relationship presented in many models. A number of concepts are common in the theoretical presentation of collaboration, and Interactive Navigation shares in identification of shared goals (Bronstein, 2003, D'Amour et al., 2008; Van Eyk, 2002; Fewster-Thuente, 20015), trust in relationships (Orchard, Curran and Kabene, 2005; D'Amour et al., 2008; Fewster-Thuente, 2015), communication (Sorensen et al., 2013; West, 2015; Crawford and Lepine, 2013), limitations to collaborative activity (Van Eyk, 2002; Vogal et al., 2007; Crawford and Lepine, 2013) and the influence of structure (Orchard, Curran and Kabene, 2005; D'Amour et al., 2008; Bronstein, 2003). However a number of concepts found in the Collaboration Compass are less common in other theories, for example the absence, lack or end of collaborative relationships is identified in two other models (D'Amour et al. 2008 and Sorensen et al., 2013) and power relationships are explicit in one (Orchard, Curran and Kabene, 2005). The concepts of co-ordination and rehearsal in interaction, and the structural influences of certainty and uncertainty in collaboration, differ from other theories and only appear within the Collaboration Compass.

Trust, power, accountability and leadership are factors found in Collaboration theory which have been identified as being of equal importance in shaping the practice of collaboration (Williams, 2012). All of these factors emerged during analysis of OPAT collaboration, but although they shape collaborative relationships, they differ in the ways they are manifested and operate in this situation. Trust and power emerge as theoretical sub categories, which form the structural Situational Co-ordinates and the agency of Interactive Mechanisms, and have been discussed in earlier sections as part of the Interactive Navigation theory and the Collaboration Compass model. The concept of accountability was coded and categorised in relation to roles and responsibilities. This contributed to understanding of the structural influence of power on professional and patient navigation of the situation in relation to role. Leadership as a term was articulated by one participant and this was discussed in terms of the lack of leadership in the situation, which gave rise to uncertainty. Uncertainty was the significant and recurrent concept within the data, which then emerged as a situational theoretical sub category. However aspects of more shared and reciprocal leadership can be found as an influence of relational power in the Rehearsal mechanism of interaction, and specifically in the area of Developing collaboration.

The interaction, which was categorised as Rehearsing, has a number of similarities to collaborative leadership theories which describe collective and intergroup

approaches to leadership (Allen et al., 1998; Denis et al., 2001; 1994; Pittinsky, 2009). New ways of working are rehearsed and influenced by the goals and elements of uncertainty in the situation and this is comparable with collaborative, reciprocal processes of collective leadership (Denis et al., 2001; Allen et al., 1998). Many of the concepts in the Collaboration Compass are identified in the principles of this collective leadership style, with communication, trust, power and the reciprocity found in rehearsing, all shared aspects. Although there were aspects of collective leadership found within the rehearsal of developing collaboration, no single leader emerged. While one identified leader exists in project development of collaborative initiatives, such as OPAT, it can be lacking in the NHS hierarchical management structure (Ansell and Gash, 2007). The leadership found fits with the use of multiple leaders in successful collaboration rather than reliance on one leader (Lasker and Weiss, 2003), but as Huxham and Vaugen (2000) point out collaborative leadership is likely to be time, resource and skill intensive and the availability of such leaders is dependent on local circumstances. In the on-going practice of OPAT the limitation of these resources means that collective leadership is limited to developing OPAT, and the lack of ongoing leadership is the cause of uncertainty. This orientates the situation to disrupted collaboration with outcomes which have also been identified by Ansell and Gash (2007) as a lack of leadership has a constraining effect on collaboration.

The levels of patient involvement found collaboration within OPAT resonates with theory which presents the use of collaboration in varying degrees of involvement (Grantham et al., 2006). The involvement of patients in collaboration did vary from simply receiving information to actively sharing in the development of collaborative activity, but full control (Hickey & Kipping, 1998) was not found. The Collaboration Compass presents a more fluid and dynamic picture of patient involvement, which changes in response to influences and symbolism involved in the care situation. Opportunities exist for greater patient involvement, particularly in the area of development and in the use of coordination. As others have theorised, collaboration is an important part of developing and delivering empowering outcomes for patients (Leske et al., 2012; Williams et al., 2012) and this study identifies how existing structures and the use of interaction impact on patient involvement in collaboration and the consequences this has for care. Patient involvement in collaboration is more than a simple two-way communication process as suggested by Grande et al. (2014) and more complex than a relationship of decision making (Angel & Frederiksen, 2015). It is a complex relationship between patients, professionals and

the situation of care. It depends on the conflicting demands of the situation, interpretation of social and organisational structures and the relational, discursive and performative dimensions of power in those relationships. Differences in navigation of the same situation may explain the differing perceptions and expectations of collaboration which have been found between patients and healthcare staff in other studies (Carlsson et al., 2006). The Collaboration Compass offers a way of understanding the processes and consequences of collaboration and the impact this has on patient involvement and experience of care.

The complexity of collaboration and the difficulty in capturing the finer points of such a complex concept is acknowledged by D'Amour et al (2008). This complexity means that theories often only present the most significant findings. This produces theory which shares some similarity in main findings, but may be missing representation of the situational differences which shape collaboration. This study of collaboration has presented a model of collaboration which acknowledges the complexity of collaboration. It has revealed the mechanisms of collaboration and identified new aspects of collaborative interaction as well as those concepts which correspond with other theories. The role of structural concepts have also been identified as orientating factors, which may differ in every situation, but which play an important part in the overall navigation of collaborative situations and the interactive direction of collaborative outcomes.

Conclusion
Chapter seven has discussed the theory of Interactive Navigation in the light of its contribution to current knowledge and understanding about collaboration. The discussion has considered the relationship between structure and agency within the complexity of the practice situation and examined the processes of navigation which present the topography of collaboration. Influence and interpretation of the orientating situational structure and the use of social interaction have been examined using the analogy of a compass which directs collaboration into four areas.

Developing Collaboration has been identified as being the usually accepted concept of desirable collaboration which is presented in current literature and policy, but this is only one of the four areas of collaboration found in this study. This chapter has discussed the influences and interaction which relate to each area of collaboration. Developing Collaboration is discussed as an area of intense activity where new

ways of working are established through the Interactive Mechanism of Rehearsing. The mechanism of Coordinating has been highlighted for its effect in the area of Maintaining Collaboration. Limiting Collaboration has been explored as an area of minimal collaboration, yet still functional in the face of limiting influences. Disrupting Collaboration has been explored in terms of the limiting influences and uncertainty which orientate this area and which influence cessation of communication and trust. The effect of this disruption has been discussed in terms of the negative impact on patient and professional experience of collaboration.

The roles of professionals and patients have been examined. Issues of relational, discursive and performance power have been discussed in terms of the resulting capability individuals have to direct collaboration. It has been argued that professionals navigate the situation and have capability to direct collaboration into a position which is professionally manageable and which reproduces existing power relationships. Patients navigate the situation but have less capability to use interaction and, unless they have a condition which is of symbolic significance to professionals, they have limited capability to direct collaboration. Interactive Navigation proposes that collaboration can be directed into areas with very different consequences for patients and staff and this discussion has proposed that the power inherent in patient and professional roles is significant in directing the type of collaboration manifested and experienced in practice. Finally the substantive theory presented in this study has been examined in the context of wider healthcare and collaboration theory.

Chapter Eight – Summary and Implications for Future Collaborative Practice

Introduction

This study began with unanswered questions in practice, and in seeking to answer these questions it has informed understanding of collaboration and responded to calls for research which examines the relationship between structural influences and individuals (Williams and Sullivan, 2009; San Martin Rodriguez et al., 2005). The emergent theory of Interactive Navigation explains the complexity involved in collaboration and the Collaboration Compass provides a model to support planning, facilitation and analysis of collaboration in practice. This chapter will summarise key findings, explore the implications of Interactive Navigation and suggest the potential uses of the Collaboration Compass model to inform future policy, practice and research. A reflection on the personal and professional implications of the research journey will follow and the chapter conclusion will close the thesis.

Summary of Key Findings

The findings and discussion present collaboration as a social device used in navigating complex healthcare situations and managing collaborative relationships. Structural co-ordinates of certainty, uncertainty, limits and goals orientate the situation and Interactive Mechanisms are used to direct collaboration according to navigation of co-ordinates. The process of navigating between competing Situational Co-ordinates is influenced by power, and this navigation directs collaboration into four different areas which produce developing, maintaining, limiting or disrupting collaboration.

Developing collaboration involves intense interaction as goals are developed and new ways of working are rehearsed to establish routines. Maintaining collaboration requires co-ordination to create certainty and maintain communication and trust over longer periods. Limiting factors within the situation reduce communication and trust and this produces minimal, but functional collaboration which is effective only in the short term. The area of disrupting collaboration is orientated by limits and uncertainty in the situation. Loss of two way communication and trust in this area results in disillusion for professionals and anxiety, fear and guilt for patients.

Power creates differences in the capability individuals have for interacting within the healthcare situation. The implicit power in patient and professional roles is socially constructed and is embedded in the way healthcare systems operate and in the way roles are perceived. While both patients and professionals navigate the situation, it is professionals who have more power and the capability to use Interactive Mechanisms to direct collaboration into a position which is professionally manageable, and which also reproduces and reinforces existing power relationships. Patients have less capability to use interaction and, unless they have a condition which is of symbolic significance to professionals, they have limited capability to direct collaboration.

The theory of Interactive Navigation proposes that interaction is used to direct collaboration into four areas, with very different consequences for patient and staff experiences. The theory is conceptualised as a navigational device in the form of the Collaboration Compass. This model presents a tool to inform understanding of collaboration and to support navigation of health care situations, with appropriate direction of collaboration in practice to achieve the desired outcome.

The findings from this study have implications for current health and social care policy which places collaboration at the centre of services, but which is also vague about what collaboration means, who it involves and how it takes place. Collaborative working has a clear place in reorganised services and new models of care (NHS England, 2014; 2016) and collaborative enterprise is promoted as core in the provision of an efficient, effective and sustainable NHS (NHS England and NHS Improvement, 2016). Such promotion of collaborative working between agencies has been called 'a convenient fiction' in the face of relationships that are more fragile than policy makers assume (West et al., 2015, p 114).These policies discuss collaboration in general terms and assume a simplicity in collaborating to deliver integrated working (NHS England, 2016; 2015). Collaboration is referred to in singular and undifferentiated terms; assuming that in practice it is one entity, and one act, which can be implemented in any situation. The findings from this study present collaboration as a far more complex concept, which requires more recognition from policy makers, managers, practitioners and patients if collaborative health and social care developments are to succeed.

The theory of Interactive Navigation displays the competing influences and complex interaction involved in collaborating to deliver care. Collaboration is revealed as an intricate social device bound within the situation, and which has the potential to exist

in different forms. Although complex relationships have been recognised, the mechanisms involved in implementing collaborative integrated care have previously been regarded as hidden (Novikov et al., 2016; National Audit Office, 2017). Interactive Navigation and the Collaboration Compass model (figure 34) offer policy makers, managers and those who are required to collaborate, a way to view the Interactive Mechanisms of collaboration and to identify the Situational Coordinates which influence the direction and outcomes of collaboration in any situation.

Figure 34: The Collaboration Compass Model
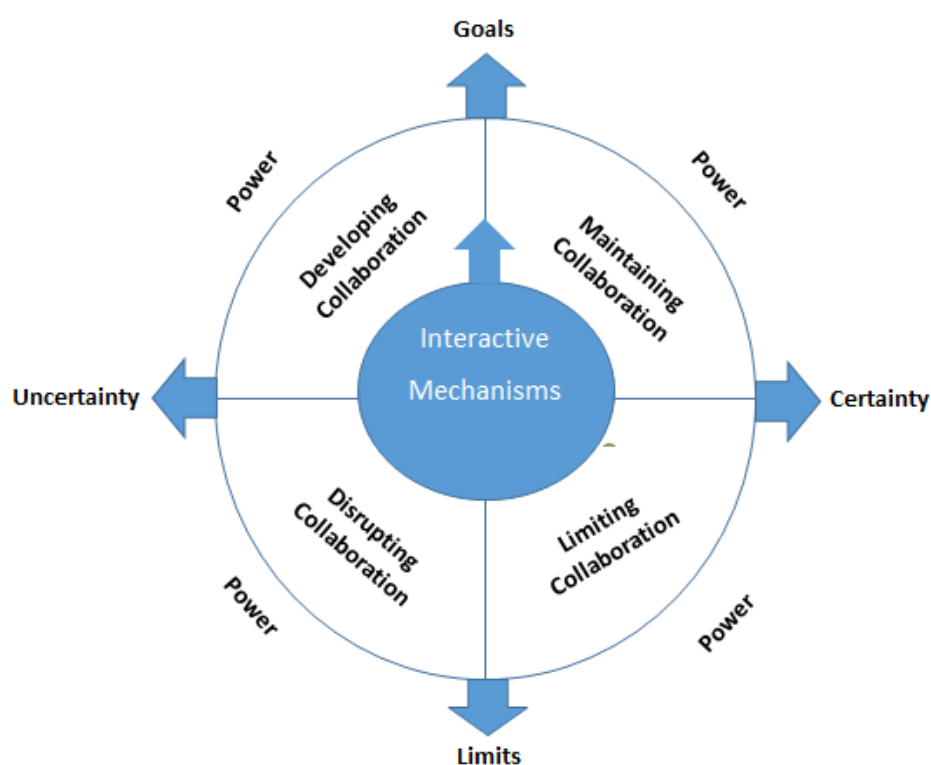
Implications for National and Local Policy

Interactive Navigation theory and the identification of four different areas of collaboration suggest that some areas of national and local policy may potentially hinder rather than promote collaboration by failing to account for complexity and by making collaboration in itself the goal in delivering integrated working. As care environments become more complex, with reorganisation and fragmentation of care, there is an increased need for collaboration. This also creates more complex situations to navigate with added competing demands, new limitations and increased uncertainty. Although uncertainty promotes the development of collaboration, and can begin the changes promoted by policy, it can also lead to

disruption and failure. To counteract the disruptive influences of uncertainty, policy makers must be clear about the goals which are to be achieved and avoid making collaboration a goal in itself.

Current NHS policy places collaboration at the centre of care delivery and service redesign, but remains vague about what constitutes collaboration in practice (NHS England, 2014; 2015; 2017). Such policy makes collaboration a goal through the assumption that joint working will provide a solution to other NHS problems. Broad brush depictions of collaboration present a picture of intense communication and partnership working in a range of newly established services. Expectations of collaboration are created through detailed specifications for integrated services (NHS England, 2017a) and many examples of different collaborative endeavours (NHS England, 2015b, 2017d). The substantive theory of Interactive Navigation identifies the intensive interaction portrayed in such depictions as the rehearsal of developing collaboration, but also identifies such intense use of interactive resources as not sustainable in longer term ongoing practice. Policy needs to address the ongoing requirement of collaborative practice, and the theory of Interactive Navigation can support consideration of differing types of collaboration appropriate to different situations.

Collaboration is a device with which to achieve goals, rather than being a goal in itself. As with any other device, collaboration requires understanding, planning and resourcing for maximum effectiveness. Developing collaboration requires intense interaction with resources needed to rehearse, build trust and embed new methods of communication and coordination. Policy makers must consider the investment needed in this area of collaboration if new ways of working are going to be fixed in practice. However, not all situations require such levels of investment or such intense collaboration. The activity and resourcing needed to develop collaboration is difficult to maintain, and an expectation of this level of collaboration in all situations is problematic for the sustainability of new NHS services.

Effective and sustainable collaboration requires policy which recognises and prepares for the differing collaborative requirements of healthcare situations, and the different directions collaboration can take in practice. Interactive Navigation identifies a need for certainty if collaboration is to move beyond development, and this is something which can be lacking during the change involved in policy driven reorganisation of services. For collaboration to thrive and maintain in the long term,

policy must promote aspects of certainty along with the inevitable creation of uncertainty during the change involved in reorganising the NHS.

The theory of Interactive Navigation identifies the role coordination plays in creating certainty and maintaining collaboration, but also recognises the impact of competing demands on those who take on a coordination role. This understanding is vital for policy makers who advocate collaboration in integrated services. In some areas an identified coordinator role has been shown to be effective (Gabitova and Burke, 2014; Palos and Hare, 2011; Gilburt, 2016), but expectations that professionals can take on this additional role can have detrimental effects (Williams and Sullivan, 2010; Long et al., 2013; McEvoy et al., 2011) and eventually lead to limiting or disrupted collaboration. The role coordination plays in maintaining collaboration should be promoted more explicitly in policy, and considered in the resourcing of situations where collaboration needs to be maintained over longer periods of time.

Coordination is recognised as part of person centred care (Brummel-Smith et al., 2016; NHS England, 2013) and there are a range of possibilities in practice to fulfil the need for co-ordination (Gilburt, 2016), but the importance for policy is the recognition that coordination has a significant role in maintaining collaboration and patient participation, as well as in organising the delivery of person centred care. Interactive Navigation identifies where there are clear goals coordination can be used to maintain the certainty, communication and trust vital for positive experiences. It is this navigation of care situations and the direction of collaboration, which is required to maintain person centred care over longer periods of time. The implication for policy is that coordination has an important role in directing and sustaining collaboration which is a vital part of delivering and person centred care in complex care situations. The theory of Integrative Navigation and use of the Collaboration Compass model can be used in the development of policy which directs sustainable collaboration as part of long term patient centred care.

There are situations which require the intense activity of developing collaboration, others which require coordination to maintain collaboration in the long term, but there are also many instances in healthcare where collaboration is required over shorter periods of time. Interactive Navigation identifies some situations which have strong elements of certainty, but also feature limiting factors which restrict the interaction available. In this type of care situation, where the life and work commitments of patients, and the workload, funding and resources in healthcare can all inhibit interaction. In such situations limited collaboration provides a

functional way to support the delivery of short term care. The theory of Interactive Navigation presents this as a functional and effective form of collaboration in some healthcare situations. Although it does not meet current policy expectations of collaboration, limited collaboration is taking place in practice, and provides a pragmatic solution to collaborating within the limitations of some healthcare situations. Recognition of this type of collaboration provides policy makers with a range of collaborative possibilities and the option to support limited collaboration in situations of certainty and limitation where coordination is not possible. It may be that this area of collaboration is preferable to the disruption or loss of collaboration altogether.

The identification of four different areas of collaboration as identified in the Collaboration Compass model provides policy makers with a more detailed picture with which to represent collaborative working. Policy which recognises and accepts that differing areas of collaboration are appropriate in differing situations, will offer acceptable alternatives to the current expectations of uniform intense collaboration. This will distinguish expectations of collaborative practice and allow collaborators freedom to identify the most appropriate area of collaboration for each situation.

This has implications for the drive to implement more collaborative leadership approaches within the NHS (NHS Improvement, 2016). Collective leadership (Allen et al., 1998) has been proposed as the optimum style to create caring cultures within the NHS (The Kings Fund, 2014) with simultaneous focus on individual and collective contribution to culture and shared responsibility for leaders and followers. In this approach everyone has the potential to lead, which is in stark contrast to the command and control leadership style which has been a feature of more hierarchical NHS organisations. Interactive Navigation identifies that shared leadership in practice takes place when there are clear goals, but also in response to an element of uncertainty. The mechanisms of rehearsal, trust, communication and shared coordination are all involved in facilitating the development of collaborative relationships and the expectation of a more hierarchical leadership style contributes to uncertainty and the limitation of shared leadership activity. The theory of Interactive Navigation can inform policy and practice which supports practitioners in the rehearsal of new shared leadership approaches and responsibilities, thereby producing new social structures which reproduce collective leadership and alter the limiting balance of power currently found in the hierarchy of the NHS.

Interactive Navigation recognises the potential negative effects of disrupted collaboration, and potentially of disrupted collaborative leadership approaches, found in practice. Identifying limiting factors and the causes of uncertainty, which orientate and direct disrupted collaboration can assist local and national policy makers in producing policy which supports collaborative situations, rather predisposes them to disruption and failure. Developing policy which provides the right balance of Situational Co-ordinates will support the development and maintenance of collaboration, while less well balanced policy orientation can only produce limited or disrupted collaboration, with the associated negative impacts on patient and professional experiences and outcomes.

Interactive Navigation and the Collaboration Compass present a way of conceptualising influences in practice situations, and the methods of interaction between individuals which result in four distinct areas of collaboration. This enables collaboration to be discussed in relation to the situations in which it takes place, but also in terms of the specific interaction which occurs when collaboration is developed, maintained, limited or disrupted. Such differentiation within policy will assist understanding of a complex concept, but also support translation of policy into different areas of practice which require differing direction of collaboration.

Implications for Collaborative Practice

National policy drives the broad shape and direction of healthcare practice, but the translation of policy into operational services happens at organisational and individual level in practice situations. As national policy drives collaboration and places it at the centre of health service transformation (NHS England 2014; 2016; 2017) there is a danger that collaborative working becomes seen as a resource, which can be simply implemented in challenging situations in order to bring about desired improvements. However, collaboration is not a panacea (Williams and Sullivan, 2010) and the theory developed in this study shows it to be a complex and multifaceted social device, integral to the structure of situations and the agency of individual collaborators. Interactive Navigation and the use of the Collaboration Compass have a number of implications if the benefits of collaboration are to be realised in practice.

It is not unusual for collaboration to be developed without organisational support (Kvarnstrom, 2008), but increasingly collaboration is being directed by organisations to establish new models of care (NHS England, 2017a, b, e). Pilot sites for new

policy are often funded to provide positive examples of change (NHS England, 2015c; 2017e), but outside of the vanguards it can be challenging for organisations to find equivalent funding, and collaboration then happens within existing resources. This places an additional requirement into the existing tensions between competing demands, and limitations can add to the uncertainty of the situation. The theory presented in this thesis suggests that such situations are more likely to be disrupted or fail.

Interactive Navigation theory explains why such situations, orientated by limitations and uncertainty, can lead to disrupted collaboration. Simply understanding what leads to disrupted collaboration is not enough if it is to be avoided in practice, and action to redirect collaboration is required. The Collaboration Compass model offers a tool to support the planning of efficient and effective use of existing resources and promotes thought about how interaction can be used to direct collaboration which is appropriate to the situation.

The theory identifies that new models of care and new ways of working require time and opportunities for rehearsal in the development of collaboration. This may be more than the daily time and effort, which has previously been identified as a requirement (Gardner, 2006). Such investment of time can be difficult to achieve, but in terms of establishing new routines and new ways of working, it is worth the effort, if clear goals for the collaboration are agreed. Time spent developing collaboration also opens opportunities to plan how such newly developed collaboration can be maintained, and to include patients in the development of their collaborative care.

Some feel it is unrealistic to expect patients to participate in healthcare on the same footing as professionals (Drinka and Clark, 2000). The findings of this study show that traditional roles and relationships persist, despite professionals assuming that care situations at home are empowering for patients. Interactive Navigation proposes that including patients as collaborators in developing collaboration can have a significant impact on power relationships within the situation. Being part of the rehearsal, with shared co-ordination, communication and trust between patient and professionals, has the potential to nurture the interactive capability of patients. Competencies required for collaborative practice have been identified (Freeth and Reeves, 2004; Hornby and Atkins, 2000), but these are only related to professionals rather than service users, and contain complex skills and specific knowledge of health care systems. The Collaboration Compass model can be used to support

discussions between patients and professionals about the influences and interactions in the care situation. This has the potential to prepare both patients and professionals for future interaction. Increasing the capability of patients to interact with professionals will enable joint direction of collaboration into positions which are right for all in the situation. The theory of Interactive Navigation explains that by developing collaboration in this way, new social structures can be produced in the expectations of patient and professional roles, and collaborative capability can be rehearsed and reproduced through the agency of individuals interacting, with patients actively navigating their care situation and directing collaboration.

It seems from the findings of this study that some situations, such as end of life, are symbolic for professionals, and the maintenance of collaboration is viewed as having particular importance. The challenge for practice is how to achieve this in all appropriate situations, and not only those that have some symbolic importance for professionals. Patients who have the capability to interact effectively with professionals will have more control in navigating their healthcare situation, rather than being directed by professionals. This brings the possibility that patients could take on the role of coordinator to maintain collaboration in their own care, or join in the decision to identify who should coordinate. Although professionals can take on this role they are not always the most efficient or effective at maintaining coordination in the long term (Cross and Parker, 2004). If collaboration disrupts then patients may be left trying to direct collaboration on their own. The Collaboration Compass model may be useful in facilitating explicit conversations about who would be the appropriate coordinator in patient situations with examination of the factors which may limit this role.

A growing number of roles include boundary spanning activities (Williams, 2012), and as health and social care provision becomes more fragmented there will be more boundaries to be spanned. As teams become more complex and dispersed there will be a need to adapt (Crawford and Lepine, 2013). This will involve navigation of more complex practice situations and if collaboration is to be effective there must be effective use of the resources available. Interactive Navigation identifies an area of collaboration which exists in some short term situations and offers a limited form of collaboration. This reduced interaction should be recognised as collaboration, which although not intensely interactive or purposely coordinated, it is functional, makes use of existing structures and is appropriate within the limitations of some situations.

Henneman, Lee and Cohen (1995) conclude that collaboration occurs between individuals, not institutions. This study supports interaction between individuals as the mechanism of collaboration, but the influences of social structures, and the need of individuals to navigate complex situations within healthcare organisations, are equally important in directing collaboration and the consequences of it. There have been calls for greater incentives to drive collaboration (Ingraham and Getha-Taylor, 2008), but it may be that what practice is in need of is better understanding, and a tool to help navigate and direct collaboration.

Education which supports competency in collaboration is often based in Interprofessional learning (IPL) where professionals learn with from and about each other (Centre for Advancement of Interprofessional Learning, 2007) but this approach needs to be practice focussed in order to be relevant in healthcare practice (Derbyshire and Machin, 2011). Interactive Navigation theory and the Collaboration Compass offers a tool to support this type of education with a focus on analysing the practice situation in terms of goals, the limitations of professional roles and identification of potential sources of certainty and uncertainty in practice. The Collaboration Compass can also be used in practice to support students and continuing development of qualified practitioners in developing competency in collaboration with patients. Explicit identification and discussion about goals, limits, certainty, and uncertainty will help to orientate collaborators in the care situation and identify potential areas and desired outcomes for collaboration. Discussion about mechanisms of interaction and about the power individuals have, or want, in the situation can identify the need to actively direct collaboration in order to achieve desired collaborative outcomes.

Interactive Navigation theory provides a way of understanding how the situation of healthcare can influence collaboration and impact on the experiences and outcomes of those who collaborate. The Collaboration Compass offers a tool to be used by patients and professionals to plan, implement and evaluate collaboration in partnership. Truly safe and effective care can only be achieved when patients are present and powerful at all levels (Berwick, 2013) and that should include collaboration to deliver their care.

Implications for Research
Undertaking this study has identified some potential areas for future research; some of which build on the theory of Interactive Navigation in situations of healthcare and

some which draw on the transferability of findings and application of the theory to other areas where collaboration takes place. The theory and model have been developed in the specific healthcare situation of OPAT with a limited group of patients and professionals and this may impact on transferability to wider situations, but there are many similarities between the OPAT setting and other areas which require collaborative practice. There is potential to test the model in other areas of health and social care, and to analyse and evaluate different experiences of collaboration. The transferability of the theory could also be tested in other collaborative settings such as education, public services and management or business environments to investigate navigation in these situations.

The theory identifies four distinct areas of collaboration and these areas need more investigation. Although developing collaboration is well presented in collaboration research, there is a need to explore rehearsal in more detail to understand how this can be used to plan and prepare for on-going collaboration. More detailed study of practice situations, using the Collaboration Compass as a framework, may help to identify the clinical areas where each type of collaboration is most effective.

Understanding which methods of providing coordination are most effective, and what skills and knowledge are required to coordinate, can assist the development of coordination roles and support the preparation of coordinators. Identification of the environments where limited collaboration can be used to deliver safe and effective care may inform the direction of collaboration and the targeting of resources to appropriate areas. It would also be beneficial to explore disrupted collaboration from the perspectives of all involved, to identify if there are specific limitations and aspects of uncertainty which lead to loss of communication and Trust.

Some professional groups have been reported to be less collaborative than others (Rice et al., 2010) and the collaboration compass would provide a tool to investigate how different professional groups navigate situations, and how they use interaction in the different areas of collaboration. Such research could inform uniprofessional education, to support learning of collaborative skills, but also for interprofessional learning, to support navigation of shared situations and understanding of the factors which influence interaction in practice.

The concept of uncertainty was very evident within the study situation, but certainty was discussed far less by participants. This may have been the willingness of participants to discuss this aspect of practice with a familiar researcher or the relatively recent development of OPAT, but it may also be a feature of current

healthcare. Research to investigate causes, perceptions and attitudes to certainty and uncertainty in healthcare may help understanding of the impact of these issues in practice. This may also inform ways to create certainty and so support the maintenance of collaboration.

Traditional patient and professional roles were identified in this study. The Collaboration Compass offers a tool to support patients and professionals to change traditional expectations of role, by navigating situations together and developing the collaborative capability of all those involved in the situation. Participative research could be used to explore the use of the Collaboration Compass in practice and investigate the impact on roles, relationships and experiences within collaboration.

Collaboration is complex and Williams and Sullivan (2010) ask how we can measure it, but it may be too complex to measure in any meaningful way. Interactive Navigation and the Collaboration Compass offer a new way of thinking about collaboration in terms of direction. Rather than measuring it we should think about what orientates it, where it is positioned and what capabilities are required to direct collaboration.

From Reflection to Reflexivity and Back Again

I began this study with questions which emerged from reflection on my experience of collaboration. As a nurse I view reflection as an important part of my professional practice in maintaining critical professional development. Now as a nurse researcher and lecturer I find it equally important to reflect on the experience of learning through critical inquiry (Clarke, 2005), and to assimilate new knowledge and understanding to inform future practice. Reflection has played a significant part in the research study and in the development of this thesis. During the Professional Doctorate journey I have moved from a broad reflective view of collaboration in practice to develop the particular skill of reflexivity (Gardner, 2006). This provided a far more detailed focus on the production of knowledge, and specific scrutiny of my impact as a researcher. Now, at the end of the thesis I return to reflection to revisit my initial questions, and to position both my experience as researcher, and the emergent theory of Interactive Navigation, within the scope of my professional practice.

My change in professional role has had practical implications for the study in terms of access to the research situation and the ethical considerations (discussed in

chapter four) arising from employment outside of the research setting. This change in role also caused me to focus on my perspective as a practitioner and this contributed to the research process through the development of emic and etic points of view on the research situation. As an 'insider researcher' (Costley, Elliot and Gibbs, 2010) I benefited from what Corbin and Strauss (2008) call 'enhanced sensitivity', which equipped me with knowledge of systems and processes within the research organisation, and specifically within OPAT. This brought benefits in terms of accessing participants and collecting data. This inside view also maintained a focus on answering research questions which would inform the operational challenges faced during collaboration in practice. As the study progressed I moved from insider to outsider in terms of employment, and used reflexivity to realise emic and developing etic viewpoints, which added to my perspective as a researcher.

As an insider I shared in the organisational culture and discourse. I was part of shared social worlds, where I interacted with a clear role identity. From this position I designed research which would acknowledge my insider status and investigate the meaning and manifestation of collaboration in practice. Underpinned by social constructionism the aim of the research was to understand how collaboration is constructed within a social situation. Using symbolic interactionism framed the focus on action and interaction of individuals, and the meanings associated with social acts and shared understandings. I designed a study which would investigate both individual perspectives and the collective nature of the shared situation.

Using reflexive grounded theory methods enabled scrutiny and insight into my role as researcher, and also provided mapping tools with which to analyse the complex research situation. It was through the combination of reflexivity and the use of Clarke's analytic mapping techniques (2005) that I realised the influence of situational structure, and the potential for theoretical frameworks to restrict analytical view. This realisation was a point of refocus, both in terms of analysis and in terms of my reflexive transition from emic to etic viewpoints. My view of the practice situation changed from seeing it as simply the background to practice and context for action; to a realisation that the situation is integral to the action and agency of individuals. The emic view, which was formed by being an insider researcher, had the potential to restrict my analytical view in the same way that the theoretical frameworks had potential to impose a restricted, framed view of data. Rigorous reflexive methods of analysis provided refocus on the practice situation, and the significance of situational influence was revealed by taking an etic view of the

situation.

The issue for me as a researcher is not so much being an insider or an outsider to a situation. As social beings we are all inside or outside a variety of social worlds, cultures and organisations. The issue I draw from reflecting on my research is the importance of research design, and methods which enable the researcher to develop awareness of perspective; whether that is personal, professional, organisational, social or cultural. Using both emic and etic viewpoints in analysis developed a rounded understanding of the complexity involved in collaboration. My own emic and etic views were brought into focus by a physical transition of employment, but it was reflexivity and detailed methods of analysis which brought about both emic and etic points of view on the research situation.

A balance of both perspectives combined in the development of theory. Emic and etic perspectives were required in analysis to develop a deep, rich and rounded understanding of collaboration as part of the practice situation. This facilitated development of theory grounded in data, which represents the complexity of collaboration found in the practice situation. Presenting this complex theory drew on 'enhanced sensitivity' (Corbin and Strauss, 2008), and the emic view of a collaborative practitioner, to support the development of a model with utility and application in the operationalisation of collaborative practice.

To continue the cycle of reflection and to complete the research process it is important that new knowledge informs practice. My area of practice now incorporates nursing and education and this places me in a position to disseminate findings to practice and to incorporate them into educational settings. Here too I am aware of emic and etic points of view on the collaboration which is common in, and between, both settings. Presentation of this research to both practitioners and academic staff has provided an opportunity to discuss differing perspectives and influences on collaboration. The Collaboration Compass has provided an effective tool to support discussion and the planning, implementation and evaluation of collaborative activity. Wider dissemination is planned through publication and use of the research findings in education of undergraduate and postgraduate professionals. By incorporating theory of Interactive Navigation into education new perspectives on collaborative situations may develop, and by use of the Collaboration Compass model as an educational tool new expectations of collaboration may develop in practice.

Interactive Navigation explains and defines collaboration as a social device used to navigate complex healthcare situations. Situational Co-ordinates orientate the situation and Interactive Mechanisms are used to direct collaboration according to the influences of the situation and the capability of those involved. The Collaboration Compass does not make collaboration less complex, but it does provide those involved in collaboration with a tool to navigate complexity. Use of the Collaboration Compass offers the opportunity for those in care situations to navigate together, nurture collaborative capability and to direct collaboration which is appropriate and manageable for all in the situation.

Conclusion
The concluding chapter in this thesis has outlined the key findings from the research and considered the implication of these findings for policy, practice, research and for my own professional scope of practice. Collaboration has been established as a key part of the transformation and redesign of the NHS. Yet there is lack of clarity about the operationalisation of collaboration and an assumption that it is an easily implemented resource. This study has revealed the influences and mechanisms of collaborative working as it operates in practice, and found collaboration to be a complex concept which is shaped by structure of the situation and the agency of those involved in collaboration.

This thesis presents collaboration as a social device used to navigate complex healthcare situations. In essence, structural influences orientate the situation and interaction is used to direct collaboration according to navigation of competing influences. Collaboration can be directed into four different areas which produce Developing, Maintaining, Limiting or Disrupting collaboration, which all have different consequences for patients and professional experience. This process of navigation is influenced by power which is embedded in healthcare systems and implicit in perceptions of patient and professional roles. While both patients and professionals navigate the situation, it is professionals who have more power and capability to use interaction to direct collaboration and this reproduces existing power relationships. Patients have less capability to use interaction and, unless they have a condition which is of symbolic significance to professionals, they have limited capability to direct collaboration.

The theory of Interactive Navigation has been developed using a combination of practitioner and researcher insight in grounded theory to conceptualise collaboration as a navigational device in the form of the Collaboration Compass. This model presents a tool to inform understanding of collaboration and to support navigation of health care situations. The current NHS landscape features much uncertainty and restriction of resources, with integration and collaboration promoted as providing the view forward. Use of the Collaboration Compass identifies that restricted resources are likely to bring limited collaboration, and the addition of uncertainty can only orientate situations towards disrupted collaboration. Clear goals are required if collaboration is to be developed, and certainty must be created if it is to be maintained.

The findings of this study suggest that collaboration can be directed by the use of interaction, and the Collaboration Compass offers a tool to support the direction of collaboration in practice. This thesis has argued that including patients as collaborators in developing collaboration can have a significant impact on power relationships and the collaborative capability of patients within the situation. Through rehearsal, shared co-ordination, communication and trust, patients and professionals can avoid disrupted collaboration by planning the coordination of maintained collaboration or the more limited, but functional form of collaboration. By navigating the situation together patients and professionals have the opportunity to develop new expectations of patient and professional roles, and to direct collaboration which is appropriate and manageable for everyone in the situation.

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Appendix A

University Ethics Committee Letter

northumbria
UNIVERSITY NEWCASTLE

Professor Kathleen McCourt CBE FRCN
Executive Dean

This matter is being dealt with by:
Professor Olivier Sparagano
Associate Dean
Faculty of Health and Life Sciences
Northumberland Building
Newcastle upon Tyne
NE1 8ST

12th December 2013

Dear Lindy

Faculty of Health and Life Sciences Research Ethics Review Panel
Title: The Meaning and Manifestation of Collaboration in Domiciliary Outpatient Parenteral Antibiotic Therapy: A Grounded Theory Situational Analysis

Following resubmission of the above proposal, I am pleased to inform you that University approval has been granted on the basis of this resubmitted proposal and subject to compliance with the University policies on ethics and consent and any other policies applicable to your individual research. You should also have recent Disclosure & Barring Service (DBS) and occupational health clearance if your research involves working with children and/or vulnerable adults.

The University's Policies and Procedures are available from the following web link:
http://www.northumbria.ac.uk/researchandconsultancy/sa/ethgov/policies/?view=Standard

You may now also proceed with your application (if applicable) to:
- NHS R&D organisations for approval. Please check with the NHS Trust whether you require a Research Passport, Letter(s) of Access or Honorary contract(s).
- Research Ethics Committee (REC). [They will require a copy of this letter plus the ethics panel comments and your response to those comments]. If your research is subject to external REC approval, a 'favourable opinion' must be obtained prior to commencing your research. You must notify the University of the date of that favourable opinion.

You must not commence your research until you have obtained all necessary external approvals.

Both the University and NRES strongly advise that the supervisor accompany the student when attending an external REC.

All researchers must also notify this office of the following:
- Commencement of the study;
- Actual completion date of the study;
- Any significant changes to the study design;
- Any incidents which have an adverse effect on participants, researchers or study outcomes;
- Any suspension or abandonment of the study;
- All funding, awards and grants pertaining to this study, whether commercial or non-commercial;
- All publications and/or conference presentations of the findings of the study.

We wish you well in your research endeavours.

Yours sincerely

Jim Clark
Chair, Faculty Research Ethics Review Panel

Vice Chancellor and Chief Executive
Professor Andrew Wathey

Northumbria University is the trading name of the University of Northumbria at Newcastle

Appendix B

NHS Ethics Committee Letter

WoSRES
West of Scotland Research Ethics Service

NHS
Greater Glasgow and Clyde

West of Scotland REC 4
Ground Floor, Tennent Building
Western Infirmary
38 Church Street
Glasgow
G11 6NT
www.nhsggc.org.uk

Mrs Lindy Turnbull
Senior Lecturer Adult Nursing
Northumbria University, Faculty of Health and Li
Sciences
Manor House 011, Coach Lane
Benton
Newcastle upon Tyne
NE7 7XA

Date	1 April 2014
Direct line	0141-211-1722
Fax	0141-211-1847
e-mail	Wosrec4@ggc.scot.nhs.uk

Dear Mrs Turnbull

Study title:	The Meaning and Manifestation of Collaboration in Domiciliary Outpatient Parenteral Antibiotic Therapy: A Grounded Theory Situational Analysis.
REC reference:	14/WS/0044
Protocol number:	RE-HLS-12-130629-51ce9d
IRAS project ID:	139911

Thank you for your email of 28 February 2014, responding to the Proportionate Review Sub-Committee's request for changes to the documentation for the above study.

The revised documentation has been reviewed and approved by the sub-committee.

We plan to publish your research summary wording for the above study on the NRES website, together with your contact details, unless you expressly withhold permission to do so. Publication will be no earlier than three months from the date of this favourable opinion letter. Should you wish to provide a substitute contact point, require further information, or wish to withhold permission to publish, please contact the Co-ordinator Ms Evelyn Jackson, wosrec4@ggc.scot.nhs.uk.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised.

Ethical review of research sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" below).

Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

Management permission ("R&D approval") should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements.

Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at http://www.rdforum.nhs.uk.

Where a NHS organisation's role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.

For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.

Sponsors are not required to notify the Committee of approvals from host organisations.

Registration of Clinical Trials

All clinical trials (defined as the first four categories on the IRAS filter page) must be registered on a publically accessible database within 6 weeks of recruitment of the first participant (for medical device studies, within the timeline determined by the current registration and publication trees).

There is no requirement to separately notify the REC but you should do so at the earliest opportunity e.g when submitting an amendment. We will audit the registration details as part of the annual progress reporting process.

To ensure transparency in research, we strongly recommend that all research is registered but for non clinical trials this is not currently mandatory.

If a sponsor wishes to contest the need for registration they should contact Catherine Blewett (catherineblewett@nhs.net), the HRA does not, however, expect exceptions to be made. Guidance on where to register is provided within IRAS.

You should notify the REC in writing once all conditions have been met (except for site approvals from host organisations) and provide copies of any revised documentation with updated version numbers. The REC will acknowledge receipt and provide a final list of the approved documentation for the study, which can be made available to host organisations to facilitate their permission for the study. Failure to provide the final versions to the REC may cause delay in obtaining permissions.

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

Approved documents

The documents reviewed and approved by the Committee are:

Document	Version	Date
Covering Letter	-	06 February 2014
REC application	-	04 February 2014
Protocol	1.1	21 February 2014
Investigator CV	-	06 January 2014
Participant Information Sheet	1.0	07 December 2013
Participant Consent Form	1.0	07 December 2013
Other: Gantt Chart	1.0	01 January 2014
Other: Group interview protocol	1.0	21 February 2014
Other: Interview protocol	1.0	03 July 2013
Other: Susan M Carr's CV	1.0	01 January 2014
Other: Letter from Northumbria University Faculty of Health and Life Sciences	-	12 December 2013
Questionnaire	1.0	03 July 2013
Response to Request for Further Information	-	27 February 2014

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Reporting requirements

The attached document "After ethical review – guidance for researchers" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Notification of serious breaches of the protocol
- Progress and safety reports

- Notifying the end of the study

The NRES website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

<u>Feedback</u>

You are invited to give your view of the service that you have received from the National Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the website.

Further information is available at National Research Ethics Service website > After Review

14/WS/0044	Please quote this number on all correspondence

We are pleased to welcome researchers and R & D staff at our NRES committee members' training days – see details at http://www.hra.nhs.uk/hra-training/

With the Committee's best wishes for the success of this project.

Yours sincerely

Evelyn Jackson

For **Dr Brian Neilly**
Chair

Enclosures: *"After ethical review – guidance for researchers"*

Copy to: Professor Susan Carr
               Mrs Lynne Williams, County Durham & Darlington NHS Foundation Trust

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Appendix C

NHS Trust Research and Development Department Letter

County Durham and Darlington **NHS**
NHS Foundation Trust

Centre for Clinical Research and Innovation
Fifth Floor
Darlington Memorial Hospital
Hollyhurst Road
Darlington
DL3 6HX

Tel: 01325 743366

All studies are subject to the requirements of the DoH's Research Governance Framework 2005 Second Edition and subsequent amendments. If you have not read this document, or are unfamiliar with its contents you are strongly advised to refer to it before commencing with any research or data collection. You may not commence data collection until you have written formal authorisation from the Director of R&D and an appropriate research ethics committee.

08.04.2014

Mrs Lindy Turnbull – Senior Lecturer Adult Nursing
Northumbria University
Faculty of Life & Health Sciences
Manor House 011
Coach Lane
Benton
Newcastle
NE7 7XA

Dear Lindy

Re: R&D Confirmation of Trust Permission

R&D Ref: MED-302-2014
SHORT TITLE: OPAT

I am writing to inform you that I am happy to authorise Trust permission for the above study.

Key Documents Reviewed (please note this is not exhaustive)

Document Type	Version	Dated	Date of Ethics Letter
R&D Form	139911/563068/14/278	10.02.2014	
Site Specific Information Form	139911/560616/6/921/220508/291189	04.02.2014	
Protocol – Research Proposal	1.1	21.02.2014	
Patient Information Sheet	1	07.12.2013	01.04.2014
Staff Participant Information Sheet	1	07.12.2013	
Consent Form	1	07.12.2013	
Letter of invitation	1	07.12.2013	
Interview Protocol	1	03.07.2013	
Northumbria University Approval	-	12.12.2013	
Questionnaire	1	03.07.2013	
Research Governance Report	-	06.03.2014	-

7. Non CTIMP Permission Letter

with you ◆ all the way

Permission granted is on the understanding that the study is conducted in accordance with the Research Governance Framework 2005, ICH GCP 1996, Medicines for Human Use 2004 as amended, Data Protection Act 1998 (including Caldicott Guidelines) and any other NHS Policies and Procedures. Please refer to relevant CDDFT R&D SOPS which can be found on the R&D intranet page or by emailing research@cddft.nhs.uk.

Conditions of Trust Permission are as follows:

- You notify the R&D Manager immediately should any concerns arise about the safety and welfare of a patient.

- You establish and maintain an Investigator Site File for CDDFT. (*as per SOP 3*)

- You complete and return to the R&D Department all requested monitoring forms. (*as per SOPs 11&14*)

- The NHS Retention and Disposal schedule (HSC 1999/053) states that clinical notes of patients entered into clinical trials of medicinal projects should be retained for 15 years after conclusion of treatment. Please find enclosed the procedure for the identification of patients in clinical trials of medicinal products and study labels to identify notes

- You must notify the R&D Department of any amendments to the protocol. Please note that all amendment documentation as approved by ethics must be submitted to the R&D Department for acceptance and continued Trust permission.

- Please ensure that anyone involved in this study are listed on the Site Specific Information Form and/or on the delegation log and attend GCP training every 3 years. Please notify the R&D Department of a change of Principle Investigator and consenting team members.

- Appropriate contracts / letters of access are in place should new members join the team post approval.

- You should notify the R&D Department immediately when the Trial has ended at CDDFT.

- On completion of the study I would be grateful if you could forward a copy of the final report and any publications as a result of the study to the R&D Department at the above address.

Please note that CDDFT is required to monitor and audit research to ensure compliance with the Research Governance Framework and other legal and regulatory requirements.

The R&D team wishes you every success with the completion of your study.

Yours sincerely

Professor Y Yiannakou
Director of R&D

7. Non CTIMP Permission Letter

Appendix D

Letter of Invitation to Participants

northumbria UNIVERSITY   County Durham and Darlington **NHS**
                                          NHS Foundation Trust

Understanding Experiences of OPAT: Managing Intravenous Antibiotic Therapy at Home.

Researcher: Lindy Turnbull.

Dear Sir or Madam,

I am currently conducting a study to understand how people experience a new service which enables intravenous antibiotics to be given at home. The service, called OPAT (Outpatient Parenteral Antibiotic Therapy), began in January 2013 and the research study will help us understand what works well and how we can continue to improve.

I would like to invite you to take part in the study because you have been involved with OPAT and I hope we can learn from your experience. Before you decide if you would like to take part it is important for you to understand why the research is being done and what it will involve. Please take time to carefully read the Participant Information Sheet and Consent Form on the following pages and discuss it with others if you wish. Please ask me if anything is not clear, or if you would like more information.

If you are able to take part please contact me by using the information below or tell one of the health professionals involved in your care and they will contact me on your behalf.

Yours faithfully,

Lindy Turnbull,
Email: lindy.turnbull@northumbria.ac.uk
Work Telephone: 0191 215 6415

Version 1.0 (07 December 2013)

Appendix E

Patient Participant Information Sheet Appendix

Patient Participant Information
Understanding Experiences of OPAT: Managing Intravenous Antibiotic Therapy at Home.

Researcher: Lindy Turnbull.

My name is Lindy Turnbull and I am a nurse and senior lecturer at Northumbria University undertaking a Professional Doctorate course at Northumbria University. I am currently conducting a study to understand how people experience a new service which enables intravenous antibiotics to be given at home. The service, known as OPAT (Outpatient Parenteral Antibiotic Therapy), began in January 2013 and this research study will help us understand what works well and how we can continue to improve.

I would like to invite you to take part in the research study because you have been offered your treatment at home as part of the OPAT service and I hope we can learn from your experience. Before you decide if you want to take part it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Please ask me to explain if anything is not clear or if you would like more information. Take time to decide whether or not you wish to take part. If you would like to contact me please use the contact details at the end of this information sheet.

What is the purpose of the research?
The purpose of this research study is to understand the experiences of the people involved in OPAT. The OPAT service has changed the way some patients receive their treatment and it means that intravenous antibiotics can be given at home rather than needing to stay in hospital. This means that health care professionals in the hospital and in the community follow a pathway of care to make sure that the treatment can be delivered and monitored safely in the home setting.
The study will follow the delivery of OPAT for number of patients and will aim to understand the experiences of patients and the professionals who have provided their care.

Why have I been invited to take part and do I have to take part?
You have been asked to participate because you have been offered your intravenous antibiotic treatment at home as part of an OPAT pathway. You do not have to take part in the study and your treatment at will not be affected if you decide that you don't want to participate in the study. You can have your treatment at home whatever you decide.
It is completely up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep (and be asked to sign a consent form) and you can still withdraw from the study at any time without it affecting your treatment. You do not have to give a reason if you decide not to take part.

What will happen to me if I take part?

If you agree to take part I will contact you to arrange an interview, either while you are having your intravenous antibiotics at home or soon after your treatment is complete, where I will ask you about your experience of the OPAT pathway. The interview will last about an hour and will be arranged for a time and place suitable for you.

The interview will take the form of a conversation and I will use some words written on cards to guide our conversation. I will ask you to tell me if the words apply to your experience of having intravenous antibiotic treatment at home. If you think of any new words I will add them to the cards and show them to other participants to see if they apply to their experiences too. During the interview I will ask you to arrange the word cards in a way that represents your experience of OPAT and then I will photograph your arrangement of cards so that I have a record of your thoughts. I would prefer to make a sound recording our conversation, so that I can make a written copy of the conversation to look at during the rest of the research process, but this is not essential and you can choose if you want our conversation to be recorded. I may ask to interview you again at a later date in the study to check my findings or to ask about a particular aspect of your experience. You are free to decide if you want to take part in another interview and you will not have to give a reason if you decide not to take part in a follow up interview.

What are the possible benefits and risks of taking part?

The interview will take an hour or so of your time and there is no payment for this. Whilst there are no immediate benefits for those people participating in the study, it is hoped that this work will support developments in the OPAT service which will improve the quality of care and the experiences of those involved in the future.

Will my taking part in this project be kept confidential?

All the information that is collected from you during the course of the research will be kept strictly confidential, but if at any time we identify something which is in breach of professional codes of conduct or which puts an individual at harm I will need to act on that information. You will not be identified in any reports or publications; participants will only be referred to according to their role in the OPAT pathway e.g. patient, nurse, doctor etc. The data collected from you will be securely stored on University password protected computer systems and you can access the data at any time during the research by contacting me using the details at the end of this information sheet.

The results of the study will be part of a supervised Professional Doctorate research programme and the completed study will be shared with university examiners and the NHS Trust. Aspects of this study may also be published and participants will not be identified in any report or publication. A summary report of the study findings will be offered to all participants.

Thank you for taking the time to read this information sheet. If you are able to take part please contact me by using the information below or tell one of the health professionals involved in your care and they will contact me on your behalf.

Lindy Turnbull,
Email: lindy.turnbull@northumbria.ac.uk   Work Telephone: 0191 215 6415

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Appendix F

Staff Participant Information Sheet

Staff Participant Information

Understanding Experiences of OPAT: Managing Intravenous Antibiotic Therapy at Home.
Researcher: Lindy Turnbull.

My name is Lindy Turnbull and I am a nurse and senior lecturer undertaking a Professional Doctorate course at Northumbria University. I am currently conducting a study to understand how people experience pathways of care which enables intravenous antibiotics to be given at home. The service, known as OPAT (Outpatient Parenteral Antibiotic Therapy), began in January 2013 and this research study will help us understand what works well and how we can continue to improve.

I would like to invite you to take part in the research study because you have been involved in the pathway for a patient receiving intravenous antibiotics as part of the OPAT service and I hope we can learn from your experience. Before you decide if you want to take part it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Please ask me to explain if anything is not clear or if you would like more information. Take time to decide whether or not you wish to take part. If you would like to contact me please use the contact details at the end of this information sheet.

What is the purpose of the research?

The purpose of this research study is to understand the experiences of the people involved in OPAT. The OPAT service has changed the way some patients receive their treatment and it means that intravenous antibiotics can be given at home rather than needing to stay in hospital. This means that health care professionals in the hospital and in the community follow a pathway of care to make sure that the treatment can be delivered and monitored safely in the home setting.
The study will follow the delivery of OPAT pathways for a number of patients and will aim to understand the experiences of patients and the professionals who have provided their care.

Why have I been invited to take part and do I have to take part?

You have been asked to participate because you are a health care professional who has been involved in the delivery of an OPAT pathway to deliver intravenous antibiotic treatment to a patient at home. You do not have to take part in the study and it is completely up to you to decide whether or not to take part. You, and your role in OPAT, will not be affected if you decide not to take part in the study. If you do decide to take part you will be given this information sheet to keep (and be asked to sign a consent form) and you can still withdraw from the study at any time without it affecting you. You do not have to give a reason if you decide not to take part.

What will happen to me if I take part?

If you agree to take part I will ask to arrange an interview where I will ask you about your experience of the OPAT pathway. The interview will last about an hour and will be arranged for a time and place suitable for you. Group interviews can be arranged for the convenience of participants in teams, but individual interviews will also be offered and available to meet participants' preferences.

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The interview will take the form of a conversation and I will show you some words written on cards to guide our conversation. I will ask you to tell me if the words apply to your experience of being involved in OPAT. If you think of any new words I will add them to the cards and show them to other participants to see if the words apply to their experiences too. During the interview I will ask you to arrange the word cards in a way that represents your experience of OPAT and then I will photograph your arrangement of cards so that I have a record of your thoughts. I would prefer to make a sound recording of our conversation, so that I can make a written copy of the conversation to look at during the rest of the research process, but this is not essential and you can choose if you want our conversation to be recorded. I may ask to interview you again at a later date in the study to check my findings or to ask about a particular aspect of your experience. You are free to decide if you want to take part in another interview and you will not have to give a reason if you decide not to take part in a follow up interview.

What are the possible benefits and risks of taking part?

The interview will take an hour or so of your time and there is no payment for this. Whilst there are no immediate benefits for those people participating in the study, it is hoped that this work will support developments in the OPAT service which will improve the quality of care and the experiences of those involved in the future.

Will my taking part in this project be kept confidential?

All the information that is collected from you during the course of the research will be kept strictly confidential, but if at any time we identify something which is in breach of professional codes of conduct or which puts an individual at harm I will need to act on that information. You will not be identified in any reports or publications; participants will only be referred to according to their role in the OPAT pathway e.g. patient, nurse, doctor etc. however it is possible that some participants may be identifiable within the research setting by nature of being one of a limited number from a profession involved in OPAT within this organisation e.g. specialist nurses, consultants or pharmacists. I will therefore ask for your permission to include direct quotes from your interview in the final study report. Please discuss this with me if you have any questions.

The data collected from you will be securely stored on University password protected computer systems and you can access the data at any time during the research by contacting me using the details at the end of this information sheet.

The results of the study will be part of a supervised Professional Doctorate research programme and the completed study will be shared with university examiners and the NHS Trust. Aspects of this study may also be published and participants will not be identified in any report or publication. A summary report of the study findings will be offered to all participants.

Thank you for taking the time to read this information sheet. If you are able to take part please contact me by using the information below.

Lindy Turnbull,
Email: lindy.turnbull@northumbria.ac.uk Work Telephone: 0191 215 6415

Appendix G

Consent Form

northumbria
UNIVERSITY

County Durham and Darlington NHS
NHS Foundation Trust

Research Consent Form

Understanding Experiences of OPAT: Managing Intravenous Antibiotic Therapy at Home.

Researcher: Lindy Turnbull.

Please read the following six statements and initial the appropriate box to indicate your answer.

		Yes	No
1	I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions.		
2	I understand that my participation is voluntary and that I am free to withdraw at any time, without giving reason.		
3	I agree to take part in the above study.		
4	I agree to the interview / focus group / consultation being audio recorded		
5	I agree to take part in more than one interview / focus group / consultation if required for the research.		
6	I agree to the use of anonymised quotes in publications		

Please sign and date below:

_____   _____   _____

Name of Participant   Date   Signature

_____   _____   _____

Name of Researcher   Date   Signature

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Appendix H

Semi-structured Interview Protocol

County Durham and Darlington NHS Foundation Trust

Interview Protocol (for use by researcher)

Full title of Project:

Understanding Experiences of OPAT: Managing Intravenous Antibiotic Therapy at Home.

Researcher: Lindy Turnbull.

Interview Item	Action/content	Minutes
1 Introduction & Key Points	Thank you for meeting with me today Introduce self (and others if group) The purpose of the study is to understand your experience of the OPAT service and receiving treatment/being part of managing treatment in an OPAT pathway. The data I collect will remain confidential- only I and the supervision team will have access to it. Some quotes will be used in the final study report and may be used in publications. Your identity will not be linked to your responses but your role in OPAT will be linked to your comments. ➥ Would you like to check and approve any direct quotations I may take from this interview for inclusion in the final study report? You have the right to withdraw from the study at any time. You can choose to leave or not answer any questions asked should you feel uncomfortable at any time during our discussion of your experiences. Confirm permission to record the session: ✦ Only I will access audio-recordings. Transcripts will only available to research supervision team members. ✦ I will use descriptors rather than names in the transcripts. ✦ As I reflect on what you've shared, summarize it, and report about it, I will only use this information for activities outlined within the research proposal and approved by ethics committees. Ground rules (for possible group sessions). ✦ Everyone is welcome to participate as they wish to ✦ All ideas are equally valid ✦ Please remember that what's said inside this room today must stay here. It's important that you respect the privacy of other participants. If at any time we identify something which is in breach of professional codes of conduct or which puts an individual at harm I will need to act on that information. ➥ Have you any questions?	10

	If there are no more questions about the informed consent document, please sign. Ensure participants retain a copy. **START RECORDING DEVICE**	
2 Question 1	➤ Tell me what your role is in OPAT and describe your experience of the way OPAT works? **Potential Probes:** ➤ How have you been involved? ➤ Who has worked with you? ➤ How would you describe the way the pathway has worked?	5 (15)
3 Question 2	➤ Can you describe how people have involved you and communicated with you? **Potential Probes:** ➤ What is good about the way people work? ➤ Could anything make OPAT better?	5 (20)
4 Question 3	Pick up on any unusual/ interesting issues raised. **Potential Probes:** ➤ Tell me more about... ➤ What do you mean by...	5 (25)
5 Card Activity 1	I'm going to show you these word cards. The words are taken from articles which define the characteristics of collaboration and are concepts/terms that are associated with working together. ➤ Can you look at them and tell me which ones apply to the way you think people work when they are involved in OPAT? ➤ Can you put the words on the table in a way that demonstrates how OPAT works? **Potential Probes:** ➤ What are the most important or central things? ➤ What influences the way people work together	10 - 15 (40)
6 Card Activity 2	➤ Can you think of any other words which apply to your experience of how people work together in OPAT? **Potential Probes:** ➤ Is there anything missing? ➤ Would you like (me) to write any words on a new card? ➤ Have we missed anything that you think should be included? Photograph the arrangement of cards.	10 -15 (55)
8 Conclude	Thank you for your time today Reiterate contact information—if participants have questions or concerns. ➤ Would you be happy for me to contact you again later in the research if I need to check anything with you or ask any more questions? ➤ Would you like a summary of the research report once it is complete? Post interview – make notes and keep record of recording and participant code.	5 (60)
Word Cards		

Appendix I

Focus Group Protocol

Focus Group Interview Protocol

(For use by researcher if group interviews are required)

Full title of Project:

Understanding Experiences of OPAT: Managing Intravenous Antibiotic Therapy at Home.

Researcher: Lindy Turnbull.

Interview Item	Action/content	Minutes
1 Introduction & Key Points	Thank you for meeting with me today Introduce self and others in group. The purpose of the study is to understand your experiences of the OPAT service and receiving treatment/being part of managing treatment in an OPAT pathway. The data I collect will remain confidential- only I and the supervision team will have access to it. Some quotes will be used in the final study report and may be used in publications. Your identity will not be linked to your responses but your role in OPAT will be linked to your comments. ❯ Does everyone agree to take part in this group interview? Individual interviews are also available and can be arranged if anyone would prefer that. ❯ Would you like to check and approve any direct quotations I may take from this interview for inclusion in the final study report? (each participant to be asked this question) You have the right to withdraw from the study at any time. You can choose to leave or not answer any questions asked should you feel uncomfortable at any time during our discussion of your experiences. Confirm permission from all group participants to record the session: ❖ Only I will access audio-recordings. Transcripts will only available to research supervision team members. ❖ I will use descriptors rather than names in the transcripts. ❖ As I reflect on what you've shared, summarize it, and report about it, I will only use this information for activities outlined within the research proposal and approved by ethics committees. Ground rules for possible group sessions. ❖ Everyone is welcome to participate as they wish to ❖ All ideas are equally valid ❖ Please remember that what's said inside this room today must stay here. It's important that you respect the privacy of other participants.	10

	If at any time we identify something which is in breach of professional codes of conduct or which puts an individual at harm I will need to act on that information by informing the appropriate manager. ➤ Have you any questions? If there are no more questions about the informed consent document, please sign. Ensure participants retain a copy. **START RECORDING DEVICE**	

2
Question 1
	➤ Tell me what your roles are in OPAT and describe your experience of the way OPAT works?
	Potential Probes:
	  ➤ How have you been involved?
	  ➤ Who has worked with you?
	  ➤ How would you describe the way the pathway has worked?
		5 (15)

3
Question 2
	➤ Can you describe how people have involved you and communicated with you?
	Potential Probes:
	  ➤ What is good about the way people work?
	  ➤ Could anything make OPAT better?
		5 (20)

4
Question 3
	Pick up on any unusual/ interesting issues raised.
	Potential Probes:
	  ➤ Tell me more about...
	  ➤ What do you mean by...
		5 (25)

5
Card Activity 1
	I'm going to show you these word cards (each participant to have their own set of word cards).
	The words are taken from articles which define the characteristics of collaboration and are concepts/terms that are associated with working together.
	  ➤ Can you look at them and tell me which ones apply to the way you think people work when they are involved in OPAT?
	  ➤ Can you put the words on the table in a way that demonstrates how OPAT works?
	Potential Probes:
	  ➤ What are the most important or central things?
	  ➤ What influences the way people work together
		10 - 15 (40)

6
Card Activity 2
	➤ Can you think of any other words which apply to your experience of how people work together in OPAT?
	Potential Probes:
	  ➤ Is there anything missing?
	  ➤ Would you like (me) to write any words on a new card?
	  ➤ Have we missed anything that you think should be included?
	Photograph the arrangement of cards.
		10 -15 (55)

8 Conclude	Thank you all for your time today Reiterate contact information—if participants have questions or concerns. ➤ Would you be happy for me to contact you again later in the research if I need to check anything with you or ask any more questions?	5 (60)

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| | ➤ Would you each like a summary of the research report once it is complete?

Post interview – make notes and keep record of recording and participant's code. | |

Appendix J

Coordinating Category Map