INFLUENCES ON NURSE PRESCRIBER'S DECISION-MAKING: A PHENOMENOLOGICAL STUDY

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Dedication

I dedicate this thesis to my late father, Sydney George Cartlidge, who died unexpectedly in 2015 at the age of 76 with a brain tumour. Dad was always singing my praises and keen to tell everyone about the family he was so proud of. He would have so loved to see me achieve this award. Dad this is for you!

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Abstract

Background

Prescribing is not merely the accurate writing of a prescription, but the application of theory related to assessment, examination, diagnostics and associated decision-making strategies. Despite the popularity of nurse prescribing and its reported benefits, which have been widely studied within the UK, there is limited research into the factors that influence nurse prescribers' decision-making and the implications of those decisions on their subsequent prescribing practice.

Aim

The study was designed to explore the lived experience of nurse prescribers and understand how their perception of their own competence and scope of practice influences their prescribing decision-making.

Methods

Interpretive phenomenological analysis is used to interpret, semi-structured interviews and vignette discussions undertaken with nine NIPs from community and acute care settings within the West Midlands.

Findings

Decisions made about prescribing options, are effectively driven by individual levels of confidence, yet profoundly shaped by local arrangements. The

variation in local governance, suggests there is inconsistency in approach to formulary development or expansion based on prescribers' scope of practice. These contributory factors when combined with variable individual knowledge and diagnostic ability result in inconsistent prescribing practice.

Conclusion

A conceptual model based on influences on nurse prescribers' decision-making is presented.

Keywords

Decision-Making, Nurse Prescribing, Competence, Scope of Practice, Phenomenology

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Abbreviations

A&E – Accident and Emergency Department

AHP – Allied Health Professional

BNF – British National Formulary

BNFC – British National Formulary for Children

CCG – Clinical Commissioning Group

CMP – Clinical Management Plan

COPD – Chronic Obstructive Pulmonary Disease

CPD – Continued Professional Development

DHSS – Department of Health and Social Security

DHx – Drug History

DMP - Designated Medical Practitioner

DN – District Nurse

DoH – Department of Health

FHx – Family History

F2F – Face to Face

GDPR – General Data Protection Regulation

GP – General Practitioner

HEI – Higher Education Institution

HRA – Health Research Authority

HPC – History of presenting complaint

HV – Health Visitor

IRAS – Integrated Research Application System

IP – Independent Prescriber

IPA – Interpretive Phenomenological Analysis

N – Number Equals

NHS – National Health Service

NIP – Nurse Independent Prescriber

NMP – Non-Medical Prescriber

NMC – Nursing and Midwifery Council

OTC – Over the Counter

PC – Presenting Complaint

PMH – Past Medical History

PP – Pharmacist Prescriber

RCN – Royal College of Nursing

SE – Systemic Enquiry

SHx – Social History

SP – Supplementary Prescriber

SPQ – Specialist Practice Qualification

SSI – Semi-Structured Interviews

UK – United Kingdom

USA – United States of America

Chapter One: Background and historical perspective

1.0 Introduction

The aim of this study is to understand aspects of the lived experience of nurse independent prescribers (NIPs) working within the United Kingdom (UK) and employed within primary, community or secondary care settings. The study will aim to subsequently understand the influences of nurses' decisions, in relation to their prescribing practice. Clinical decision-making will be reviewed within the context of the NIPs' perception of their own accountability, scope of practice and competence. How NIPs define, monitor and manage their competence and their scope of professional practice will be central to this enquiry.

1.1 Motivation for the study

An interest for this study emerged from working within a higher education institution (HEI) and being required to deliver nurse prescribing education and subsequent annual updates, to qualified nurse prescribers. During open discussions, it became evident that for some individuals, their notions regarding their perceived jurisdiction of practice, had changed considerably since completion of their prescribing training. Their beliefs around what defined their scope of practice and influenced it, were significantly different to that originally proposed by them or their organisations. This anecdotal sea-change in their professional perspective, prompted the consideration to understand how nurses make decisions about their prescribing practice and if, how, when and why an individual's prescribing practice changes.

1.2 Identifying the boundaries

The term scope of practice is widely used in the current nursing vernacular and is adopted by the Nursing and Midwifery Council (NMC) as the notional 'responsible' boundary with which clinicians should operate during their prescribing practice (NMC 2006, 2015, 2018). Professional discussions continued to identify that the scope of prescribing practise for some individuals was clearly defined by the formulary they were restricted to use, legally, professionally or contractually, a finding previously noted by Bowskill et al (2012). For others this was less well defined. The, somewhat nebulous, concept of scope of practice appears therefore to shift accountability onto the individual practitioner, requiring them to identify what is, and what is not, within their perceived competence (Lim et al 2018). The discussions identified that for several practising nurses their prescribing remit is notionally and individually defined. This perception that boundaries can be self-regulated, led to questions about the term 'competence' and how nurse prescribers define their scope of prescribing practise and their prescribing competence, in order to make decisions about their prescribing practice.

Short (1984) described competence as a quality that is possessed by individuals, without specifying the extent of their role, in each situation. Benner (1982) had previously related the concept of competence to nursing, advocating that competency is accurately performing tasks under a variety of circumstances. Using Benner's 'novice to expert continuum' this would place competence clearly in the middle of these parameters (Benner 1982b). There

is no correlation, however, with knowledge and how this relates to the skill or task in hand.

Conversely almost two decades later Chapman (1999), purported that competence related to what people can do, rather than what they know. This again suggests a disconnect between knowledge and its application in practice. If this is true, then a task-orientated approach to healthcare would be enough for clinicians to practice, as they would not be expected to understand the theory behind their practice. In relation to prescribing specifically, this would pose a significant risk to patient safety and is fortunately not supported as a concept in healthcare today. In 2005, Cowan et al inferred that competence in nursing is indeed difficult to define and implied a lack of consistency in both definition and application, although failed to offer a suggestion for what a clear definition should be. Assessment of prescribing competence is, however, professionally required and academically and clinically verified, throughout NIPs educational preparation (NMC 2006, 2018, Royal Pharmaceutical Society 2016). This assessment utilises several methods of knowledge assessment and its application to practice thus ensuring clinical safety. Ongoing competency and review of individual knowledge base, however, does not afford such rigorous assessment and is currently self-regulated.

This study will therefore explore if and how individuals define and maintain their competency in their area of prescribing practice and will begin to understand their journey as a prescriber, including how clinical decisions are made.

1.3 Research Focus

A qualitative approach using an interpretative methodology, will be used to establish how an individual NIP, perceives their current scope of practice and how they define their area of clinical competence in relation to prescribing. It will seek to appreciate how decisions are made by NIPs and if and how those decisions are guided by principles established in their prescribing preparation, education, or continued professional development (CPD). The study will also seek to identify if the underpinning methodology used by NIPs to make decisions, has developed since they became immersed in their prescribing practice. The relationships between current and previous prescribing practice will therefore be considered against any organisational or external influence including custom and practise of peers.

The outcome of the study is intended to be used to inform practice from both an educational and clinical perspective and to guide the direction of future NIP training and further professional development.

1.4 Aims and objectives of the study

The aim of the study is to understand the perceived *lived* experiences of NIPs and further explore how they describe the processes and rationale behind their prescribing decision-making in practice.

The objectives are to:

- Identify how NIPs recognise their competence and scope of prescribing practice.
- Explore the perceived external influences on prescribing practice.
- Discuss how nurse prescribing decision-making strategies are used in relation to a given hypothetical scenario.

1.4.1 The literature review questions

Is there perceived external pressure to prescribe outside of one's scope of practise?

Does a specific role or title influence prescribing practises?

Do prescribers consider what affects their own decision-making strategies?

1.5 Context - A Time for change

One of the most important events of the 1980s was the development of nurse prescribing, purported in the Neighbourhood Nursing report authored by the Department of Health and Social Security (DHSS) (1986). It was Dame Cumberlege who recognised the time wasted by District Nurses (DN) requesting endorsements for their own prescribing decisions (DHSS 1986). A situation referred to by Bradley and Nolan (2007) as *prescribing by prox*y or the informal prescribing decisions made by non-prescribers countersigned by medical practitioners (Peniston-Bird 2008).

This process for prescription generation regularly featured in clinical practice and has been reported by a number of authors including Hay et al (2004),

Hemmingway and Ely (2009), Bowskill (2009) and Jones (2009), particularly within the community setting and this was recounted by prescribers during initial conversations. Although the practice of prescribing by proxy, is not illegal (Bradley et al 2005), it is not considered as good practice, due to the potential influence on patient safety.

Prescribing by proxy is not only a UK phenomenon, as Jutel & Menkes (2010) report in a New Zealand survey of 94 non-prescribers, 40% of non-prescribing nurses had initiated a prescription and 45% written a prescription for a doctor to sign. This demonstrates the direct influence nurses have on the prescribing decisions of their medical colleagues. More importantly, studies such as this, emphasise the global need for nurses to enhance their own practice, thus reducing the need for prescribing by proxy.

It was not until 1992, that legislation, in the form of the Medicinal Products Act (Prescription by Nurses), afforded nurses the legal ability to prescribe medicines, albeit initially with significant restrictions on their practice. For District Nurses and Health Visitors holding a Specialist Practice Qualification (SPQ), nurse prescribing became a compulsory element of their role (Latter and Courtenay 2004). Since its introduction, several early studies have identified the infrequent nature of prescribing by HVs and DNs (While and Biggs 2004, Luker & McHugh 2002, Hall et al 2006). Campbell and Collins (2001) suggested that this related to clinicians refusing to accept the practice as relevant to their role and pay grade and was a potential consequence of an enforced role development. This enforcement had a negative consequence in

the impact of the cost of prescribing training without the benefit of new prescribers utilising their skill. In fact, in a survey undertaken by Luker and McHugh (2002) they reported 25% of the participants as not actively prescribing. Irrespective of this, the development of nurse prescribing continued with the expansion of prescribing rights for nurses other than HVs and DNs (DoH 1999).

1.5.1 Extension to prescribing rights in the UK

The publication of the second Crown Report (DoH 1999) signalled an agreed extension to nurse prescribing rights. Other healthcare professionals, including pharmacists and a limited group of Allied Health Professionals (AHPs) comprising of physiotherapists, radiographers, optometrists and podiatrists were included in this expansion; how this selection was made remains uncertain. This collective group of prescribers are globally recognised by the term non-medical prescribers (NMPs) (Courtenay et al 2012). Despite this generic title, regulation variances occur between professional bodies, affecting the equity of prescribing practice (Cope et al 2016). Initially two prescribing roles were developed which would see practical differences between the roles.

Independent prescribing (IP):

The Department of Health's (DoH) working definition of independent prescribing is:

'prescribing by a practitioner (for example, doctor, dentist, nurse, pharmacist) responsible and accountable for the assessment of patients with undiagnosed or diagnosed conditions and for decisions about the clinical management required, including prescribing' (DoH 2005:1).

An independent prescriber (IP) is expected to take responsibility for undertaking a clinical assessment, the formation of a clinical diagnosis and deciding on the most appropriate treatment. Conversely, supplementary prescribers are not expected to make a clinical diagnosis as part of their prescribing practice.

Supplementary prescribing: (SP)

The term supplementary prescribing is defined as*:*

'a voluntary partnership between an independent prescriber (doctor or dentists) and a supplementary prescriber to implement an agreed patient specific clinical management plan with the patient's agreement.' (DoH 2005b:1).

Despite its popularity with clinicians the extension to independent prescribing rights was slow to develop. Courtenay and Carey (2008) reported that this could be attributable to several variable factors. They noted that a lack of prescribing might be attributed to formularies, knowledge base, governance issues, budgetary restrictions and access to computer records. Similar findings had been previously noted by Larsen (2004), Hall et al (2006) and Latter et al (2005). Courtenay et al (2007) also added confidence to this list.

The growth of supplementary prescribing (SP) was affected by several barriers, but specifically the requirement for the development of the patient specific Clinical Management Plan (CMP), and the lack of peer support noted by novice prescribers (Courtenay et al 2007 and Bradley et al 2005).

The supplementary prescribing role is almost completely obsolete in practice, for nurses and pharmacists, due to the significant number of incremental changes to legislation and regulation occurring between 2005 and 2012. These

incremental changes now offer greater scope for prescribing practice for nurses and allied health professionals and include medications that were initially outside of their legal boundaries. For nurses specifically, legislation changes have almost removed the necessity for supplementary prescribing.

The authority to prescribe controlled drugs, is still not wholly unrestrained, however, as nurses are prohibited from independently prescribing diamorphine, cocaine and dipipanone for the treatment of addiction. These drugs can be prescribed for other conditions, without restriction. The inability to prescribe all drugs independently therefore prevents the removal of supplementary prescribing necessitating a dual qualification. The practical application for SP may prove challenging in the future, as clinicians de-skill from the use of this type of prescribing making the practical application of knowledge to skill difficult.

1.6 Prescribing governance

Irrespective of clinical role, employer or geographic location within the UK, professional regulation by the Nursing and Midwifery Council (NMC) continues to govern all nurse prescribing practice. The types of drugs that can be prescribed by any suitably qualified NIP are catalogued within the British National Formulary (BNF) and this list is adapted by employers for local use. Local governance arrangements of this nature do create variances, however, and a lack of equity amongst prescribers. Kroezen (2014) purports similar variation in governance arrangements internationally.

Governance takes the form of prescribing monitoring and formulary restriction, although the literature indicates that the monitoring of prescribing data has historically been restricted to community and primary care settings. Smith et al (2014) imply that this is likely to be because secondary care struggles to identify this level of granularity in their prescribing data. Smith et al (2014) along with Hall (2010), consider that governance of this type, relates to the review of the overall cost of prescribing, rather than a review of what was prescribed, or its relationship to individual scope of practice and competence. This type of governance arrangement suggests that control is financially driven rather than clinically focused.

Finding from Ross & Kettle's (2012) study of mental health nurse prescribers, identified a more specific direct influence on NIPs' prescribing practice from their employers. They related this to a lack of understanding of prescribing practice generally. The consequence of this was enforced restrictions to prescribing practice. This intimates that extrinsic influence on prescribing practice is evident in varying capacities.

1.7 International perspectives on prescribing

Whilst nurse prescribing did not commence in the UK until the 1990s, non-medical prescribing preparation and practice has been in place in the United States of America (USA) since 1969. Prescribing was subsequently introduced into Canada, New Zealand, Australia and a few European countries, most recently being Finland in 2011. Globally there are a variety of non-medical

prescribing models, according to Kroezen et al (2011). Educational preparation is extremely variable globally, with Finland adopting an approach to educate prescribers over a 14-month duration compared to the UK 3-6-month duration. There is no indication, for either country, as to why the particular respective time frame was established.

The development of prescribing globally stemmed from specific healthcare needs. Sweden's expansion to prescribing rights for nurses in 1994, focused on those working in primary care and healthcare for older people, using prescribing from a limited formulary (Kruth 2013, Creedon et al 2009, Buchan and Calman 2004, Kroezen et al 2012). This is an area which may have been specifically identified due to the challenges of an aging population.

In contrast the USA has a model that varies between states, where competence is assessed locally. This may again be designed to manage specific target areas of health need or in areas where access to healthcare is limited, unlike its use in the UK where the purpose of nurse prescribing is not solely to focus on addressing health inequality.

Where rurality is a specific problem, and there is a lack of medical practitioners, in countries such as New Zealand, Australia and Canada, nurse practitioners work as prescribers, but are again limited to a specific formulary (Courtenay and Carey 2008). This is specifically noted in Africa with the treatment of pandemics of Human Immunodeficiency Virus and AIDS by nurse prescribers (Miles et al 2006). The variation of international practice has at least one similarity and that relates specifically to the governance arrangements and restrictions imposed on nurse prescribers, which are like

those imposed in the UK in the late 1990s early 2000s. This is very different to current UK practice where prescribing opportunities have developed exponentially with the expansion of formularies based on clinical need.

What is clear from the literature is that nurse prescribing, irrespective of location, has socio-political and professional influence, with legislative and professional body restrictions, yet is reportedly safe and cost effective and has significant benefits to service users (Kroezen et al 2011, Gielen et al 2014).

Despite the professional recognition for role development for nurses and other allied health professionals, there remains huge variability in practice. Notably the lack of equity between non-medical prescribers and medical colleagues in relation to prescribing governance (Kroezen et al 2011). What appears to be lacking is a consistent approach to governance arrangements and boundary setting in relation to nurse prescribing practice and an understanding of how these impact on decision-making.

1.8 Overview of thesis content

The eight chapters of this thesis outline the research journey undertaken as part of this study. Chapter one as presented above, offers an overview of nurse prescribing and provides the aims and objective for the study.

Chapter two explores the terminology related to decision-making, along with associated models and theories, to identify if a suitable theory can be related to nurse prescribing.

Chapter three provides a review of the contemporary literature that focuses on nurse prescribing competence, scope of practice and decision-making in order to identify gaps in knowledge.

Chapter four discusses the philosophical underpinnings of the study and offers a methodological plan, including a research paradigm as a basis for the research.

The emphasis of chapter five is on the research method and this chapter will chart the research journey from the identification of the research questions, subsequent ethical approval for the study, through to sampling, data collection and then analysis of the data.

Chapter six centres on the findings from the two methods of data collection used, supported by examples from participants, using verbatim text. This is followed by an interpretation of the combined findings.

A discussion chapter follows in chapter seven, which synthesises the findings and highlights the new information identified from the study along with the study limitations.

The final chapter offers a conclusion to the study and the future research opportunities, considering the professional implications of the study.

1.9 Summary of the introduction

Non-medical prescribing is an internationally accepted role enhancement for suitably qualified nurses, providing safe, effective, efficient practice which

positively impacts on patient care (Gielen et al 2014). A series of legislative and professional changes have facilitated this development over the last two decades. Despite standardised educational preparation, for nurse prescribers, the evaluations related to readiness to practice, have been variable. Courtenay et al (2012) and Cope et al (2016) report that some prescribers feel ill prepared to use their prescribing qualification, citing a lack of support or lack of pharmacology knowledge as a rationale for this. Goswell and Siefers (2009) suggest that it is a lack of confidence alone, which prevents nurses applying their prescribing knowledge in practice. The complex process of prescribing is reported to be influenced both subjectively – by an individual's knowledge, skills and attitudes – and objectively – by legislation, professional and organisational boundaries (Abuzour et al 2018b, Cope et al 2016). This poses the question as to how, when and why nurses decide to prescribe for their patients and what influences this decision.

In order to comprehend why and how decisions are made it is important to firstly understand the term decision-making and how theory related to this is applied, if at all to prescribing practice. The following chapter will review relevant decision-making models and theory related to healthcare practice.

Chapter Two: Decision-making and its correlation with nurse prescribing

2.0 Introduction

In order to identify theory that may have relevance to nurse prescribing decision-making, a search of the literature was undertaken. In this chapter the art of making a decision is defined and explored, specifically in relation to healthcare practice, using the concept of clinical decision-making. The models and theories aligned to clinical decision-making, are reviewed and consideration given to their potential to underpin the prescribing practices of nurses.

Decision-making forms part of everyday life, with most decisions made without realisation of their occurrence (Sahakian & Labuzetta 2013). For prescribers, the timeliness and consequence of their decisions requires careful consideration as the potential to impact on patient safety is evident (Bradley et al 2007). More recent studies by Bjork & Hamilton (2011) and Offredy et al (2008) identified the implications and impact that decisions have on patients' health and wellbeing from a positive and negative perspective. Yet in order to understand how this impact correlates with clinical experience, academic underpinning, in the form of new knowledge on how decisions are made, further exploration is needed.

2.1 Unravelling the terminology

Clinical decision-making is an accepted term applied to decisions made within healthcare practice and Offredy et al (2008) suggest that this term is widely recognised in disciplines such as medicine, nursing and psychology. Within

the literature the term decision-making is, however, interchangeably applied with expressions such as clinical judgement, problem solving, clinical reasoning, diagnostic reasoning and critical reflection according to Everingham (2012), implying a lack of clarity for the term. Thompson (2002) purports that this interchangeability of terminology only dilutes the enormity of the topic area. Benner et al (2008) agree advocating that the interchangeability of terminology should be used with caution. They recount significant differences between the concepts of clinical reflection and clinical reasoning specifically, that need to be more clearly understood, for clinicians to make a sound clinical judgement.

2.1.1 Clinical reflection

It is understood that clinical reflection crosses professional boundaries and stems from the concept of reflective practice, originally developed by Donald Schön (1983). This process has been embedded in pre-registration nurse training for decades and is used to develop critical thinking (Nicholl & Higgins 2004) encouraging clinicians to reflect both *in action* and *on action*. Schön (1983:50) also introduced the term *tacit knowledge* defined as *knowing in action*, suggesting competent practitioners can address the task in hand with the '*application of knowledge to instrumental decisions*.' Schön does not, however, offer a definition of competency.

The interdisciplinary process, which is intended to develop best practice, is reliant on learning from previous experience (Boud & Walker 1990, Johns 2002). Green (2002) suggests that this process can also be utilised to explore

and challenge individual beliefs and behaviours, which Brookfield (1998) suggests critical reflective practitioners should be able to do through the lens of themselves and others. Whilst this important process can be used to promote personal development and individual learning from experiences, it is not enough on its own to guide decision-making. Thompson et al (2016) suggest that decision-making requires a combination of knowledge and the ability to interpret data, whilst weighing up risks versus benefits. This suggests a complex multifaceted process which has been described as clinical reasoning and in relation to nursing specifically, has been referred to by Jones (1988) simply as a cognitive approach used to make decisions.

2.1.2 Clinical reasoning

Clinical reasoning is effectively the process of reviewing information obtained from cues related to a specific situation, in order to understand and act on a clinical problem. Yet Higgs et al (2008) suggest that this simplicity and breadth of potential is what makes clinical reasoning a complex subject as it spans autonomy, accountability, responsibility and professionalism and is integrally linked to not only the task but also the environment. Higgs and Jones (2000) advocate that it is imperative that clinical reasoning is founded on knowledge, cognition and metacognition. This signifies that clinical reasoning necessitates both inductive and deductive cognitive skills. The ability to utilise pattern recognition and interpret objective clinical data, is therefore critical to effective clinical reasoning.

The scope of one's experience directly affects pattern recognition, meaning that novice practitioners cannot be expected to have the same inductive skills as more experienced expert practitioners and basing decisions on this alone would increase the risk of error. To negate this risk Hajjaj et al (2010) advocated that decision-making should be underpinned by biomedical knowledge, experience and problem-solving skills. This concurs with the earlier work of Boshuizen & Schmidt (1995) but Hajjaj et al (2010) suggest it is the experience in clinical practice that assists practitioners in comprehending the biomedical knowledge and helps them to formulate this into useful patterns. This implies that critical thinking and clinical reflection are both imperative to clinical reasoning and that clinical reasoning is fundamental to clinical decision-making. Having established the importance of clinical reasoning in decision-making, what is less clear is the reliance on any theoretical underpinning to support decision-making specifically by nurse prescribers.

2.2 Theoretical models that influence nursing practice

Traditionally it has been implied that the underpinning knowledge utilised by nurses to make to clinical decisions is tacit, intuitive and emotional (Buckingham and Adams 2000), potentially undermining the professional status of the role. Because of this, several authors have attempted to correlate theoretical models with nursing practice (Raiffa 1970, Kolb 1984, Hammond 1980 and Doherty & Kurz 1996 and Offredy et al 2008). Several models and theories will be reviewed with a specific focus on how they may be employed to support prescribing decision-making.

2.2.1. Intuition

Intuition has been described as '*understanding without rationale* or *a sixth sense'* by Benner & Tanner (1987:23), '*knowing without knowing'* by Pearson (2013:213) and *'a gut feeling'* by Melin-Johansson et al (2017:3937). It is therefore not surprising that this concept appears to be somewhat abstract. Although not well understood, intuitive practice is widely accepted in nursing (Rew & Barrow 1987). There are several authors who positively acknowledge intuition and its benefit in nursing and more specifically in clinical decision-making (Benner 1982b, Benner & Tanner 1987, Darbyshire 1994, Rew & Barrow, 2007) yet there are others who fail to see the relevance of it in any part of clinical practice (English 1993, Cash 1995).

Patricia Benner's (1982b) seminal work *Novice to Expert*, incorporates the use of intuition and recognises this in the transition from novice to expert, undertaken in part by all nurses and the impact this has on individual decision-making abilities. Benner identifies intuition as a skill adopted by experienced clinicians which subsequently reduces reliance on the use of analytical skills as it draws on the 'art' of nursing rather than the science behind it. Lynecham et al (2008) consider that intuition used in this way by experts can be classified in three stages. Firstly, *cognitive intuition* requiring a conscious processing and subsequent rationalisation of the information. *Transitional intuition* follows, implying a physical sensation or change in behaviour. Finally, *embodied intuition* sees individuals begin to trust their own instincts and make decisions based on this. This suggests a very individual approach and adoption of

intuition and one that cannot be generalised as individuals require a degree of self-awareness to be able to work through these stages.

Accepting that the concept of intuition can be difficult to comprehend, so can the definition of 'expert' in terms of clinical practice. In order to reach the expert stage Benner (1982b) maintains that everyone, irrespective of education and training, is required to move along a knowledge continuum and she acknowledges that this occurs at differing rates. English (1993) challenged Benner's work drawing attention to the lack of clear definition of what an expert nurse is, suggesting the term is both difficult to recognise and articulate. Additionally, it cannot be assumed that experience will translate into expert knowledge, despite extensive length of service or clinical practice. In fact, a nurse may be regarded as an expert in their field of practice but a novice prescriber. This triggers a dichotomy of expectations from these roles, subsequently challenging the individual's decision-making.

There are other situations that may also prevent transition from novice to expert. These include a lack of opportunity to develop knowledge, a lack of individual insight into the requirement for knowledge acquisition or the adoption of habitual practice. For this reason, intuitive decision-making alone is perceived as an unreliable anecdotal and unscientific method (McCutcheon & Pincombe 2001) and something which Thompson et al (2002) maintain is also impossible to communicate to others via knowledge exchange. In relation to nurse prescribing the role of intuition must be balanced with objective information to ensure that risks are minimised, and evidence-based guidance

is considered. Where intuition may be more effective for prescribers, is in the intuitive nature of addressing potential compliance or concordance with treatments relying on more subjective data. Intuition alone is not suitable for prescribing practice and therefore other models and theories require consideration.

2.2.2 Experiential Learning Theory

Experiential learning theory (ELT) does not rely on intuitive practice. Identified initially by Kolb (1984) this theory recognises the importance of experience in the creation of new knowledge. Several authors have since shared the view that experience is key to learning (Boud et al 1993, Gass 1992, Keeton & Tate 1978). Beaudin and Quick (1995:2) describe experience as '*learning by doing'* or *'a hands-on approach'.* Kolb's (1984) earlier work considered that learning is formulated from a combination of abstract conceptualisation, reflective observation and active experimentation and not just founded from concrete experience.

Using prescribing as an example, observation and practical experience combined with reflective practice should provide modes of effective learning. Learning in clinical practice, however, is not always equitable as the opportunities themselves will differ. All clinical environments should provide some learning opportunities, although these will vary significantly dependent on the patients, the environment, and the support available from colleagues, making experience a variable commodity. For experiential learning to be effective it must therefore include a process of human adaption to the social

and physical environment to enable this to be translated and modified for use. The above theories have aligned to nursing specifically, yet there are others that will more naturally align to a medical role. Since prescribing was predominantly within the medical domain a review of these is appropriate.

2.2.3 Hypothetico-deductive theory

Analytical rational theory or hypothetico-deductive theory is associated with the application of statistics and relies on probability to inform outcomes according to Edwards (1954). With its origin in medicine, this is one of the most influential theories in relation to clinical decision-making (Bjork & Hamilton 2011) and according to Banning (2008) and Thompson (1999) is reported to promote evidence-based practice in healthcare. Following rational logic to recognise and interpret cues, this multi-staged approach promotes the generation of hypotheses (Tanner 1987, Elstein & Schwarz 2002). This theory assumes that all clinicians follow a rational and logical process and can identify factors such as clinical findings that may affect their decision-making.

Buckingham & Adams (2000) consider that a hypothetico-deductive approach can effectively be applied to nursing. The approach requires hypothesis generations based on diagnostics. Relating this to prescribing, the assumption here is that all clinicians have diagnostic ability or utilise this approach within their consultations. Elstein & Schwarz (2002) suggest that the testing of a hypothesis in this way, is unlikely to take place, particularly with individuals who have a mastery of their subject area and extensive experience of familiar situations. This is assumed to be related to their ability to accurately recall

similar occurrences and adopt a pattern recognition behaviour. Pattern recognition of this kind should be used with caution, however, to prevent a potential reliance on faulty cues and sound memory or what can be described as the human factor element of error or assumption (Banning 2007). Nurse prescribers within specialist roles may well fall into this category. There are, however, notable weaknesses to the hypothetico-deductive model being applied to prescribing decision-making. The first relates to the time-consuming nature of the process. If this were used for each presentation without the benefit of experience or intuition it would prove impractical and heavily resource intensive. The second relates to the lack of potential for variance based on individual patient factors. This suggests that this theory may not be an appropriate one to apply to nurse prescribing.

2.2.4. Behavioural decision theory - (cognitive continuum theory)

Behavioural decision-making based on Brunswick's probability functionalism (1952) is yet another framework or theory for decision-making which, according to Offredy et al (2008), illustrates the benefit of consideration of both cognition and context. The work undertaken by Brunswick was further developed by Hammond in 1980 producing a middle range theory now defined as 'cognitive continuum theory'. This dual process theory utilises both intuition and analysis and refers to a quasi-rational cognition where task related processes are linked to reasoning (Bjork & Hamilton 2011). This combination of intuitive and analytical methods has also been effectively applied to

medicine. Hamm (1988) later developed this into a six-stage approach as seen in Appendix 1. This would offer an appropriate framework for nurse prescribing as it amalgamates clinical experience and pattern recognition, with the ability to critically analyse information presented, in order to make safe clinical judgements. In 2008, Standing revised Hamm's (1988) model of cognitive continuum (Fig 2.1), to further improve its relevance to nursing, suggesting a face to face approach rather than a research-based approach as in the earlier model.

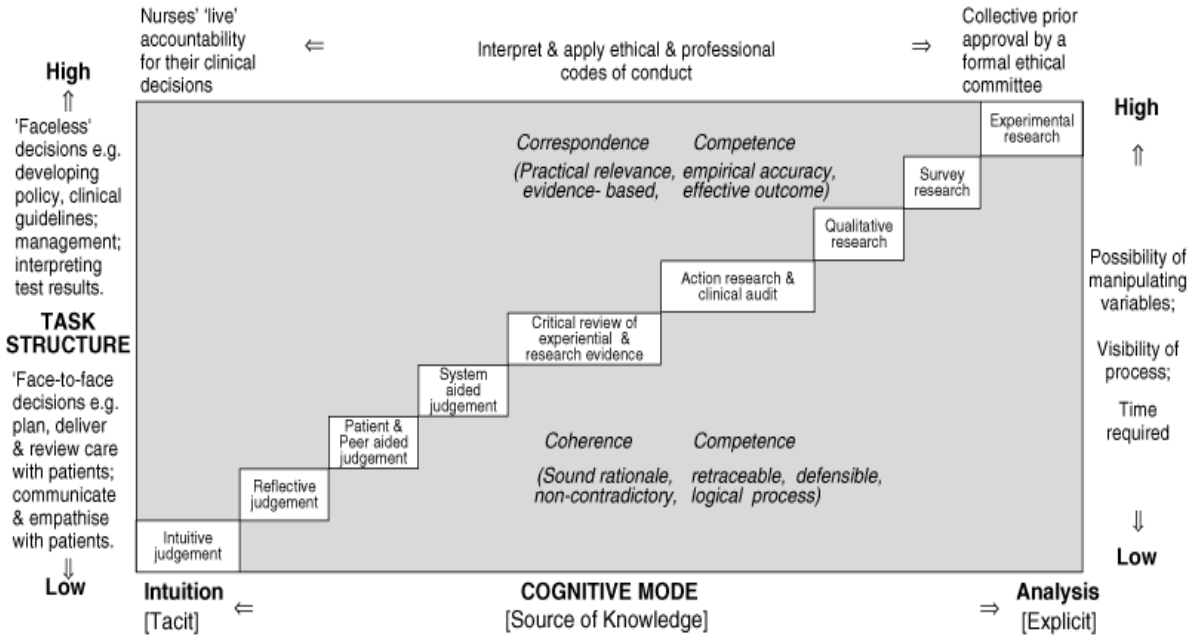


Figure 2.1. Revised cognitive continuum (Standing 2008:130)

Many of the changes to the nomenclature also provide a greater relevance to clinical practice. The inclusion of the term competence is, however, not discussed in its application or assessment and requires further understanding. This model does appear to be one that could be effectively used in the context of nurse prescribing.

2.3 Summary

It is acknowledged that clinical decisions are made in practice daily, and the consequence of these decisions affect direct patient care (Muir 2004). Clinical decision-making is a complex process that requires the application of knowledge, problem solving skills and identification of risk, whilst considering probability (Hajjaj et al 2010). The literature confirms that clinical decision-making stems from reflective practice and the ability to learn from previous experiences (Jasper et al 2013, Standing 2008) although these are not the only factors. McCaughan et al (2005), Hajjaj et al (2010) & Kilpatrick (2012) all agree that clinical decisions are not purely focused on clinical findings but are affected by non-clinical factors such as individual behaviour which can have a significant impact on decision-making (Arnold and Straus 2005). Whilst decisions may be influenced by several intrinsic and extrinsic factors there is a need for a recognition of how such influences affect scope of practice and competence.

There are no agreed models to support clinical decision-making in prescribing practice, although a combination of analytical and intuitive models is commonly adopted by nurses generally (Standing 2008, Hammond 1980, Bjork & Hamilton 2011) and could be successfully utilised in this area of practice. The model developed by Standing (2008) could be appropriately adopted although it is important to understand how decision-making interfaces with

prescribing practice and this will be considered against the findings of the study in chapter 7. The following chapter will therefore review relevant and contemporary literature relating specifically to nurse prescribing and decision-making.

Chapter Three: Literature Review

3.0 Introduction

This chapter will provide a comprehensive appraisal of the relevant literature related to decision-making and nurse prescribing. Using a systematic approach, thematic analysis and synthesis of findings, the review will identify the significance of further study. An integrative review was adopted for this purpose. Whittemore & Knafl (2005) recommend this as an appropriate method to provide a comprehensive understanding of current literature and to identify any gaps that require further investigation. Crombie (1996) implies that due to the large volumes of information now available, it is impossible to review all the literature that is available in electronic and hard copy format. Despite this claim, and the vast amount of literature available in the health field, it was important to ensure that all relevant information was appraised to prevent a biased or narrow perspective. As such every effort was made to review all appropriate data and ensure reliable research synthesis (Hopia et al 2016).

3.1. Purpose of the review – problem identification

Prior to commencing the literature review questions were established. The review considers all relevant literature that addresses the following questions.

Is there perceived external pressure to prescribe outside of one's scope of practise?

Does a specific role or title influence prescribing practises?

Do prescribers consider what affects their own decision-making strategies?

This integrative review focuses on literature addressing the role of the nurse prescriber in decision-making and explores what is already known about the decision-making strategies used by nurse prescribers within their role.

3.2 Search method

The integrative 5 stage review was conducted, following guidance from Whittemore and Knafl (2005). Following the identification of the problem, or in this case the research question, a staged approach was used to search and then critically appraise the literature as suggested by Cooper (2010). The focus on the findings from the literature will be used as subheadings. The review process ensured ethical consideration by the accurate reporting of primary data and the avoidance of taking the data out of context.

3.2.1 Literature Search

A search strategy was developed to identify the extent of the existing literature and the gaps in the field. The search strategy used key words and phrases which could be searched to address the research question. This approach was verified by a specialist health librarian. Specific electronic databases were chosen to reflect the health professional aspect of the literature, as this is central to the research questions and those listed below were identified as the most appropriate for this type of review. The search engines chosen were:

CINAHL plus with full text - Cumulative Index of Nursing and Allied Health Literature - the largest and most in-depth nursing research database. **Medline** - an index of the biomedical journal literature produced by the National Library

of Medicine. **PsychInfo** - the world's largest resource devoted to peer-reviewed literature in behavioural science and mental health. **PubMed** - an American free full-text archive of biomedical and life sciences journal literature. **British Nursing Database (ProQuest)** - a full-text UK resource supporting practice, education and research for nurses, midwives and healthcare professionals. **Scopus** - the largest abstract and citation database of peer-reviewed literature including social sciences. **Internurse** - the UK's largest collection of peer-reviewed nursing content and home of the British Journal of Nursing.

The search terms were chosen as they all relate to nurse prescribing and decision-making and included either the concepts of competence, scope of practice, professional boundaries or role transition. During the process of the search, truncation was employed, denoted by an asterisk (*) which was added to the stem of a key word to identify words with different endings demonstrated in Appendix 2. Boolean operators 'AND' and 'OR' were used to include or exclude specific terms. Medical subject headings (MESH) and associated truncated terms were employed singularly or in combination to access relevant literature specifically related to the research questions. The searches produced a significant amount of results although duplication was noted within search engines. The searches were highly sensitive, using the sampling strategy, as well as the search engines. Open Theses was also accessed, as well as appropriate research papers that were cited by those papers identified in the review.

3.2.2 Inclusion criteria

1. Published primary research using a method of investigation relating to nurse prescribing decision-making.
2. Publications from 2006-2019, to capture data from the legislative change to nurse prescribing to an extended formulary (DoH 2005).
3. Geographical context of the United Kingdom only was considered, to ensure parity of legislative and professional boundaries and educational preparation.
4. Professionally or scholarly accepted literature, grey literature i.e. publications by government bodies or professional associations and seminal work.

3.2.3 Exclusion criteria

1. Exclusions included perceptions of patients, outcomes of treatments, commentaries, reviews, editorials, news, opinions, unpublished work and guidelines.

A summary of the inclusion and exclusion criteria can be seen in Appendix 3.

A commonly used visual representation of search strategies and hits is seen in the PRISMA flow diagram (2009) (figure 3.1) this represents the different phases of the iterative review.

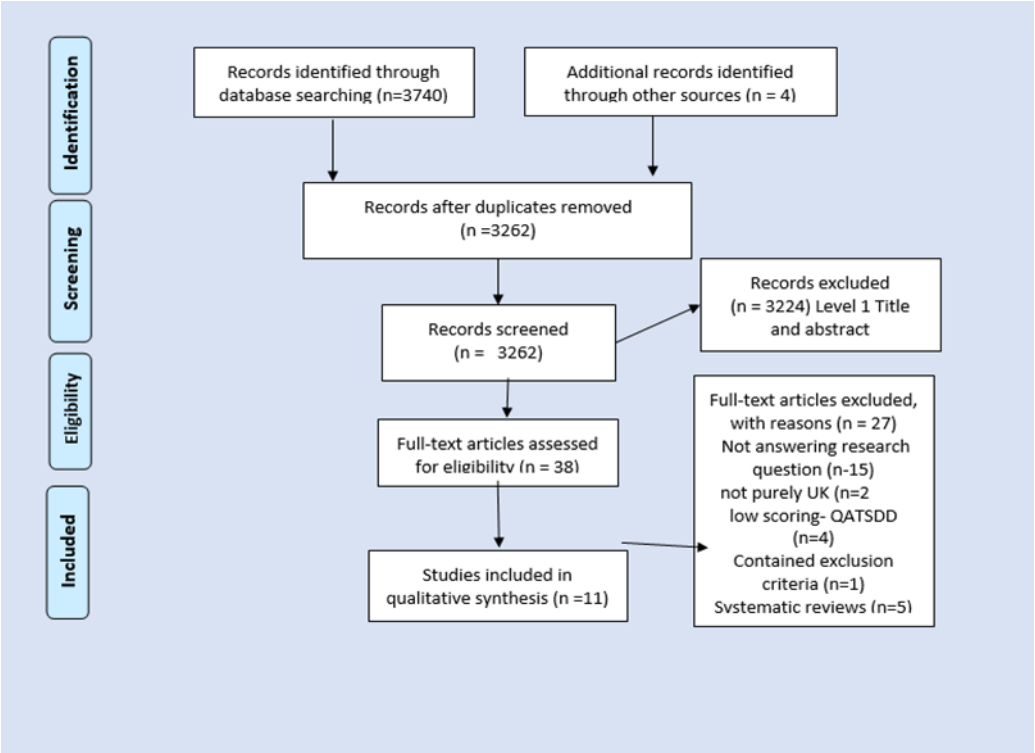
Whilst it should be noted that prescribing extends beyond nursing boundaries and occurs outside of the UK, the search was limited to UK trained nurse prescribers. This was largely due to the substantial differences in educational preparation for nurse prescribers across the world in terms of accessibility to study the course, the indicative content and the study duration. Governance

arrangements for prescribing outside of the UK are also variable, with Finland still utilising a system that is similar to the now outdated process of supplementary prescribing (Hopia et al 2016). This may be due to newness of the prescribing role. A further rationale for reliance on UK data, relates to proposed changes to UK prescribing practice by the NMC. This proposal also sees the potential of preparation for prescribing for newly qualified nurses (NMC 2018). Whilst this study commenced before these changes to prescribing practice were approved the outcome will be used to provide education providers and clinical practice staff with contemporary views of current prescribers in the field.

The study did not consider the wider medical prescribing practices, as again educational and clinical preparation for medical colleagues differs considerably and a true comparison cannot be achieved.

Undergraduate training for doctors is significantly longer, and the training embeds assessment and therapeutics which differs to traditional nurse training. Lim et al (2018) suggests that despite this additional component the application of therapeutics is still lacking in medical training. This they associate with the higher number if medication errors recorded. The impact of the search restrictions will be considered in the discussion within chapter 7 along with their relevance to non-UK practice and the wider prescribing fraternity.

Figure 3.1 PRISMA findings



The numeric data within the diagram represents the number of potential sources identified at the various stages of the literature search and the screening process leading to the inclusion or exclusion, against the predefined eligibility criteria. The process culminated in the final inclusion of a total of 11 papers for synthesis.

3.3 Quality assessment

The literature reviewed demonstrated a growing interest in the broad subject area of non-medical prescribing since early inception in the 1990s. The research reviewed was predominantly qualitative data and despite the limited number eligible, those reviewed were conceptually rich and offered important insight into the phenomenon of nurse prescribing. This literature was initially

read for sense checking and familiarisation and then each paper formally appraised. There are several grading or appraisal tools available to appraise qualitative data (Walsh & Downe 2006), the one chosen allows the scoring of papers with numeric values to add a quality assessment value. A framework developed by Caldwell et al (2011) which uses numerical value against 18 questions was used. Each of the statements offers ratings on a scale of 0= no evidence, 1= partial evidence and 2= full details. The maximum score available for each paper was 36 (Caldwell et al 2011, Bettany-Saltikov 2012). An example of the scoring process can be seen in Appendix 4.

The papers were reviewed by the lead researcher and then appraised by an independent experienced researcher to review the scoring for consistency and accuracy. Overall, the papers were of moderate quality. There were 4 low scoring papers (Crew 2010, Dobel-ober et al 2010, Weglicki et al 2015 and Wilson et al 2012). The low scoring papers with 25% or less of the overall potential were removed from the review process as they were deemed to have significant flaws which would affect credibility and transferability, although are acknowledged in the original data set. There was one high scoring paper with 72% (Adigwe 2012).

Data extraction from each study included the collation of publication dates, authors, study site and research methods using a thematic analysis. This required the reviewer to focus this stage of the review on the identification of the emerging themes and patterns noted from the data reviewed. Each paper was appraised independently by the researcher reporting the aims, objectives

methods and study findings. Of the 11 papers included in the literature review, 4 (36%) were from 2006-2011 and the remaining 7 (64%) were published within the last 8 years, 2012-2019.

The information was then collated into a data extraction template for thematic analysis as indicated in Appendix 5. The papers are presented in alphabetical order and include a summary of the methods used, number and type of participants, key words and findings and the usefulness of the paper in relation to this study.

3.4 Data analysis

The analysis of the data follows the approach of Whittemore and Knafl (2005) based on a process of organisation of the available data, coding and categorization followed by a summary addressing the research questions. The analysis identified 16 emerging topics or subthemes. The subthemes itemised in Appendix 6, were then collated into a list in order to record the frequency of their occurrence although this was not the only reason for the noting of a subtheme. The subthemes were also based on the relevance to the research question. The emerging subthemes incorporated factors that could be considered as influencing a prescriber's decision-making or were identified as barriers or enablers of prescribing practice. The authors are again listed alphabetically, although the subthemes are not presented in any order. An 'x' is used to identify if the subthemes appeared in the findings of the studies and

the total number of studies identifying the subthemes is recorded numerically in the final row.

The subthemes were then reviewed and collated considering similarities of topic area or subjects, or by way of association. The grouping of similar subthemes together led to a further review which culminated in the classification of three overarching themes as indicated in table 3.1.

Table 3.1 Literature review overarching themes

Theme heading	**Subthemes**	**Papers**
1.0 Perception of competence	1.1 Knowledge and skills	1,2,4,6,9
	1.2 Experience	1,2,10
	1.3 Confidence	1,4,5,6,8,9,10
	1.4 Education	4,5
	1.5 Continuous Professional Development	2,5,
	1.6 Competence	1,3,5,7,8,9
2.0 Jurisdiction and control	2.1 Protocols/Guidelines	10,11
	2.2 Boundaries/governance	3,8,9
	2.3 Formulary	2,3,5
	2.4 Self-regulation	2,3,5,8
3.0 Prescribing in context	3.1 Patient safety	10,11
	3.2 Pressure to prescribe/influence of patients	2,4,8,10
	3.3 Clinical decisions/ Risk	1,7,8,11
	3.4 Attitudes /Culture	2,8
	3.5 Relationships/ support	1,2,3,4,5,6,11
	3.6 Influences	2,4,9,10

This table lists the subthemes included in each overarching theme and the papers that addressed the subthemes within their findings. The papers are identified numerically based on the number assigned from the previous alphabetical ordering as seen in Appendix 5. The three overarching themes will be used as headings for the subsequent analysis of the literature.

3.4.1 Perception of competence

3.4.1.1 Competence and its link with education knowledge and skill

Subthemes which are reported to impact on the development of prescribing competence and identified in the literature review include education (Downer & Shepherd 2010, Herklots et al 2015), knowledge and skills (Abuzour et al 2018a, Adigwe 2012, Downer & Shepherd 2010, Latham & Nyatanga 2018 & Offredy et al 2008), continued professional development (CPD) (Adigwe 2012, Herklots et al 2015), experience (Abuzour et al 2018a, Adigwe 2012, Philip and Winfield 2010) and confidence (Abuzour et al 2018a, Downer & Shepherd 2010, Herklots et al 2015, Latham & Nyatanga 2018, Maddox et al 2016, Offredy et al 2008, Philip and Winfield 2010).

Six empirical studies were identified that specifically focused on nurse prescribers' decision-making and the relationship to knowledge and skill development and education and how these are translated into competence. These include Abuzour et al (2018a), Adigwe (2012), Downer and Shepherd (2010), Herklots et al (2015), Latham & Nyatanga (2018) and Offredy et al (2008) and these will be appraised alphabetically.

In the study undertaken by Abuzour et al (2018a), a qualitative methodology was employed to understand how eleven nurses and ten pharmacists made decisions in predetermined prescribing scenarios. Purposive sampling was used to select nurses working in an acute care environment. The rationale for selection related to prescribers' access to medical notes and laboratory results, which was deemed to be important in decision-making. It is unclear why those staff working within general practice environments were not included, as the same availability of information would be afforded to prescribers working in this area.

Purposive sampling criteria specified the requirement for active prescribing, which was determined as prescribing at least weekly. There was, however, huge variation in the frequency and amount of prescribing, ranging from one item per week to seven hundred per week. The latter seems hugely excessive, although there was no rationale for this variation. A think aloud method with a semi structured interview was used, undertaken either face to face or over the telephone. The rationale for the think aloud method, was to allow interviewees the opportunity to verbalise their thoughts and allow the researcher to better understand the participants' cognitive thought processes.

The scenarios used in this study were taken from an existing postgraduate examination for pharmacists and deemed suitable (Abuzour et al 2018a). It is difficult to establish if this had any bearing on the responses, as the study included both nurses and pharmacists, with pharmacists previously exposed to

this type of scenario in their training thereby reducing parity. Semi-structured interviews followed to elicit more detailed information from the respondents.

Abuzour et al (2018a) defined decision-making as a decision to treat, and a complex process, influenced by knowledge and skill. The process of reaching a decision for those involved was often not an autonomous one as respondents had trouble mastering the complexity of data from the vignettes, reporting that they would normally seek further guidance from a multi-disciplinary team before making a prescribing decision. Abuzour et al (2018a) also reported a lack of physical assessment skills by pharmacists who attributed this lack of skill as outside of their role. There is no indication if similar findings were noted from the nurses within this study.

Nurses' self-perception of competence in areas related to assessment of physical health and their knowledge of medication, related favourably to specific diseases. The findings of Abuzour et al (2018a) report prescribing generally as challenging and working within competence as difficult to maintain, specifically when working with patients with complex health needs. The overall findings demonstrated the influence of knowledge, skill, and attitudes on decision-making as well as the need to establish one's own scope of professional practice. There was no formal consideration of the effect of experience in this process. The limitations of this study related to the perceived lack of in-depth contextual information from the basic vignettes. A more detailed vignette may have been more appropriate.

In the case study approach, undertaken by Bowskill et al (2012) a semi-structured interview with field notes, was used to elicit the views of twenty-six primary and secondary care nurse prescribers from a convenience sample of one hundred and thirty-eight. This followed an initial pilot study with two nurse prescribers. Establishing whether these interviews were used as part of the final data collection is difficult. The sampling of interviewees from a matrix identified several diverse roles across nursing, midwifery and health visiting. It is unclear what the pool of potential candidates was, for example one midwife was interviewed but there is no indication how many had trained during this time and might have been eligible for selection.

Of the twenty-six participants, twenty-four were female, all qualified independent supplementary prescribers and were working for one of five local NHS Trusts within South Derbyshire. All had trained at one Higher Education Institution (HEI) during a period of three years. The time from qualification ranged from seven months to twenty-six months. Twenty-one of those were regularly prescribing with the other five citing a variety of reasons for non-prescribing including role change, and lack of desire to take on the responsibility. The majority of those interviewed by Bowskill et al (2012) were working in primary care environments.

Most had self-restricted prescribing authority which relates to their individual choice of prescribing remit rather than one imposed by their employer. Restriction and self-regulation were reportedly based on perceived competence, medical formularies and those well-known patients. This

compared to those working in secondary care where restricted formularies were reportedly imposed by their employing organisation, irrespective of whether there were legislative or professional boundaries in place. There were, however, only three nurses interviewed who were working in a secondary care environment so the findings cannot be generalised. The use of formularies was deemed in these situations to mitigate risk. Bowskill et al (2012) address three themes from a list of twelve broader themes which were identified from the study. It is unclear what the broad themes were or how the grouping was decided. Along with caution in prescribing practice, support featured highly in the findings of this study and particularly in relationship to the development of trust between NIPs, managers and medical colleagues. Bowskill et al (2012) report that trust has a direct effect on the decision-making practices of nurse prescribers and perception of competence develops because of increased confidence. Other limitations of this study relate to the single HEI for prescribing preparation and the narrow geographical location.

Conversely, in their phenomenological study Downer and Shephard (2010), explored the experience of prescribers via a face to face conversational interview method, to illicit the views of eight district nurses. This use of conversational interviews can lead to a variable discussion as there is no guidance from predetermined questions to guide the discussions. Purposive sampling was used to select the participants although the detail of how this was approached is unclear, other than stipulating the requirement for active prescribing for a minimum of twelve months within their district nurse role.

The duration of prescribing varied from one to five years although the majority had been prescribing for less than fifteen months. The study focused on Western Scotland, but it is not known if the sample size was from a large pool of potential prescribers within the region or a relatively small number. It is also indistinct how Downer and Shephard (2010) decided on saturation of data collected.

The themes identified from this study were the influences on prescribing, the benefits from prescribing and the difficulties noted by the role. A lack of support was observed and the negative impact this had on prescribing practice was discussed. A lack of continued professional development to support ongoing prescribing was also mentioned. The main limitation of this study again related to the localised nature of the research, as participants had studied at only one HEI and subsequently worked within two health care trusts. A further limitation of this phenomenological study relates to a lack of clarity for how the issues of bracketing or reductionism were addressed. This is an important consideration in phenomenology to reduce bias from personal experience or previous research studies.

Seven community matron prescribers from a proposed target of fifteen were included in the study conducted by Herklots et al (2015) where a semi-structured interview method to gain prescribers' views was used. The community matrons all held an independent prescribing qualification, although it is difficult to establish if they were all independent supplementary prescribers annotated on the NMC register as (V300) or if some were independent only

annotated on the NMC register as (V200). Why only community matrons were targeted is unspecified or how the results from this study would correspond with the views from other community prescribers is vague. This small-scale study recruited from two large primary care trusts, chosen for their proximity and as such were deemed convenient. How the codes and themes from the transcribed interviews were derived is also vague. One finding of the study reported caution from prescribers to take on new areas of practice and confidence was the reason cited. All participants were recorded as regular prescribers although this term is not defined. Herklots et al (2015) reported prescribing for respiratory conditions such as Chronic Obstructive Pulmonary Disease (COPD) as common practice, by community prescribers. Conversely the management of heart failure demonstrated less familiarity and therefore a reluctance to commence new therapies for patients with this condition was noted. The cautions identified related to knowledge acquisition, confidence and support from peers and colleagues, findings also recorded by Bowskill et al (2012). The limitation of this study relates to the small participant group size which only focused on community matrons, limiting the potential for involvement from other experienced community prescribers or those with alternative titles.

Like Downer and Shepard (2010), Latham and Nyatanga (2018) also used interpretive phenomenology to explore the lived experiences of clinical nurse prescribers, prescribing independently for palliative care patients. All participants had a minimum of six years' experience in the field although the

time since qualification ranged from less than two years to ten years. Purposive sampling was used to recruit ten suitable prescribers from across thirteen hospices within the West Midlands region in order to reduce the risk of geographical bias, although only six were interviewed. It is not clear why only hospice prescribers were considered, as palliative care specialists are also community and hospital based.

This small study used a method of face to face semi-structured interviews to explore the experiences of prescribers in specialist palliative care roles, which will be easily accessible in the hospice environments. The interview times were variable between 35 and 75 minutes with no rationale for the differences. This is important as the variation in length can significantly affect the data collection opportunities or may show some inequity in the data collection method. Five broad categories were identified from the data including perceived benefits, potential barriers, the impact of prescribing, reflections of training and views of the role and recommendations to others. The study revealed that most respondents felt their prescribing increased at weekends when they worked more autonomously. Most reported that limiting their formulary initially was beneficial in reducing anxiety and that experience was key to successful practice. Pharmacology knowledge and lack of knowledge generally were cited as the main reasons for non-prescribing within this group. Limitations of this study relate to how the issues of bracketing or reductionism were addressed. This is an important consideration in phenomenology to reduce bias from personal experience or previous research studies.

Conversely, a multi-method approach was used by Offredy et al (2008) in the form of a semi-structured interview and the use of patient scenarios to understand why nurses do or do not prescribe in each situation and the decision-making behind this. The study was an exploratory one, testing the usefulness of scenarios in addressing prescribing behaviour. Four previously validated scenarios authored by Sodha et al (2002a) were used with permission, along with Sodha's (2002b) predefined rating scale, that had also been previously validated. Purposive sampling was again used to ensure a variety of roles and experience. Eighteen prescribers were interviewed and seven who were undertaking a prescribing qualification hence were not active prescribers. It is unclear why the latter were included in the study or what value they added to the data. Prescribers were based in both primary and secondary care settings. The amount of prescribing reported varied, with those working in primary care, prescribing more than their counterparts in secondary care. Offredy et al (2008) attributed this to a good working relationship with medical colleagues. There were several prescribers who failed to make a prescribing decision and reported that they referred on, for a medical opinion, reporting a lack of competence or confidence due to lack of pharmacology knowledge. This is a situation also observed by Abuzour et al (2018a). Offredy et al (2008) reported the lack of research focus on the pharmacological base of prescribers, and how the assimilation and retention of knowledge affects prescribing decisions and suggests this as an area for future study.

The findings from Offredy et al (2008) identified that most respondents were unable to offer appropriate advice related to medications and would use medical colleagues for support. This was an early study conducted when prescribing was in its infancy and if the study were to be repeated today the responses might be significantly different. A limitation of this study was its inclusion of prescribers currently completing the course as their baseline knowledge and experience could not be equitable.

Six qualitative studies identified education as one component to the development of prescribing competence. It can be established from these that professionally guided education, and the development of pharmacological knowledge, is one element of preparation that nurse prescribers recognise as impacting on their confidence and competence to prescribe. The demonstration of competence is a requirement of the Nursing and Midwifery Council Standards of Proficiency for Nurse and Midwife Prescribers (2006, 2018) and forms a prerequisite to prescribing registration. Despite this standardised education programme, the perception of competence of those completing the course remains variable and further insight into the basis of this is required.

3.4.1.2 CPD and its impact on competence

Whilst the previous studies highlighted the importance of underpinning knowledge, skill and education it is the focus on continued professional development which is seen in the findings from Adigwe (2012). In a study which formed part of his PhD, Adigwe (2012) also used a mixed method

approach to elicit the experiences of prescribers managing chronic pain and the views of the patients that they treated. Twenty-two face to face interviews were undertaken with prescribers to generate a theory which was then tested by an online survey. The prescribers identified were all independent nurse or pharmacy prescribers who had studied at the same HEI and were working within a defined geographical region. It is unclear why other allied health professionals (AHPs) were not included in the interview phase as they were included in the survey. The participants were selected via a mixture of theoretical and purposive sampling to ensure that enough respondents had experience in prescribing in chronic pain.

The qualitative methodology focused on exploring participants' experiences to generate a theory which was tested by a quantitative methodology. This mixed method approach was adequate to consider the management of chronic pain and to review the differences, if any, between nurse and pharmacist prescribers. The benefits of interviewing patients within this study cannot be established, neither can the inclusion of their views in the findings. Patient experiences of non-medical prescribing were limited, and the majority were elderly females, so a true representation of the patient population was not possible. The findings from the interviews identified safety and support as two key factors in prescribing decision-making. What was also evident was the importance of knowledge acquisition and the maintenance of knowledge for prescribers to feel safe, a finding also noted by Abuzour et al (2018a).

Adigwe (2012) used a web-based survey as opposed to a more familiar postal questionnaire, however a completion rate of 33% was achieved. Most of the respondents were nurses which is unsurprising, as this is the largest cohort of non-medical prescribers according to Cope et al (2016). Adigwe's (2012) results suggest that less than half of the respondents had prescribed for chronic pain and as this was the focus of the study the relevance of this data is unclear. The results of the survey did, however, validate the interview findings noting safety to be a key factor in prescribing practice. The survey identified a lack of experience of the condition itself or the medication as a distinct barrier to prescribing. This survey was only locally distributed and therefore national generalisability cannot be assumed.

This study had some limitations, firstly the reliance on recall of the participants to remember the examples of practice and to discuss them accurately. Secondly most of the participants were nurses and as such generalisation into other prescribing roles is difficult. Thirdly the use of a mixed method approach is resource intensive with relation to time, manpower and cost.

It can be seen from this study that a requirement for CPD post-qualification is evident yet a greater understanding as to the specific nature of CPD needs is required.

3.4.1.3 Confidence and its link to competence

Finally, incorporated in the theme of competence is the perception of confidence. A lack of confidence was identified as a major barrier to

prescribing. Confidence is reported to be directly influenced by support, training, sound knowledge base and CPD. Five of the studies reviewed recorded the lack of confidence as a barrier to prescribing (Abuzour et al 2018a, Herklots et al 2018, Maddox et al 2016, Offredy et al 2008, Rowbotham et al 2012). The development of confidence goes hand in hand with practical experience and therefore, in areas where prescribing is encouraged with supportive arrangements, prescribers appear to flourish (Bowskill et al 2012).

Maddox et al (2016) used a qualitative study, to consider the views and experiences of fifteen nurse prescribers and five pharmacist prescribers, working in either primary or community settings, using a critical incident technique and open question interviews. The proportion of pharmacists to nurses recruited represented the proportion trained at this time. Recruitment was via snowball sampling and ceased when saturation of themes had been met. The clinical experience of the respondents was variable ranging from less than four years to more than ten years. It is less clear as to the prescribing experience of the participants, as fourteen had less than six years, but there was no breakdown of this. The findings suggest a strong affinity to confidence and perceived lack of competence and its relationship to a reluctance to prescribe. What was also noted, was the lack of continued education and how this was related to further competency development. A limitation of this study relates to the requirement for a predetermined critical incident to be identified prior to the study. This gives the respondents time to prepare their answers which may make their responses potentially selective.

The study undertaken by Philip and Winfield (2010) again used a qualitative approach using a semi-structured in-depth interview method, to understand the prescribing practice of nurses specifically in relation to the treatment of *otitis media* in general practice. The recruitment for the interviews used was intended to be purposive sampling to meet the predefined inclusion criteria. This purposive method would seek to select prescribers who had completed the Royal College of Nursing (RCN) nurse practitioner training (RCN 2012). It is unclear how this was determined from the pool of practice nurses or the number of potential interviewees. It is also unclear what the specific reason was for the RCN accreditation or how this was determined. Interested participants were required to send back a response slip to show their intertest this may now seem antiquated in the digital age but was highly appropriate nine years ago.

From the response rates eight interviews were completed although these were relatively short ranging from thirty to forty-five minutes. The location of the interviews and the demographics of the participants is hazy as is the background to their prescribing practice. Respondents were unclear about the evidence base behind the protocols or guidelines causing them to vary their approach. The wide range of available guidance to support individual prescribing practice was also noted as having the potential effect on prescribing decision-making as clinicians were faced with a choice of guidance from local and national sources. This choice required prescribers to make several decisions and it is these decisions that may not be underpinned with

evidence base or decision-making theory. The findings identified that confidence affected decision-making, but this related to the term *comfort with prescribing practice* and was linked to knowledge as well as experience although the influence of clinical guidelines featured significantly.

It can be seen from the studies above that sound knowledge base, ongoing CPD, experience and confidence all affect prescribing practice and the perceived competence of nurse prescribers. A perceived lack of knowledge is reflected by the high referral rates for support from medical colleagues and is indicative of a lack of competence. These studies all suggest that improving competence requires a sound knowledge base, ongoing training opportunities and support in practice which then translates into confident prescribing practice. The studies do not, however, identify the entry levels of clinicians or their confidence attributed to their readiness to take on the prescribing role based on their assessment and diagnostic ability.

3.4.2 Prescribing in context

The theme prescribing in context addresses several subthemes that have a more subtle effect on nurse prescribers' decision-making. These themes relate to support and relationships in practice (Abuzour et al 2018a, Adigwe 2012, Bowskill et al 2012, Downer & Shepherd 2010, Herklots et al 2015, Latham & Nyatanga 2018 & Rowbotham et al 2012), influences on prescribing such as peer and patient pressure, (Adigwe 2012, Downer & Shepherd 2010, Herklots

et al 2015, Latham & Nyatanga 2018, Maddox et al 2016, Offredy et al 2008 & Philip and Winfield 2010), attitudes and culture (Maddox et al 2016) and patient safety and risk (Abuzour et al 2018a, Maddox et al 2016, Rowbotham et al 2012, Philip and Winfield 2010).

Professional relationships and support in practice is evident from the studies reviewed, with 58% recognising its importance and direct effect on individual practice (Abuzour et al 2018a, Adigwe 2012, Bowskill et al 2012, Downer & Shepherd 2010, Herklots et al 2015, Latham & Nyatanga 2018 & Rowbotham et al 2012).

Prescribing safely was a key finding in the study undertaken by Latter et al (2007b). They used data collected from a large national study (Latter et al 2005) focusing on the expansion of prescribing in England to review the quality and safety of nurse prescribers. The national study was undertaken in two parts, firstly via a national postal questionnaire followed by case studies of prescribing practice. Latter et al (2007b) used data from phase two only. From the initial large-scale study purposive sampling was used to identify respondents who met specific criteria related to frequency of prescribing and the prescribing of antibiotics specifically. At that time prescribing was relatively limited (DoH 1999). From a potential of fifty-one nurses meeting some of the selection criteria, six were selected as they met all criteria. A further four were added later although fourteen prescribers were observed in the ten test sites chosen. The study included non-participant observation of a minimum of ten consultations per nurse, using a structured observation schedule based on the

National Prescribing Centres' framework (2001). Observations of practice were undertaken (one-hundred and eighteen consultations), followed by a documentary analysis. As this method of observation had not been employed before with nurse prescribers it required the creation of an assessment tool which was self-evaluated during a pilot stage (Latter et al 2007b).

This study does have several potential limitations in that it assumes the competency of the observer in all areas of practice observed. It is also limited to prescribing via the nurse prescribers formulary (NPF) and therefore the prescribing opportunities would be limited. Full competency could not be assessed as several consultations were subsequently referred for review by medical colleagues, as the prescriptive intervention was out of the scope of legal prescribing at that time. Despite the retrospective review of the data and a pilot study to assess prescribing competence, it is difficult to determine from this study what clinical background and experience the observers had. It is also uncertain as to the basis for the observers' own decision-making, and relevance to safety of the prescribing practices or diagnostic ability of those being observed. The findings showed variation in consultation with the majority safely prescribing, although areas for practice improvements were noted. These were specifically around allergy status and understanding the concurrent use of over the counter (OTC) medications. It is unclear if the findings were fed back at the time of the consultations or retrospectively for learning to occur and practice to improve.

Adigwe, (2012), Latham and Nyatanga (2018,) Maddox et al (2016), and Philip and Winfield (2010) all report perceived pressure to prescribe from patients, peers or medical staff. Philip and Winfield (2010) report concern from prescribers feeling undue pressure from colleagues or patients. This pressure to prescribe in situations they deemed outside of their professional boundaries tested their ability to maintain safety and professionalism. This situation had also been reported by Maddox et al (2016). Peer pressure to prescribe in certain situations was noted by Adigwe (2012) and caused individuals to work outside of their role boundaries. This leaves individuals vulnerable by potentially working outside of their knowledge and skill and therefore leaves their professionalism open to question. Maddox et al (2016) also draws attention to the negative effect of organizational culture on prescribing practice with terms such as 'ground rules' used to determine what could be prescribed. Governance arrangements and prescribing boundaries are both organisationally and personally imposed.

Rowbotham et al (2012) used a semi-structured interview method to seek the views of fifteen nurses and attempted to understand the experiences of nurse prescribers and other non-medical prescribers, consulting with patients with self-limiting infections. The sample consisted of thirty-one nurse prescribers, yet how the fifteen were selected for interview and why is unspecified. The views of one pharmacist and one physiotherapist were captured in one of three focus groups for triangulation of data. It is unclear why one AHP and one pharmacist were included in the focus groups as this finding would not be

expected to be consistent from these individuals. Purposive sampling was undertaken based on location, discipline, age and care setting. This was proposed to ensure good representation from a variety of clinical disciplines, locations and care settings, although why age was specifically chosen as a consideration is not apparent. Despite the attempt to provide a variety of care settings half of those interviewed worked in an unscheduled care setting. The arrangements for the focus groups and the involvement of individuals and inclusion and exclusion criteria is vague.

The findings of Rowbotham et al (2012) suggest that most prescribers felt able to manage infections without antibiotics whilst management strategies varied with some choosing antibiotics and others not. The use of protocols was one way to manage situations with confidence, although the quality of the evidence base behind these was questioned by participants. The influence of peers and patients factored heavily in prescribing decisions. There is no clear differentiation between the findings from the allied health professional prescribers and the nurse prescribers. The limitations of this study relate to the interview process requiring participants to recall management strategies from previous consultations which requires accuracy of recall. The selection of the focus groups also included those taking part in a training intervention and therefore they may not be representative of a wider group.

It is evident from the studies reviewed that support plays a key role in the development and prescribing practices of novice prescribers and that pressure to prescribe is evident from both patients and peers. This coupled with a

variation in organisation control in the form of prescribing governance leaves prescribers vulnerable to prescribing outside of their scope of practice. Further study related to the organisation impact on prescribing practice is needed.

3.4.3 Jurisdiction and control

Seven empirical papers identified the organisational, professional, legal or self-regulatory influences on nurse prescribing practice. The organisational influences were identified as protocols or procedures for prescribing practice (Philip and Winfield 2010 & Rowbotham et al 2012), the boundaries of role and clinical governance (Bowskill et al 2012, Maddox et al 2016, Offredy et al 2008), the use of personal formularies (Adigwe 2012, Bowskill et al 2012, Herklots et al 2015) or the self-regulation imposed by the prescribers themselves (Adigwe 2012, Bowskill et al 2012, Herklots et al 2015).

One study which has notable findings related to formularies was Adigwe (2012). A critical incident component was employed, requiring participants to self-select examples of situations where prescribing had been inappropriate for reasons other than clinical. This demonstrated that most of the prescribers involved had a cautiousness to taking responsibility for prescribing, linked to fear, criticism or error and particularly with reported 'high risk groups at either end of the age spectrum' (2012:49). It is unclear what constitutes a high-risk group, however as both extremes of age pose a degree of risk and require consideration when prescribing and can therefore be challenging to manage from a medication perspective. The participants working in general practice were more likely to meet prescribing requirements across the life course

compared to their community or nursing home counterparts. All would engage in prescribing practice at each end of the age spectrum, therefore, there was a higher potential to consider these groups as high risk, a situation also reported by Bowskill et al (2012). The feeling of caution as noted is not surprising as prescribing practice by nurses at the time of this study was relatively new. The formularies used by participants were recounted by some as supportive in guiding practice, particularly for novice prescribers. Some respondents also recognised that the boundaries of their role prevented them from prescribing outside of their scope of practice, while for others this boundary was negotiated with their medical colleagues.

From the three studies documenting the variation in use and acceptance of protocols and procedures (Adigwe 2012, Philip & Winfield 2010, Rowbotham et al 2012) organisational interpretation of legal and professional guidance makes consistency of approach impossible. Adigwe's (2012) research identified that protocols developed or reviewed by prescribing leads within organisations, offered challenges as some leads are not prescribers themselves and therefore did not understand the requirements of the role. Protocols were, however, seen as restrictive (Adigwe 2012 and Rowbotham et al 2012) with some clinicians unclear about the evidence base behind the protocols or guidelines causing them to vary their approach and use (Philip & Winfield 2010). The wide range of available guidance to support individual prescribing practice cited by Philip & Winfield (2010) has the potential to affect prescribing decision-making also, as clinicians are faced with an array of guidance from

both local and national sources. This choice requires prescribers to make several decisions and it is these decisions that may not be underpinned with theory. This personal decision-making is one of many that may be considered as influenced by human factors and denoting the risk of human factor influence (Robson 2013).

While protocols have not always offered the answer for individual clinicians, formularies have been recounted as supportive in guiding practice particularly for novice prescribers (Adigwe 2012, Maddox et al 2016). The study conducted by Maddox et al (2016) identified a lack of deviation from formularies, management plans and protocols citing a lack of willingness to accept overall responsibility as a reason. Formularies were conversely seen as restrictive by others (Adigwe 2012, Herklots et al 2015 and Maddox et al 2016) restricting individual decision-making and choice. Bowskill et al (2012) related the required use of formularies in secondary care to organisational risk management and a control mechanism for restricting drug usage rather than an individual competency basis. It is uncertain if this restriction is based on lack of trust, the newness of the prescribing role or if this relates to individual roles that may only allow prescribing in specific disease areas. It is evident that self-restriction by use of personal formularies is individually imposed for some prescribers and can be viewed positively by maintaining prescribing within clinical competencies particularly in primary care settings where prescribing options are often unrestricted (Bowskill et al 2012). Despite the variability of use of formularies there is a consensus that formularies are used

as a form of governance by individuals and their employers and are particularly useful for novice prescribers to guide their practice.

This type of practice falls under the broad heading of clinical governance and is used as the vehicle by which organisations demonstrate accountability for patient safety and continuous improvement monitoring of patient care. The Department of Health (2019:1) say that clinical governance "*encompasses quality assurance, quality improvement and risk and incident management".* Overall prescribing governance is less well documented than other organisational mechanisms of prescribing control. Clinical governance focuses on risk management and therefore the process of prescribing falls within this domain.

The use of prescribing protocols is positively recalled by novice prescribers although the variation and vagueness of some guidance appears to offer little support in prescribing decision making.

3.5 Summary of review findings

The eleven empirical studies included within this review have used a variety of methods to consider the relationship of competence, confidence, scope of practice, prescribing boundaries and decision-making strategies on prescribing practice. The findings identify that there are a significant number of factors that influence the prescribing practice of nurses, including underpinning education, support, pressure to prescribe and formulary guidance all of which affect nurse prescribers' decision-making in various ways. Whilst there is

evidence to suggest that the influences on prescribing practice are external in nature there appears to be other intrinsic factors that affect prescribers' decisions that are worthy of further review.

A summary of the key findings from the literature review can be found in table 3.2 below.

Table 3.2 Synopsis of findings

Themes	Studies	Main Findings
Perception of competence	3	The perception of an individual's knowledge and competency affects decision-making and subsequent prescribing practice. - A lack of pharmacology knowledge affects the growth of prescribing practice. - Confidence and experience are instrumental in decisions to prescribe. - Knowledge acquisition and the maintenance of knowledge are key to safe prescribing. - Cautious prescribing practice is a consequence of perceived knowledge insufficiency.
Jurisdiction and control	4	There are several external influences that are deemed to affect prescribing practice. - Formularies are both supportive and restrictive. - Local governance arrangements vary significantly between organisations. - Organisational interpretation of policy is variable. - Self-regulation of prescribing practice is used to reduce risk by prescribers.
Prescribing in context	4	- Supportive peers and mentors help to develop confidence in prescribing ability. - Prescribers do not prescribe outside of their role. - Pressure to prescribe from peers and patients is evident.

This table notes the variance in local governance arrangements that affect individual practices and the inconsistencies across the country. The literature suggests that it is confidence, however, that appears to determine the decision to prescribe in many of the studies reviewed. There does not appear to be any evidence of specific decision-making tools employed to enhance decision-making by those investigated. This therefore identifies a potential research opportunity to determine how prescribers make decisions and the strategies they employ to support these decisions. The following research questions have been redefined following synthesis of the findings from the literature review.

What do nurse prescribers understand by the term 'scope of practice', and how is this professional boundary defined and adapted?

What influencing factors do nurse prescribers recognise, with regards to their prescribing practice?

What strategies do nurse prescribers employ, when making prescribing decisions?

An interpretative phenomenological study is proposed to explore the experience of prescribers and ascertain the considerations made when contemplating prescribing.

The following chapter will chart the philosophical, theoretical and methodological considerations within the research design.

Chapter Four: Research design

4.0 Introduction

This chapter will explore the philosophical underpinning of the research design used within this study and form a relationship between the chosen interpretivist paradigm and the pursuit of new knowledge. The philosophical significance of ontology (relating to the realities or truth), epistemology (relating to knowledge) and methodology as the three components of a research paradigm (Scotland 2012) will be considered. The discussion within this chapter will also explore the role of the researcher employed within this study and the use of a phenomenological methodology, drawing from qualitative data, to understand the phenomenon of nurse prescribing and its relationship with decision-making.

4.1 Theoretical underpinning

To understand the philosophical underpinning for this study a three-point methodological plan was produced, focusing on ontological, epistemological perspectives and the research paradigm which will be individually reviewed. Choosing an appropriate research paradigm requires consideration of the research procedures, the nature or type of research, the research question, the epistemological stance of the researcher and the previous practice of other researchers.

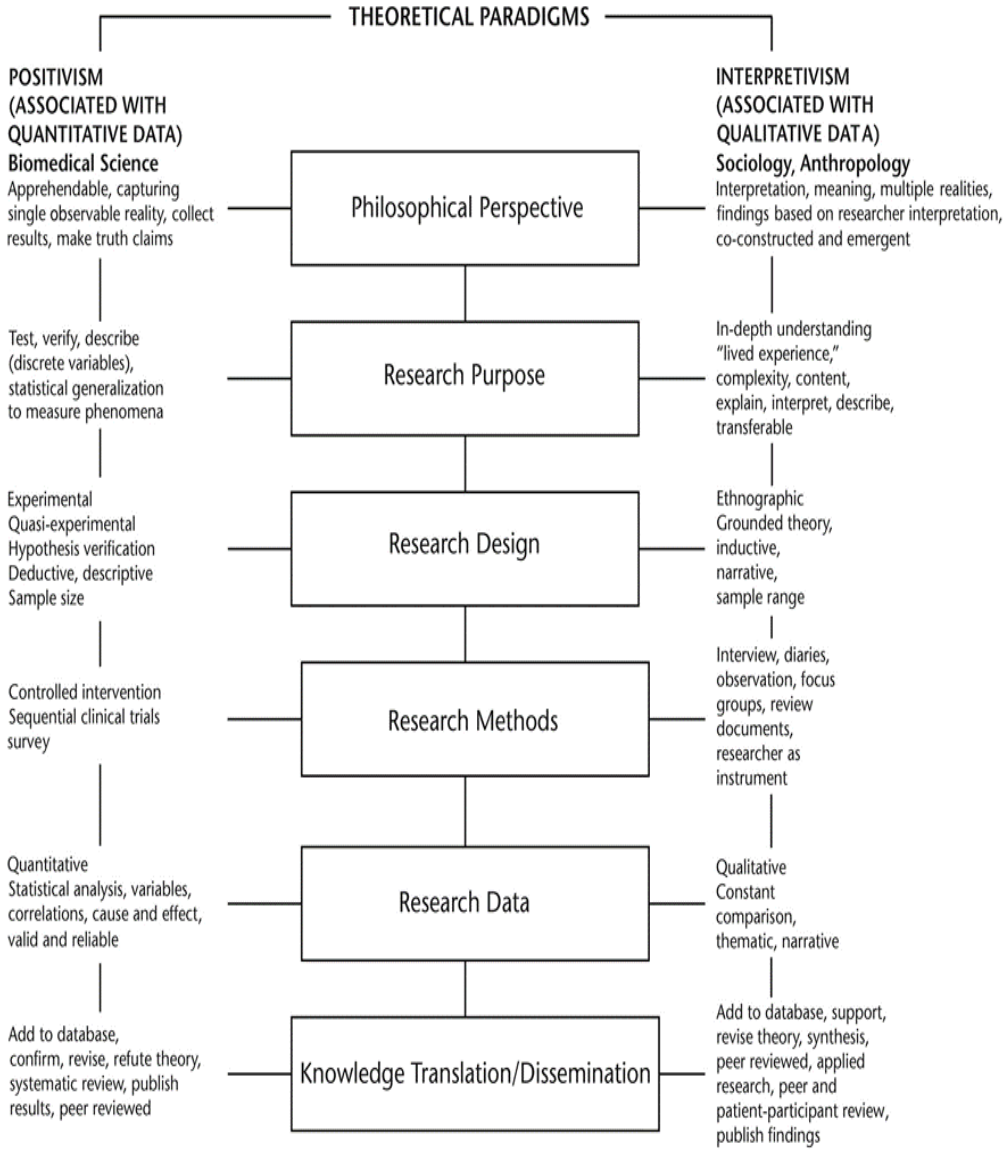
4.1.1 Research paradigms

Kuhn (1962) defines the term paradigm to explain what he describes as a philosophical way of thinking. Several authors have alluded to the potential for confusion when describing theoretical frameworks, or paradigms which have been referred to inappropriately as theories (Mertens, 2005; Bogdan & Biklen, 1998). Guba and Lincoln (1989) offer the four terms 'basic belief systems', 'world views', 'perspectives' and 'thinking' as common vernacular to describe paradigms. 'Worldview' is a recognised term within nursing research, according to Weaver and Olson (2006), although the term 'research tradition' is used as an alternative, again suggesting interchangeably with the terminology related to paradigms. It is the concept of 'world view' which will allow the researcher to effectively interpret data which is based on the shared views and perspectives of others and their personal beliefs. This will provide a conceptual lens (Kivunja & Kivunja 2017) in which to focus a choice of ontology, epistemology, methodology and method and will therefore provide the basis for what will be studied and the approach this study will take.

Guba and Lincoln (1994), remind us that paradigms can be considered from various perspectives although two main contrasting paradigms - positivism and interpretivism - will be considered, based on a model suggested by Townsend et al (2010) as demonstrated in figure 4.1. Demonstrated within this model are alternative theoretical approaches to research, comparing perspectives and offering examples of purpose, design, method and data for each. The model has been used as a guide to ensure that the chosen interpretivist

paradigm is explicit throughout the study as demonstrated by the utilisation of appropriate methodology and method. Understanding positivism and interpretivism and their value in addressing the researcher interest prompted the choice of paradigm, and a summary of both are presented.

Figure 4.1[1] Theoretical paradigms



[1] Townsend et al (2010) Illustrates examples of positivist and interpretivist approaches to research. Based on: Shepard, et al (1993)
Physical Therapy, Volume 90, Issue 4, 1 April 2010, Pages 615–628,
https://doi.org/10.2522/ptj.20080388

4.1.1.1 Positivism

Positivism is predominantly linked to natural science or studies related to biomedical science (Guba & Lincoln 1994), striving for objectivity, epistemologically and methodologically. Positivism is often associated with experimental quantitative research and often but not always relates to the generation of quantitative data. An example of where an empirical quantitative study could align to nurse prescribing would be one that relates to establishing dose titration or side effect profiling of drug therapy. Positivist research in this field would use quantitative data, designed to test, verify and describe variables which measure a phenomenon (Shepard et al 1993). As a positivist study is intended to identify a single source of reality, usually by the testing of a hypothesis, this would be an inappropriate paradigm to explore the experiences of prescribers or understand their decision-making behaviour.

4.1.1.2 Interpretivism

Conversely, interpretivism, is based on the epistemology of idealism where knowledge is viewed as socially constructed (Ritchie and Lewis 2003) and it draws its origins from Husserl's work on phenomenology. This allows socially constructed views identified from sharing situations, experiences and processes and the interpretation of these. This theoretical paradigm aligns more closely with the intended research where the objective is to consider the lived experience of nurse prescribers as they understand it and correlate this with their decision-making behaviour. Adopting an interpretative approach of this sort will allow the researcher to understand the reality of the situation by

the analysis of meaning derived interaction with participants (Townsend et al 2010).

4.1.2 Ontology

Identifying the ontological perspective of the research provides focus for the study. Ontology is referred to as the nature of being, or what is known to exist and what can be understood from this, or what O' Leary (2010) describes as what 'is real'. A broader perspective on this thinking was adopted by Savin-Baden & Howell Major (2013) who claim that ontology is the reality of relationships that exist between individuals, how those individuals interact with society and the world that they inhabit. Two ontological perspectives worthy of consideration prior to any research are realism and relativism. These are polar opposites in thinking, in that relativism is the theory and conception of ethics, moral values and truth, whereas realism seeks the absolute truth. The chosen stance for this research will take a relativist perspective. This is based on the thinking of Braun and Clarke (2013) who describe relativist researchers as having the ability to consider *multiple constructed realities.* In relation to nurse prescribing the intention of this study is to investigate how prescribers construct their own understanding of their individual experiences and competence and its correlation with decision-making. As such a range of views is expected.

4.1.3 Epistemology

Epistemology or the theory of knowledge, considers the difference between belief and opinion. Scotland (2012) advocates that this is closely linked with ontology and methodology. Crotty (1998:8), however relates epistemology to *how we know what we know,* whilst Cohen et al (2007) convey epistemology as the nature of knowing. Focusing on exploring the concept of knowledge and the differentiation between knowledge and belief provides a philosophical grounding for research, according to Guba and Lincoln (1994). In relation to this study it is how knowledge linked to prescribing is acquired and how this is interpreted along with the subsequent impact on prescribing competence that will be considered.

The intention of this study, therefore, fits with an interpretive research paradigm from a philosophical and strategic perspective. Taking the decision to follow an interpretivist rather than a positivist paradigm relates directly to the option for philosophical research over empirical, as the nature of enquiry as identified by Edwards (2001).

Having considered the philosophical underpinning, adopting an interpretivist paradigm and identified the research purpose the next stage is to consider the research design or methodology. Scotland (2012) suggests this is the third component of a research paradigm. Adopting an appropriate research methodology which incorporates a framework of expectations, procedures and methods and provides a guide for the processes undertaken by researchers

including their research methods, analysis and critique is a key component of any research study according to Dawson (2009).

4.2. Methodology

Crotty (1996) considers methodology as a strategy which underpins the choice of a research method. Guba and Lincoln (1994), however, relate methodology to understanding how a researcher investigates what they wish to know. Methodology and method are often used interchangeably, yet method is the technique used for establishing information. Adopting an appropriate methodology has been considered from a philosophical position, to maintain consistency with studies of natural science and social science in the quest for subjective knowledge.

4.2.1 Phenomenology as a methodology

Phenomenology, dating from the nineteenth century, is rooted in philosophy and social science (Fleming et al 2003). Classified by Holloway & Galvin (2017) as either interpretive or descriptive, phenomenological approaches aim to explore and describe the everyday experiences of individuals, often referred to as the 'lived experience'. Cohen and Manion (1994:36) consider this approach as allowing researchers to understand 'the world of human experience'.

Phenomenology is intrinsically linked to self (Howell 2013), and it is for this reason that it was deemed appropriate for a study to explore individual beliefs, feelings, experiences and views, by allowing the reporting of individual

perspectives and understanding of events and situations that have occurred. By inviting participants to articulate their decision-making considerations and rationales will provide individual meaning to situations. Creswell (2007) conversely suggests that phenomenology is merely a method for identifying what experiences participants have in common, in relation to a phenomenon. This is a recognised limitation of phenomenological studies according to van Manen (1990). A detailed analysis of the data focusing on the interpretation of the findings rather than on the content will aim to address this. Other methodological approaches were considered. As grounded theory focuses on theory development and usually involves a larger sample size than phenomenology it was deemed unsuitable to attribute meaning to the lived experience of individual prescribers and their rationale for clinical decision making. An ethnographic approach, observing practitioners within their own clinical surroundings was an appropriate alterative and was given due consideration. This was subsequently rejected due to the additional ethical considerations of involving patients in research and the impact this would have had on the time available to complete the study. This approach would, however, be an appropriate method to review decision-making in real time. A narrative approach was also deemed inappropriate due to the time-consuming nature of this type of study which is often conducted over a number of months or years. A case study approach would have reduced the ability to understand the research topic from a variety of perspectives across several organisations and was therefore also rejected.

van Manen (1990, 2014) believes that phenomenology relates to an individual's conscious experience and that the ability to capture the pre-reflective state, is key to seeking their true lived experience. This pre-reflective state is a sense of consciousness and awareness that individuals have before they begin their reflective journey. Gadamer (1983) shares this view, suggesting that it is impossible to understand a phenomenon without having some pre-understanding; exploring the rationale for the study with the participants and inviting open discussion will help to encourage a pre-reflective state.

van Manen (1999) records that phenomenology has been used in many studies where 'lived experience' of individuals has been the focus of the enquiry and therefore this offers some assurance that this is an appropriate research approach. Similarly, other researchers have successfully used a phenomenological approach or suggested its benefit when exploring decision-making or clinical reasoning, these include Ajjawi & Higgs (2007), Patton (2002) and Denzin & Lincoln (2000).

4.2.2 Origins and Influences of phenomenology

Phenomenology is not a contemporary research methodology, as the philosophical approach to understanding human beings, began with the original positions of Edmund Husserl (1859-1938), Martin Heidegger (1889-1976), Merleau-Ponty (1908-1961) and Karl Jaspers (1883–1969) according to Davidsen (2012). Despite Husserl being recognised as the founder of phenomenology, the term can be noted as far back as the teachings of Kant,

although it is believed by Albertazzi et al (1996) to be Franz Brentano, a much less published theorist, rather than Kant who Husserl took inspiration from.

4.2.3 Phenomenological methodological approaches

Based on its origins and founders, phenomenology can be classified by one of the following: Transcendental or Descriptive, Existential, or Hermeneutic (Kafle 2011:185). It was Edmund Husserl who developed the concept of transcendental or descriptive phenomenology purporting that '*experience is to be transcended to discover reality*' (Kafle 2011:186). This approach advocates that researchers should suspend their beliefs, in order to accurately describe the 'lived world' of others which is a key epistemological strategy (Dowling 2007). Bracketing or the suspension of judgement in this way is also described as epoché by Husserl (Moustakas 1994). The concept of bracketing was, however, challenged by Heidegger (1927) and Merleau-Ponty who suggested that it is impossible to bracket assumptions as observations of the world are made from *somewhere* (Larkin & Thompson 2012). As a novice researcher and an experienced prescriber, with over fifteen years of experience as an independent prescriber, it will be impossible to bracket personal experience, although focusing attention on the data and avoiding assumptions will go some way towards this. The implication of bracketing will be considered in the interpretation stage of the analysis.

Existential phenomenology, an approach inspired by psychologists, differs to the other schools of thought, by challenging Husserl's belief for complete reduction (Kafle 2011). This approach focuses on the study of human existence

and the description perceived by the individuals themselves in their own environment (von Eckartsberg 1998). For this reason, this was not an appropriate approach for the proposed study as prescribers would not be observed in practice but would be reflecting on previous experiences.

Hermeneutic phenomenology, conversely, is conveyed as human science with a focus on the study of people and makes use of social science techniques such as interviews (van Manen 2017). This has been referred to as the study of *'lived experience'*, or as van Manen (1984 :37) describes the '*world as we experience it'*. The approach focuses on an appreciation of a phenomenon, and what it means to an individual as an interpretative process and an insight to their life experiences. Jardine (1990) simplifies this as merely a way to give voice to a human experience. In relating this to the study the intention would therefore be to understand what it is like to be a nurse prescriber.

By adding a different dimension to Husserl's descriptive phenomenology, hermeneutics encourages the use of reflexivity, to assist individuals to self-reflect on their experiences (Holloway & Galvin 2017); although van Manen recommends that this is not merely encouraging individuals to understand their own experience as this falls in to psychology rather than phenomenology (van Manen 1997) but rather suggests it focuses on the pre-reflective and lived experiences as described by individuals, therefore close interpretation of what is said is important. This methodological approach chosen for the research study clearly aligns to the nature of the study and the desired aim.

Writings based on hermeneutic phenomenology have continued into the current century with extensive work by Gadamer (1900-2002) and Max van Manen (1942-present). Having considered several theorists at the forefront of phenomenology, including Husserl, Heidegger and Gadamer, it was the work of Max van Manen, a Dutch researcher (1990, 1997, 2000, 2006, 2014, 2017), that guided my research journey.

van Manen has the same epistemological grounding as Heidegger (Laverty 2003) in that their focus was in understanding the lived experience, rather than seeking absolute truth. He also observes phenomenological engagement and personal engagement, endorsing the situation that the researcher cannot be fully divorced from their research, and therefore cannot bracket their experiences as is suggested by earlier writers such as Husserl. van Manen's work *Researching the Lived Experience* (1990) contrasts also with Heidegger's work, by offering a practical research guide rather than a pure theory. Van Manen does, however, advocate reduction or what is described by Parse (2001:79) as "the process of coming to know the phenomenon as it shows itself as described by the participants" and this requires the researcher to be as unprejudiced as possible (Dowling 2007).

A hermeneutic phenomenological framework using the lens of Max van Manen, was chosen for two reasons; firstly, he writes from a pedagogical stance which relates well to my own academic background and understanding of teaching and learning. Secondly, he has completed a significant amount of research in

the field of health sciences, particularly nursing and psychology which again has similarities to the proposed research.

A hermeneutic phenomenological methodology (van Manen 1984) was chosen to explore the experiences of nurse prescribers. van Manen (1996) asserts that this approach allows the presentation of a range of human experiences and an opportunity to identify how those experiences are reported by individuals and the language they use to describe it, suggesting van Manen's appreciation of both descriptive phenomenology and interpretivism/hermeneutics. It also recognises the value that individuals put on their experience. van Manen's methodological outline, from his work *Practicing Methodological Writing* (1984) (Appendix 7), identifies the four key areas to consider, which are mapped to the research journey.

The initial focus was to *turn to the nature of the lived experience* requiring the development of a research question based on a sound understanding of the topic area of prescribing. This would lead to the second stage *existential investigation* with the collection of data offering caparison to previous literature and the reporting of findings. The third stage requires *phenomenological reflection*, focusing on the analysis and synthesis of the identified themes which will be reported in Chapter six. The fourth and final stage of *phenomenological writing* will address the findings of the study and these will be considered in the discussion chapter seven. Having identified a phenomenon worthy of research and formulated research questions and

selected a methodological approach, the existential stage of investigation (van Manen 1984) began with the generation of data.

4.5 Sampling strategy

Deciding on the appropriateness of the sampling strategy was the first stage of the investigation. Holloway and Galvin (2017) advocate choosing a method of sampling that fits the nature of the study and to ensure that a phenomenological basis is maintained the participants involved must understand the phenomenon in question. In view of this, selecting current nurse prescribers would therefore be essential. The sampling methods available to recruit suitable participants were therefore considered. There are several non-probability sampling methods which are suitable for qualitative studies (Etikan et al 2016). These are represented in Table 4.1 below, although only purposive sampling will be discussed as it is relevant to the study.

Table 4.1 Types of non-probability sampling

Sample Type	**Description**
Convenience	Individuals who are available are selected
Purposive	The researcher chooses who to include
Quota	Adequate representation from different groups
Snowball	Participants refer someone they know
Self-selection or volunteer	Participants choose or self-select to engage in the study

4.5.1 Purposive sampling

A purposive (expert sampling) selection method was viewed as suitable to be used to identify eligible participants, a method recommended by several authors undertaking qualitative research (Denzin & Lincoln 2000 & Patton 2015). The advantage of using this method is that it allows for targeted recruitment of individuals whilst addressing any specific inclusion criteria.

There are disadvantages of this sampling method. It is prone to researcher bias as the sample is centred purely on the opinion of the researcher them self, although this can be avoided by adopting a theoretical framework. It is unclear with any non-probability sampling method, however, if the results could be replicated with different samples, although this is not a requirement for phenomenological studies as generalisation of findings is not a key outcome (van Manen 2017). To ensure credibility of the study by other means, the participants were targeted from several NHS organisations employed in a variety of roles for triangulation purposes, based on the transferability criteria identified by Guba (1981).

The study aimed for the inclusion of ten participants. Whilst this appears a small sample size according to Pietkiewicz & Smith (2014), this is consistent with other studies following an interpretative phenomenological methodology using interpretative phenomenological analysis (IPA), due to the in-depth narrative analysis that is required. Indeed, Turpin et al (1997) suggest that a figure of six to eight is an ideal number in IPA, to allow for similarities to be

identified yet still allow an opportunity to fully explore individual differences. Further consideration for the use of IPA will be provided in section 4.7.

4.6 Rationale for data collection methods

The type of data required to answer a research question should denote the method or data collection techniques that are appropriate. Therefore, in a phenomenological study such as this where the intention is to collect rich accounts of lived experience, a method such as a questionnaire would not provide the depth of narrative needed (Dowling 2007). Focus groups were also considered although the researcher considered that this method may stifle discussion and prevent prescribers from talking honestly about their personal experiences with their peers. Interviews, however, are a recognised method in phenomenological studies. The second method of data collection proposed, a clinical vignette, was purposefully designed to encourage the respondents to verbalise their clinical decision-making strategies based on a clinical presentation. This will be used as a stimulus for discussion. Methods such as this have been successfully used to examine the clinical reasoning decisions by health professionals (Jenkins et al 2010, Evans et al 2015, Offredy et al 2008). The use of a vignette will maintain the phenomenological approach as prescribers are encouraged to immerse themselves in the scenario and articulate their thoughts as if prescribing in a real clinical situation (van Manen 1997).

4.6.1 The narrative interview

There are various approaches to conducting research interviews, including structured, semi-structured, and unstructured interviews which all allow an individual to articulate their experiences in their own words (Minichiello, et al, 2008). van Manen (1990) promotes the use of a semi-structured interviews to gather data in phenomenological studies. Smith & Osborn (2003) agree that this is the most appropriate data collection method for IPA and for the subsequent analysis of complex subjects. This is likely to be because a semi structured interview allows participants to freely articulate their thoughts and feelings, unrestrained by rigid questioning. Whilst interviewing is identified as an efficient method of data collection, Tod (2007) also recognises the importance of rich narratives that capture views, experiences, behaviours and attitudes as well as feelings and perceptions, which will be considered in the vignette exercise.

Disadvantages to interviews, noted by Holloway and Galvin (2017) and Adams and Cox (2008) relate to their time-consuming nature, including arrangements, travel time and interview completion time. Consideration was given to this, to reduce the impact on participants. The interview process forms the first stage of the study and will be followed by a discussion related to a clinical scenario using a vignette.

4.6.2 Vignette

Vignettes have been described in a number of ways. Barter & Renold (1999) describe them as short stories. Hill (1997:177) portrays them as scenarios in written or pictorial form, whilst Jenkins et al (2010) depict them as sketches of fictional scenarios. However these are defined, the first objective is to illicit a reaction to a specific clinical situation from the participants, with the intention to identify their beliefs about the subject content and their opinion or attitude to the scenario (Barter & Renold 1999, Hughes 1998). Hughes (1998) recommends that the scenarios must be plausible to produce positive reactions from participants. The second objective is to '*gain insight into participants' interpretive processes*' (Jenkins et al 2010:3) these will both align to a phenomenological approach. The use of a vignette allows the researcher an opportunity to observe and understand how participants react in a specific situation and make subsequent clinical decisions without direct risk to their patients/clients. Use of a vignette will also ensure the equity of clinical presentation to each participant, that is unaffected by individual patient health differences or clinical settings. This thereby offers a degree of consistency from which responses can be compared. It must be noted that the vignette will be used to explore the participants' knowledge and insight into a specific subject and is not intended to simulate a real-life setting (Jenkins et al 2010, Wilks 2016). Further details related to the use of this method can be found in Chapter 5.3.2. Vignettes have been successfully used to investigate phenomena in both qualitative and quantitative research, in the study of

individuals' perception, in several health and social care areas (Barter & Renold 1999, Offredy 2002, Wilks 2004, and Thompson et al 2016). Cullen (2010), Faia (1980), Stolte (1994) and Evans et al 2015), have however, reported their concerns related to the artificial nature of vignettes and the lack of representation of the real. Despite these concerns the rationale for the use of vignettes within this study negates the impracticalities of the assessment of real time clinical decisions made within a practice setting.

Using a pre-tested scenario is considered to offer credibility to the vignette content (Guba 1981). Other pretested scenarios used in studies of non-medical prescribers were considered, such as that employed by Offredy (2002) in her doctoral study. This scenario was not used as this was considered brief and did not offer sufficient context for the scenario to be plausible and understandable by the participants. This is an important consideration when constructing vignettes according to Barter & Reynold (1999). The scenario used by Thompson was also considered and found to be more appropriate in design and context and as such was used to guide the development of the scenario for this study. The vignette content was subsequently reviewed by two fellow academics who are also non-medical prescribers for sense checking and appropriateness. The vignette was not aimed to predict behaviour but to offer insight into perceptual processes of the participants as suggested by Jenkins et al (2010). Schutz (1970) offers three types of perceptual relevance which can be used to enhance the vignette process. The *topical* (the social situation of the participant), *interpretive* (related to knowledge) and

motivational (the rationale for engagement) these were considered during the development of the scenario.

The two methods of data collection will be reported separately and then the key findings combined for further synthesis.

4.7 Data analysis

The philosophical analysis and framework that underpins the data analysis is presented in this chapter although the operational component of this will be dealt with in the methods section, in chapter five. There are no fundamental rules when analysing qualitative data and several approaches exist. van Manen (1997:36) reminds us that the aim of phenomenological data analysis should be to:

> "transform lived experience into a textual expression of its essence – in such a way that the effect of the text is at once a reflexive re-living and a reflective appropriation of something meaningful."

Interpretative phenomenological analysis (IPA) is a method that has been effectively used to analyse 'lived experience' and reported by authors including Pietkiewicz & Smith (2014), Larkin & Thompson (2012) and Smith et al (1997). IPA also has its origins in phenomenology and symbolic interactionism according to Brocki et al (2005). IPA encourages the researcher to engage with the narrative in an interpretative manner and differs from other methods such as discourse analysis by ascribing meaning to the language used (Biggerstaff and Thompson 2008). Reid et al (2005) interpret its use as being concerned with the subjective view of participants rather than the objective

data, thereby exploring how participants make sense of their own experiences using self-reflection (Chapman & Smith 2002). van Manen (2017) contests this, suggesting this is a psychological interpretation rather than true phenomenology, however, his responses are not necessarily consistent (Paley 2017). van Manen's framework will be used as a general guide when commencing data analysis and this will be detailed in chapter 5.4.

4.8 The role of the researcher in data collection

4.8.1 Insider /outsider perspectives

An insider is described as having an emic perspective on a situation or conversation as opposed to outsiders who display an etic perspective by the avoidance of preconceptions (Harris 1976). Merton (1972) describes insiders as those with 'a priori' knowledge of a given community whereas Luttrell (2010:368) suggests a more multifactorial definition, that includes race, gender, culture, class, sexual orientation, as well as membership of a group.

Insider research relates to studies undertaken when the researchers are members of the same population that they are interviewing (Kanuha, 2000). As a registered adult nurse, with an independent/supplementary prescribing qualification and experience of supporting the education of nurses on their journey to become prescribers, I recognise myself as an insider, sharing identity, language, and experiences with those being studied (Asselin, 2003, Ajjawi & Higgs 2007). Whatever the perspective of a researcher it is important for them to remain non-judgemental and develop a mutual trust with the

participants (Holloway and Galvin 2017) whilst ensuring that they do not attribute meaning to jargon and text that may not reflect that intended by the participant. This will require consideration in the interpretation and analysis stage to ensure 'hermeneutic alertness' as described by van Manen (1997) and avoid assumptions and preconceptions (Ajjawi & Higgs 2007).

Knight (2002), however, is critical of the perceived privilege that an 'insider' researcher carries, suggesting this may threaten the true researcher status. This was discussed with the lead supervisor prior to the study and further consideration given throughout the research journey. As an experienced nurse prescriber working within an academic organisation and known to some of the participants this was a potential and the researcher needed to be aware of the potential for practising a subtle or nuanced coercion (Townsend et al 2010).

A direct benefit of having insider status is that the language used by participants is familiar and jargon used may be hard for non-professionals to understand a situation recognised by Fontana & Frey (2000). Several other advantages of insider status are noted. It can help to facilitate trust and confidence from those interviewed and allow a rapport to develop early in the interview process. It also allows the researcher to positively identify with the participants in their clinical world and reflections according to Dwyer and Buckle (2009).

4.8.2 Ethical considerations

Other ethical considerations related to the study such as credibility, reliability trustworthiness and their importance also required consideration, as did the

potential for researcher bias (Silverman 2004). The ethical considerations identified by Townsend et al (2010) and linked to theoretical approaches as seen in Appendix 8 were addressed. This diagrammatic interpretation summarises the theoretical approaches and associated ethical issues which require consideration. Linking this with the chosen interpretivist paradigm this approach provides stages of consideration required against the key ethical principles of autonomy, social justice, beneficence and non-maleficence when working with qualitative data. In order to demonstrate the consideration of these principles' researcher credibility, trustworthiness and bias will be considered.

4.8.3 Researcher Bias

Kahn (2000) suggests bias is an identified criticism of any qualitative research. Johnston et al (2016) in their discussion paper offer strategies to overcome bias. Within the study the self-selecting nature of participation, may present a biased view or opinion, as participants choose to register their interest in involvement possibly due to familiarity with the researcher. Consideration in the analysis and interpretation stage of this potential is therefore important. To mitigate this the data and analysis would be reviewed by a second supervisor. A method also widely adopted to overcome bias is the use of a reflective diary (Johnston et al 2016, van Manen 1984). A diary seen as important to record events, thoughts and experiences of the researcher and to identify any areas where the researcher felt bias may occur and this would be reflected upon during the interpretation stage of the study. Auditability also

strives to prevent bias in this case achieved by the examination of documentation by a third party who reviewed the decision-making process (Tobin & Begley 2004). Further consideration of the impact of insider status will be offered in the discussion chapter 7.

4.8.4 Trustworthiness

To ensure trustworthiness a credible representation of the context of the study, the appropriateness of participants involved, the data collection method used, and suitable process of analysis are important considerations (Guba 1981). Polit and Hungler (1999:717) indicate that the terms trustworthiness and transferability can be used interchangeably. The decision about transferability should be left to the reader when the research is published, according to Graneheim & Lundman (2004) suggesting that individuals can determine if research is appropriate for adoption in their own area. The provision made by the researcher to demonstrate credibility, transferability, dependability and confirmability and the attempts to manage these are represented in Appendix 9.

4.8.5 Credibility

Credibility of a research study can be achieved if there is confidence in the focus of the research according to Polit and Hungler (1999). The recruitment of a variety of individuals with varying degrees of experience from different clinical backgrounds will strengthen this. This strategy, according to Patton (1987), sheds light on alternative aspects of the experience. This can be

demonstrated in the sampling strategy employed and the rationale for this in section 4.5. Credibility was further enhanced by the clear identification of research findings and the categorisation of themes and how these have emerged as described in chapter seven and confirmed using verbatim quotations from transcribed text and identified in Appendix 6.

4.8.6 Reflexivity

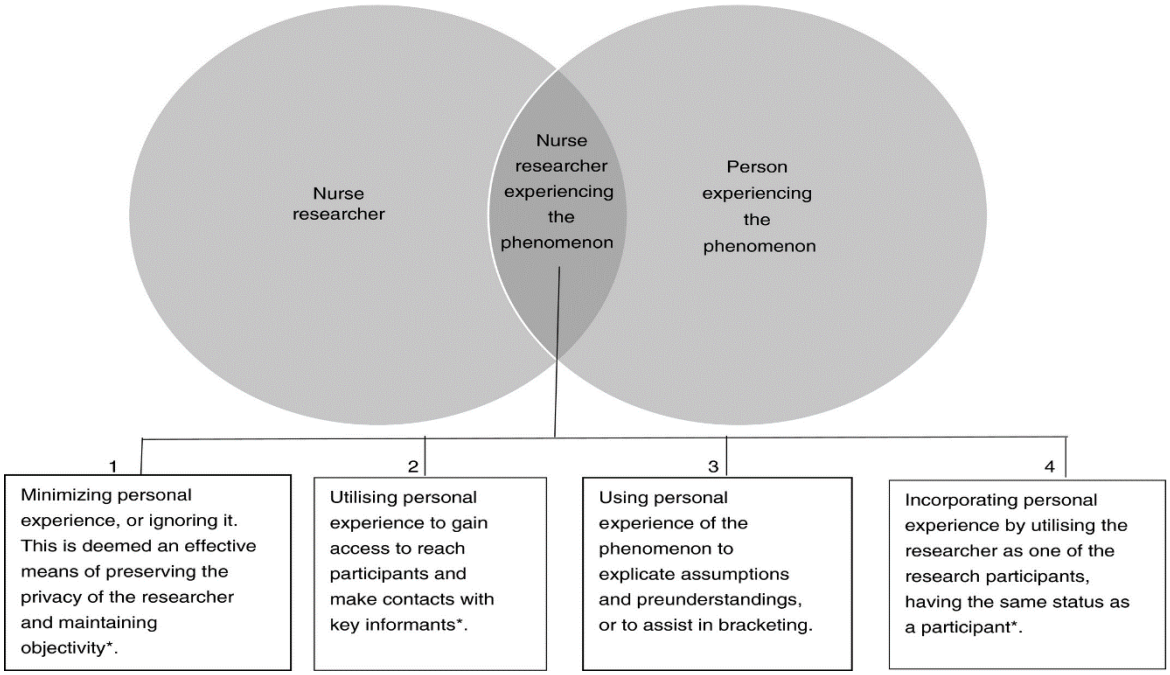
Self-awareness is an important aspect of any phenomenological study and required the researcher to demonstrate a cognitive ability to acknowledge and understand their personal contribution to their study and the challenges that could occur as a consequence of their involvement. These potentials were given full consideration and the researcher recognised the potential for bias and assumptions a situation that van Manen also accepts as an important consideration in phenomenological research (1984).

To address potential bias the five types of reflexivity used to ensure trustworthiness and credibility of research according to Finlay (2002:209), which are introspection, intersubjective reflection, social critique, mutual collaboration, and discursive deconstruction will be considered against the findings in chapter 6.

Patton (2015) also advocates that deep introspection of this nature and the exploration of researcher perspectives is required to ensure that data is not subsequently affected by the researcher's own experiences. Peterson (2015) however, suggests that valuing personal involvement in the research by

addressing one's own standpoint helps to shape the research and offers valuable insights. To do this, the researcher must position themselves to determine the extent to which their experience is used within the research (figure 4.2) according to Wilkinson & Kitzinger (2013). This will be considered in section 6.9.1.

Figure 4.2 Positioning of researcher as person experiencing the phenomenon under consideration* (Wilkinson & Kitzinger 2013:253).



4.9 Summary

In order to ensure a credible study with a coherent research design, consideration of an appropriate philosophical approach was required. This assisted the researcher in understanding the rationale for the study approach proposed, and the choices which could be made (Trede & Higgs 2009). Having considered the philosophical, theoretical and ethical requirements that were

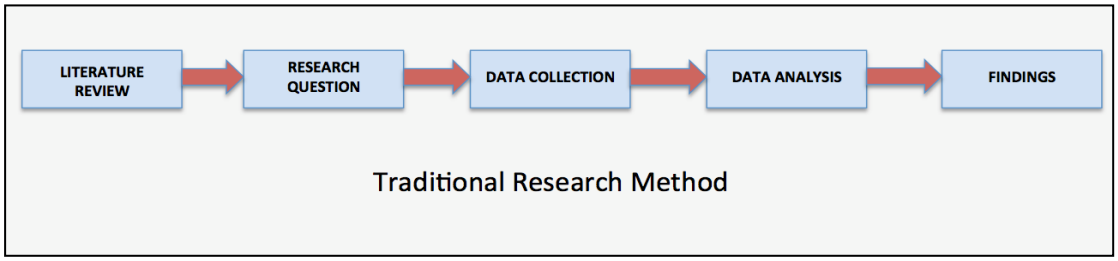
required prior to and during the study, a formal investigation and data collection was undertaken. This involved a multi-method approach using a semi-structured interview and a vignette. IPA will then be used to analyse the data. The following chapter will now focus on the research methods employed within the study.

Chapter Five: Research Method

5.0 Introduction

This chapter will consider the method or *specific research techniques* as described by Silverman (1993:1) that were used to collect data within the study. Whilst there are several methods available it was important to select the most appropriate to maintain the desired phenomenological approach and allow the researcher to explore the phenomena of nurse prescribing and understand the lived experience and begin to understand the factors and influences involved in decision-making. The study has followed the classically defined ethos of traditional research methods and as such maintained a conventional pathway (figure 5.1).

Figure 5.1 research pathway



The stages of the investigation will be presented in order of occurrence, including the ethical considerations, the recruitment/selection process, followed by the data collection methods chosen. This will be followed by the transcribing and coding methods concluding with the rationale for the use of Interpretive Phenomenological Analysis (IPA) as proposed by van Manen (1990).

5.1 Ethical considerations

Prior to commencing the study, consideration was given to research ethics. This consideration extended beyond the ethical approval of the study. Considerations related to the credibility, reliability and trustworthiness of the study, as previously discussed in chapter 4.

5.1.1. Ethical approval

Before data collection, ethical approval, was gained from the Faculty of Health Sciences, renamed the School of Health and Social Care, ethics committee. NHS approval was sought via the Health Research Authority. An application to the University Ethics committee was submitted for an Independent Peer Review (IPR). This was possible because the study did not include participants from vulnerable groups, consider sensitive or confidential information and was not expected to cause anxiety to the participants (Staffordshire University 2016), hence full ethical approval was not required. Amendments were required following the initial submission. The amendments related to further explanation of the study population, how issues related to the identification of poor practice would be addressed and the consistency of information within the appendices which related to the individual Trust details on the documentation. Following amendments, and subsequent resubmission, the committee approved the study (see Appendix 10 IPR approval letter). An application was made to the Health Research Authority (HRA) via the Integrated Research Application System (IRAS). Clarification was again

required on several minor points. These amendments were made and resubmitted. HRA approval was then gained to consider participants from a single National Health Service (NHS) site, a local acute hospital, (HRA approval number 218064) see Appendix 11. The procedures for the study were approved at all stages by Staffordshire University ethics committee and HRA.

5.2 Identifying suitable participants

The identification of suitable participants was undertaken using the following eligibility criteria.

A) Inclusion criteria

- UK Registered Nurses with an Independent/Supplementary prescribing qualification recorded on the NMC website.
- Employed at an approved NHS Trust
- Working in a clinical environment in a community or secondary care setting.
- Holding a generic role title incuding any of the listed titles; Nurse Practitioner, Advanced Nurse Practitoner, Night Nurse Practitioner, Surgical Nurse Practitioner, Community Matron, Medical Nurse Practitioner or Nurse Prescriber.
- Actively prescribing as part of their role.

B) Exclusion Criteria

- Nurses working as community practitioner prescribers - These individuals have been excluded as they will be employed to work within a specific role and will

not have the scope of prescribing opportunity of those clinicians with independent/supplementary prescribing.

- Supplementary prescribers - These individuals have been excluded as they will be required to work alongside a medical practitioner in their decision-making and within the confines of a clinical management plan (CMP).
- Allied Health Professionals (AHPs) have been excluded as they have a different registering professional body and therefore have different governance arrangements.

5.2.1 Sampling

A purposive sampling selection method was used to identify suitable participants (Denzin & Lincoln, 2000 & Patton, 2002) as this method allowed control over the selection of the participants, therefore ensuring the eligibility criteria would be met. An introductory email was sent to the prescribing lead at one local NHS acute care provider in the West Midlands. The email included attachments containing an information sheet (Appendix 12) relating to the study aims and purpose and a copy of the proposed consent form (Appendix 13). A request was made for the information to be emailed to all independent/supplementary prescribers employed by the Trust. After this initial email contact with the prescribing lead a follow up email was sent with an agreement that when participants expressed an intertest in being part of the study they would be identified to the researcher via their email address. They would be subsequently contacted by the researcher using an NHS email

account to discuss the research topic and process in more detail. This method of sampling proved ineffective.

Uptake was extremely slow with only one participant making contact within the first few weeks despite clarification with the trust lead that the email had been sent out to all prescribers within the trust. The trust has 362 prescribers working over two sites and therefore access to suitable participants should have been feasible. This necessitated a new approach, and the prescribing lead was asked to re-send the study details to the matrons within the divisions at the trust who would be asked to pass on the information to prescribers working in their areas. This process yielded one other participant. The slow nature of uptake for the study was explored with a research supervisor, as the reason for this was unclear. The decision was made to extend the research sites to include all NHS Trusts within the approved locality to increase the potential for participation from a wider audience. The initial intention was also to recruit clinical staff from local NHS trusts who were employed with generic job titles such as Nurse Practitioners, Advanced Nurse Practitioners, Night Nurse Practitioners, Surgical Nurse Practitioners, Medical Nurse Practitioners or Community Matrons and who are required to prescribe autonomously within their role. The lack of uptake required an amendment to include those with specialist nurse titles also, along with an increase in study sites. This necessitated seeking permission from HRA via email to extend the test sites, by providing a rationale for the change. This extension was approved to allow

the inclusion of four other NHS trusts and to include the role of specialist nurses in the inclusion criteria.

Minor amendments were again required prior to HRA approval (Appendix 14). This related to the addition of individual trust details on research correspondence. When HRA approval was gained an email was sent to all Research and Development (R&D) leads in the locality requesting permission to allow research to be undertaken with their employees, based on the amended HRA submission approval. Following this, four further sites were included in the study and the prescribing leads for each of the organisations were contacted to ask for support in disseminating study information to the prescribers in their organisations.

The procedure for recruitment followed the same process for new organisations as it had been for the first one. Recruitment was again slow, with only two participants coming forward from the new organisations. At this stage in the study, a decision was made to use social media to request support with the study assuming that Trust emails were not the best method of communication of information. A social media request was posted and linked to all the Trusts in the recruitment catchment area. The combination of increased study sites and the use of social media facilitated further recruitment success. Nine nurse prescribers were recruited to the study in total.

Following recruitment all the interviews were arranged via email directly with the participant at a mutually convenient location. This was usually within the individual's place of work or their designated work base and at a suitable time

to aid participation in the research and reduce the impact on the participants' time and resource. The potential to offer a telephone interview was proposed but was not required, admittedly this may have been a more challenging way to undertake the vignette stage of the investigation. The details of the participants can be seen in table 5.1 below.

Table 5.1 Participant details

Participant Name (Pseudonym)	Trust type	Role	Gender	V100/V150 Qualification	Duration of prescribing as V300	Known to the interviewer	Trained by interviewer
1 Alan	Acute	Arrythmia Nurse Specialist	M	No	4yrs	Yes	Yes
2 Beth	Acute	Advanced Nurse Practitioner-Elderly Care	F	No	<6months	No	No
3 Carl	Community	District Nurse-Charge Nurse	M	Yes	11yrs	Yes	No
4 Diane	Community	District Nurse- Sister	F	Yes	12yrs	Yes	No
5 Erica	Acute	Advanced Paediatric Nurse Practitioner	F	No	4yrs	No	No
6 Fern	Community	Community Matron	F	No	9yrs	No	No
7 Gail	Acute	MS Specialist Nurse	F	No	2yrs	Yes	Yes
8 Harry	Acute	Ambulatory Nurse Specialist	M	No	3yrs	No	No
9 Ian	Community	Community Matron	M	No	5yrs	Yes	Yes

This information identifies participants by role, gender, time as a prescriber and those who were previously known to the interviewer. The relationship of these variables will be considered in the discussion chapter.

5.2.2 Informed consent

To be eligible, all study participants were required to be registered with the Nursing and Midwifery Council (NMC) and as such were not regarded as vulnerable or at risk from personal harm in relation to the study and deemed professionally prepared to address and raise any concerns they had about the study, therefore ensuring non maleficence. Participants were given interview material in advance of the interview to ensure they were fully appraised of their requirements and the aim of the study (Appendix 15). Permission to withdraw from the study if required, was provided to all those agreeing to take part. The time frame for this was provided, to ensure that those participating would not withdraw at the latter stages when analysis of data had been completed.

5.2.3 Confidentiality

Confidentiality within the study, considered not only the privacy of the data collected and the participants' details, but the methods for protecting this data. Data was captured on an electronic device, it was therefore important to ensure not only the safety of the device, but the safe storage of content post-interview in order to meet General Data Protection Regulation (GDPR)

(Information Commissions Office (ICO) 2016). Providing participants with information that their verbatim comments may be published, following the privacy of the interview process, was discussed and added to the consent form, to ensure participants were fully aware.

5.2.4 Considerations for practice

Consideration was given to the potential that during the interview process participants would breach confidentiality related to a patient or client or admit to an unethical or unsafe practice. Within the HRA ethics process beneficence and non-maleficence was considered, and a process for escalation identified should this occur. Participants were advised of this escalation process prior to the interview and their consent gained for agreement to this should this be required.

5.3 Data collection

Data collection commenced in August 2017 and finished in December 2018. The interviews were arranged on a one-one basis. The steps taken for data collection followed those suggested by Smith et al (2009) when undertaking interpretative phenomenological analysis.

The interview date was confirmed in writing to the participants via email and on some occasions by phone where clarification of a venue was required. The introductory email included details of the purpose of the study and the participant information sheet to ensure that the participants were adequately prepared for the interview. A professional approach was maintained

throughout the study by using official channels of communication and facilitating privacy and confidentiality throughout. Such an approach required honesty of response and suspension of judgement to participant responses. Two interviews were conducted on University premises as this was the most convenient location for the participants, with all others conducted on NHS premises at the request of the participants. Rooms were selected either by the researcher or the participants and were deemed as appropriate for the interview for example a quiet location and door signage was used to prevent interruptions. The use of a natural setting such as this is, according to Richards (2014), is one way to relax participants. The date and time chosen allowed at least one and half hours of interview time. This was enough time to settle the participant and set up the necessary recording equipment and undertake the two-stages of the study (interview and vignette).

5.3.1 The narrative interview

According to Langdridge (2007) a semi-structured interview is the method of choice in IPA, which was the proposed data analysis approach. The narrative interview process was chosen by the researcher as a method which would allow participants to openly express their views, unconstrained by the rigidity of questionnaires or a standardized interview technique as recommended by Gillham (2005). The semi-structured approach allowed for the development of a relationship with the participants, in order to understand their experience and their perceptions of their role and any perceived influences on this.

When the participant was settled the digital recording commenced and the interview date and time was confirmed verbally. Whilst striving to promote a friendly and relaxed atmosphere during the interviews it was important to have a degree of detachment to reduce bias as suggested by Salazar (1990). This was attempted by using a formal approach to communication both prior to and during the interview and avoiding any conversational language during the interview. If interviewees drifted into unrelated conversation, then they were politely asked to return to the questions posed. At the start of the interview, participants were asked to confirm that they had read and understood the information supplied to them in advance of the interview. Verbal consent was sought from participants to capture data via a digital recording device. Evidence of written consent was also captured via the participant signature on a consent form (Appendix 13). The consent was also used to confirm the participants' understanding of confidentiality and the opportunities for withdrawal from the study should they so wish.

The 'responsive interview' style used in a semi-structured interview has attractive features. It allows flexibility around the pattern of questioning, which often evolve from the responses to the participants' views. This interview technique is recommended by Flick (2014) as a method which allows for 'probing' to further establish a depth of response. A list of the questions asked during the interviews is presented in Appendix 16.

To explore the lived experience of nurse prescribers, the researcher considered it necessary to firstly understand their path to prescribing. Understanding an

individual's motivation for undertaking the prescribing training and the education that prepared them for their role expansion, in addition to their rationale for choice of training provider was the starting point of this enquiry. Also captured was the perceived effectiveness of this preparation for their role and the support from their employing organisations during this process. This was necessary to truly understand the impact of this on a prescriber's experiences.

The initial question asked participants to recall their prescribing journey, how it began, and the rationale for this role development. It was important to ensure that any questions asked were neutral as opposed to value-laden or leading to reduce bias, and jargon was avoided to prevent confusion. Despite this intention, during the first interview, at times the researcher guided the questioning. This was not deliberate, but on reflection was attributed to their naivety as a researcher. This was noted on audio feedback during the initial review of the data as leading questions were posed. The impact of this would be considered in the analysis of that interview. Attention was paid during subsequent interviews to avoid duplication. This required silence from the researcher to allow the participants to talk without interruption and then again to use the silence to allow reflection.

To provide further guidance for the researcher the interview questions were slightly amended after the first interview to include prompts and probes to prevent leading questioning. In order to guarantee full and effective recall of information, by the researcher, the use of a digital recorder was adopted. This

method allowed the recall and subsequent reproduction of the spoken word, sounds, including hesitations and cut-offs in speech, the identification of long pauses, laughter and the identification of strong emphasis. The importance of recognising this in the analysis of the data is noted by Bailey (2008). It was important to capture not just the words, but how they were said and in what context, along with the mental images of the individuals at that time to fully understand the meaning and therefore the use of notes helped with this process. It was important to note nonverbal clues which cannot be captured from the audio recordings. Minichiello et al (2008) advocates that these are documented at the time of the interview via note taking. The purpose of the note taking was explained to the participants prior to commencement of the interview. Interview notes would be used alongside the reflective account to provide greater insight into the interviews. Creswell (2013) refers to this as an 'interview protocol' used to capture the chronological details of the participants, including the location and setting for the interview, and nonverbal cues and expressions. The notes were used during audio playback to help reconstruct the conversations as they occurred during the interviews as suggested by Muswazi & Nhamo (2013). O'Leary (2010) indicates that in some instances it may be appropriate to turn off any recording devices and only take notes to relieve undue anxiety, however, this was not required in any of the interviews.

5.3.1.1 Overview of interview activity

Nine participants were recruited over a period of fifteen months and appendix 17 provides a timeline of interviews undertaken and the duration of each interview. Interviews continued until saturation of data had been assured by the researcher and no new themes were emerging from the discussions. The interviewees were firstly listed in numeric order then subsequently assigned a pseudonym to maintain their anonymity whilst personalising the use of verbatim quotations from the findings.

5.3.2 Use of a Vignette

After the semi-structured interview phase, where participants had discussed their experiences as a prescriber, a vignette based on a clinical situation was presented to them for consideration (Appendix 18) as discussed in chapter 4.6.2.

This vignette was utilised as a tool, to gather supplementary data around decision-making, by eliciting responses to a hypothetical scenario based on a plausible real-life situation (Taylor 2006, Wilks 2004). When developing the vignette, it was important to ensure that there was enough context to the scenario for the participants to understand the situation without giving too much detail as to stifle discussion or thought as described by Barter & Reynold (1999). Jenkins et al (2010) recommend that the more plausible the scenario

the more likely it is to produce rich data and allow the participants to engage in a meaningful discussion.

The intent of this vignette was to understand the perceptions and experiences of the prescribers in relation to their clinical reasoning and decision-making strategies in a clinical situation without the need for direct patient contact. The vignette related to an elderly individual with a diagnosis of chronic obstructive pulmonary disease, who presented with a low-grade pyrexia and a slight increase in shortness of breath. Independent variables (Taylor 2006) used within this vignette included:

- Categorical - no intrinsic ordering (e.g. pyrexia or apyrexial)
- Ordinal - some degree of ordering required (the degree of dyspnoea: short of breath on exertion, shortness of breath at rest, orthopnoea)
- Interval (medication currently prescribed)

The participants were asked to review the vignette and consider what strategies they would employ if presented with this scenario in clinical practice and offer a rationale for their decisions. Following completion of both parts of the study the recordings were sent for transcribing.

5.4 Analysis

There are a variety of approaches to the analysis of qualitative research data according to Colaizzi (1978), Gadamer (1983) Giorgi (2005) and van Manen (1990). The analysis of the data follows several stages, and this is dependent on the method adopted (Pope et al 2000, Braun and Clarke 2013, Smith et al

2009, Van Manen 1984) with many advocating a staged approach. This section will document the analysis stage of the study using interpretive phenomenological analysis (IPA) which is underpinned by phenomenology and hermeneutics. Although this is a widely adopted method for qualitative data analysis, it requires the researcher to ensure that they capture the 'meaning of experiences' and not just the experiences as they are described and will necessitate an understanding of the subtleties described in conversations (Tuffour 2017). van Manen's four-staged approach to analysis is used as it offers consistency with interpretative phenomenology.

5.4.1 Stage 1 Immersion and familiarisation

The recordings were transcribed by a third party, a professional typist who was familiar with transcribing from audio format, to speed completion. The voice recorded content was sent in encrypted format to ensure confidentiality and comply with general data protection regulations (GDPR) requirements. Using a professional transcriber resulted in a minimal delay in receiving the transcripts back, which allowed for early review and accuracy checking of the data by the researcher. Not transcribing personally may in some instances prevent researchers from truly engaging with the data. This was not the case as a swift return of transcripts, allowed significant opportunity for replay and re-reading. To aid readability of the transcripts, and to recognise each speaker's text, identified punctuation was used by the transcriber within the text, a method encouraged by Braun & Clarke (2013). This can be seen within

an excerpt from a transcript (Table 5.2). 'P' denotes the participant and 'I' the interviewer.

Table 5.2 Example transcript

P	To be honest I don't know a great deal about COPD.
I	Good.
P	And I don't even recognise some of these medicines.
I	OK right.
P	And so, I would, if I was seeing this person then I would take a full history.
I	Right
P	Look I don't know whether this is COPD, I don't know whether diabetes, whether this is Type 1, Type 2, because she would be more DKA, with a shortness of breath, has she got …breathing is she ketotic I don't know, so I would have to take a full history, I may do some initial investigations, blood sugar, and ketones, just to make sure this is nothing else.

Transcribing is not without its challenges as Bailey (2008) explains. There were situations when the transcriber was unable to clearly identify words spoken and struggled to make sense when both parties spoke simultaneously. This not only added additional costs as there was a requirement for the transcriber to replay the tape multiple times increasing the overall time spent on transcribing but prompted a request by the transcriber to encourage all participants to speak slowly and clearly. This request was made by the interviewer prior to subsequent interviews. On return of the transcripts in Microsoft Word format, their accuracy was checked by replaying the recording whilst reading the text. van Manen (1984) advocates such an approach in phenomenological studies, to encourage researchers to become fully immersed in their data. Immersion of this sort is a method also suggested by Pietkiewicz & Smith (2014) to help a researcher to recall the atmosphere of

the interview. This process assisted the researcher in 'getting familiar with the data'.

During the playback stage, amendments were made to correct missing information, clarify names, difficult words and phrases and identify where missing data was marked with **. The ** was used to indicate the time on the recording to aid this process. This method was repeated by the researcher after each audio interview had been transcribed, in order to afford the same level of scrutiny to each interview. Following the checking process of each interview the audio versions of the interview were deleted from the digital recorder. An electronic copy of the transcript was kept on a storage device which was held in a password protected secure location to protect confidentiality. The next stage was to code the data.

5.4.2 Stage 2 Indexing and code generation

The process of indexing or coding data by systematically labelling small passages of data from the original transcript is the first stage of analysis according to Willig (2013). Providing a link between the raw data by capturing basic units of descriptive narrative, assists in the development of emerging themes (Pietkiewicz & Smith 2014). Data analysis of this sort is described as inductive. Coding the information provided from the participants, was a method used to identify emerging patterns, similarities or themes or identify contrasting information. This process allowed categorization and summary of large volumes of information. The identification of such data is classified as 'objects of concern' by Larkin & Thompson (2011). As well as identifying

themes and similarities Larkin & Thompson (2011), advocate the inclusion of events, relationships and values, followed by 'experiential claims' or clues to meanings to ensure the rich narrative is fully explored. Considering this, the coding approach taken combines both inductive and deductive methods to allow the rich data to be used to its fullest extent and subsequent analysis of both descriptive and contextual comments from both stages of the study.

5.4.2.1 Coding data process

The coding process commenced with the reading of all transcripts sequentially to get a general sense of the data. Each interview transcript was then reread individually. Manual coding using an inductive format was undertaken, identifying words that were repeated, or words that surprised the reader, or words that had previously been identified from the literature. Also included were those words that were perceived as important to the interviewee, along with those that identified concepts and theories. Creswell (2013:259) encourages this type of approach and advocates that this is used to respect the accuracy of the information and avoid the possibility of the researcher becoming the "voice of the subject". This is also a method of Interpretative Phenomenological Analysis (IPA) which can be specifically used to gain a detailed description of participant views according to Langdridge (2007).

Coding the data from each transcription was undertaken in a systematic way. Transcript one was then reread, considering deductive analysis using the research question as a guide. This allowed data to be selected that specifically related to decision-making, competence or scope of practice. This process

produced a significant amount of initial codes. Codes were initially documented by using text in red font colour, electronically. An example of coding can be seen in Appendix 19. This process was undertaken electronically for the first two interviews, although this practice altered to handwritten coding, as this was a quicker and easier method to undertake. To ensure reliability of the coding method, transcript one was reviewed and independently coded by a third party and cross referenced for similarity of findings to ensure both credibility and reliability of analysis. Each remaining transcript was independently reviewed and coded. Handling the data was important as was regular review.

5.4.3 Stage 3 Charting and searching for themes

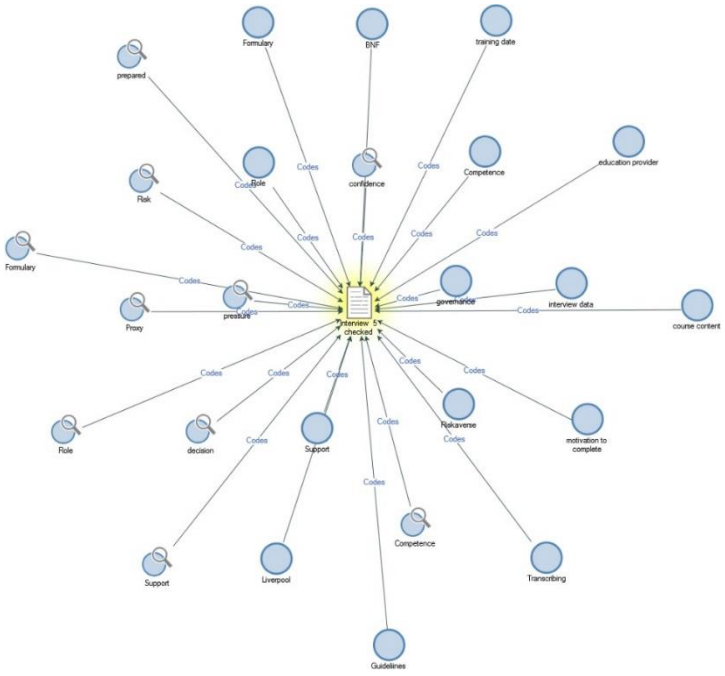
The coding terms from all the interviews were then collated and further categorised. This is a similar method to thematic analysis (TA) according to Willig (2001) but facilitates the analysis of developing themes rather than predefined themes as in TA (Langdridge 2007). Common sub-themes emerged from the coding and these were manually logged. The number of recurrent codes was recorded.

The use of a data analysis tool was also adopted to assist in the process, which would hopefully not diminish the closeness and familiarity with the data but would enhance the process by grouping and categorising the findings and patterns in the data (Bazeley & Jackson 2013). The researcher chose to use a software package to support the data analysis in the form of NVivo Pro 11. The intention was to improve the interpretation of the data although the lack

of familiarity of the researcher in the use of the tool initially prevented effective understanding of its capability and use. Training took place with an independent researcher to explore the tool and gain some experience with its functionality. This tool was subsequently used as a data management package and was particularly useful in identifying word trends and frequencies.

The patterns or themes were presented in both descriptive and graphic formats as identified in figure 5.2 below. This pictorial example demonstrates the richness and complexity of the discussion topics generated during one interview and how these topics developed as the narrative unfolded. The central image depicts the interview transcript which had been checked for accuracy against the recording following transcription. One of the themes identified in this image relates to the topic of academic study. This topic led to a wider discussion related to education and knowledge development and the gaining of a professional qualification.

Figure 5.2 Pictorial example of coding sub themes from interview Erica



Each transcript was loaded into the analysis tool individually to allow for individual and collective analysis. Following upload of the transcriptions, a basic analysis in the form of a word cloud was produced as a visual representation of the commonality of the words captured in the recordings (Appendix 20). The frequency of the words used was also captured, which noted all words with more than 3 characters in order of frequency.

Using the two forms of data management was time consuming, but beneficial, in allowing the researcher to gain valuable insight into the rich data and begin to see commonalities and sub-themes as they emerged. van Manen (1990) opposes this form of analysis, advocating against the reliance on transferability of findings, but seeking to 'understand' of the data. In order to begin to understand the data, interpretation was necessary, and this began with the identification of first order constructs arising from participants' views and

descriptions. This process captured the detailed account of the participants (Titchen & McIntrye 1993) and researcher interpretation of these. An example of this is demonstrated in the participants' understanding of the term competence and the distinct differences in their articulation and understanding of this professionally recognised term (NMC 2006, NMC 2018) (Appendix 21).

5.4.4 Stage 4 theme development

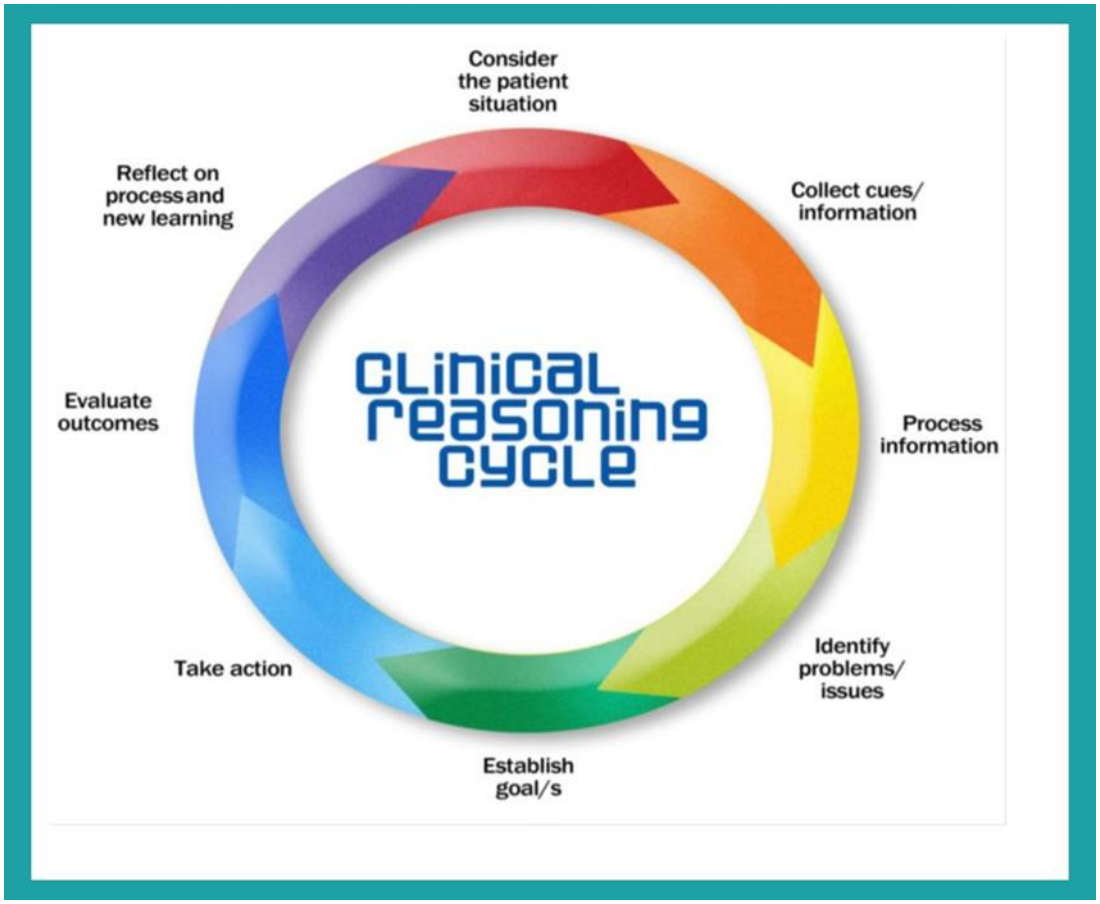
Reviewing first order constructs for similarity, subtheme or context led to classification into categories or themes as they emerged. The data was then reviewed for second order constructs using the codes and the analysis of these, established by the researcher. The data was managed in two phases, firstly by coding and analysis of the interview data then secondly by coding and analysis of the vignette data. The development of sub-themes from the semi-structured interviews proved fruitful, as the rich data allowed the researcher to discover key topic areas that stemmed from the interview.

In trying to stay true to a phenomenological study and capturing the lived personal experience of the individuals the fear of clumping data into themes was a concern, for worry of losing the individuality of the data (van Manen 1990). van Manen suggests that to avoid this the researcher should attempt to identify themes as they occur, unrestricted. The use of verbatim quotes within the findings captured in chapter six will go some way to overcome this. Segments of transcripts within Appendix 22, demonstrate the use of verbatim text as first order constructs with associated codes and thematic interpretation by the researcher.

Not all the data was considered for interpretation, however. Any sections that were unrelated to the research question were excluded such as instructions on the research process and consent gaining for the study.

The vignette responses were considered separately. Each interview recording was listened to repeatedly to gain context and then the transcript read and analysed in the same way as the interviews. Coding was applied using inductive and deductive methods to understand the narrative behind the decisions made and the relationship to the research questions. The vignette discussion transcripts were then reviewed against a recognised history taking model (Fishman & Fishman 2010) which is a widely adopted within the medical domain and an appropriate tool for the assessment of patients with undiagnosed conditions. The findings were then reviewed against the clinical reasoning cycle (Figure 5.3 below) adapted by Hoffman (2007), Alfaro-LeFevre (2009) and Anderson (1991). This was undertaken to establish the stages undertaken by prescribers in their decision-making from presentation through assessment and fact finding through to interpretation of data and goal setting. The cycle also encourages individuals to reflect on similar experiences and learn from them. The process will therefore focus on demonstration of analytical aspects of assessment and the intuitive practice employed by expert practitioners according to Benner (1982), which result in decision making. The results will be presented in chapter six.

Figure 5.3 Clinical reasoning cycle adapted by Hoffman (2007), Alfaro-LeFevre (2009) and Anderson (1991)



5.5 Summary

This chapter has charted the research methods employed within the study from ethical approval, data collection, the rationale for the use of two methods of data collection and the analysis of the data. The findings will be presented in the following chapter.

Chapter Six: The findings

6.0 Introduction

This chapter presents the findings of the interviews with nine, nurse independent prescribers, including four males and five females, all of whom were employed by large NHS Trusts within the West Midlands region. Four participants worked in a community setting and five within acute NHS Trusts.

Using van Manen's (1990:87) interpretation of phenomenology and his approach to research has led me to focus on addressing the concept of 'themes' and identify fully the 'point' of the narrative. Simplifying information in in this way this is intended to help the reader, make sense of the 'lived experiences' of others. Themes have subsequently been used to present the large volume of data from this study in a logical and informative way so that the reader can begin to interpret the findings. The themes are supported by verbatim quotes from the participants using pseudonyms to identify them. In order to ensure that all participants' 'voices were heard' quotes were used equitably where possible. This can be demonstrated in the frequency of comments chart seen in Appendix 23.

6.1 Interview Stage

6.1.1 Presentation of findings

The qualitative findings, from rich data retrieved by complex human interaction, cannot easily be reduced to numbers, according to Anderson (2010) and therefore the data is presented using verbatim description. Firstly, the findings from the interviews will be presented, followed by the findings

from the discussion related to the vignette. The findings from the two parts of the study will be initially separated to firstly present the interview process and explore the narrative around the 'lived experience' of the prescribers. The discussion around the vignette will focus specifically on clinical reasoning and the individual decision-making strategies adopted by the NIPs to manage the clinical situation presented to them. Themes from both the interview and vignette will be analysed and then integrated to enable further synthesis and present new knowledge.

Quotes of less than twenty words will be embedded within the text with longer quotes presented as separate from the main body of the text and identified in italic script. The presentation of the themes will take no particular order and no one theme is thought to have more importance than another. Together the findings from the interviews and vignette responses will represent how the prescribing role is perceived by the participants. The interviewees will be identified and addressed using a pseudonym to maintain confidentiality.

6.1.2 Interview findings

The interviews produced a significant amount of rich data which required more than just the identification of words or phrases that were similar, but provided an opportunity to understand the meaning of the words being spoken. Adopting a superficial review of narrative text can lead to a lack of understanding of the true meaning of the data and is something than van Manen suggests is often problematic in studies that report phenomenology as

their basis (van Manen 1997). As such an in-depth analysis of the data was required.

An initial interpretation of the data identified sixteen sub themes which emerged from discussions during the interview stage. These have been compared for similarity of substance and consequently categorised into four overarching themes as seen in Appendix 21. This categorisation also notes the number of participants discussing each subtheme, denoted by the numerical ordering of the interviews.

The findings from the interviews will be used to answer two of the research questions:

1) What do nurse prescribers understand by the term 'scope of practice', and how is this professional boundary defined and adapted?
2) What influencing factors do nurse prescribers recognise with regards to their prescribing practice?

The following sections will address the main themes their associated subthemes (Appendix 21).

6.2 The context of knowledge acquisition

The theme, context of knowledge acquisition, incorporates six subthemes. The subthemes include the rationale for prescribing education, preparation for the role, assessment or diagnostics skills, expanding prescribing opportunities, the transfer of theory to practice and continuous professional development (CPD). The subthemes will be presented individually.

6.2.1 The context of knowledge acquisition - Rationale for role development

To explore the lived experience of nurse prescribers it was considered important to understand their prescribing journey and where their motivation and rationale for undertaking the course originated. The responses were variable although there was a strong aspiration for personal development, which was highlighted by a third of the participants as they reported their decision to become prescribers. This is reflected in the comment from Ian:

> *'I think it was my decision just purely wanting to move on and think that the fact because it was my decision and you know …….So I was quite motivated to do it and I am glad I did it, purely by the chance of the way I did it.'(Ian)*

For others, it was the potential for improving their career prospects and job security, rather than any personal aspiration, that motivated them to undertake the course, as articulated by Beth:

> *'I am already currently undertaking a master's pathway with **** in advancing professional practice so the nurse prescribing was one of my elective modules to build up my portfolio…'*

Beth later described prescribing as *'a core competence'* for her role.

Improved career prospects were only partially the reason for Carl undertaking this new role as he recalls a desire to be perceived as superior to his peers:

> *'….to improve my job prospects, I think and my job security and there was a little professional one-upmanship……'*

What was also evident was that some nurses felt that their clinical role depended on the successful achievement of such a qualification and that there was an obligation to complete the course to meet the requirements of their current role. This extrinsic motivation was expressed by Alan:

'…five years ago, we made that part of the job description because I helped develop the job description and I was the first one, so we said you need to have prescribing…you need to be a prescriber for this role"'

An overwhelming view from all those interviewed, was that prescribing was perceived to be a positive role expansion and one that was recognised to have a personal benefit to them as a clinician by increasing their knowledge and skills, whilst also benefitting their patients and the wider clinical team as articulated by Diane:

'To benefit me more and ultimately then the patient.' Taking some control, I suppose and trying to minimise waste and maximise benefit for patients'

Conversely for Gail a feeling of even more pressure on colleagues to become prescribers and less reliance on those willing to do so was a concerning situation:

'But then when you have joined a service where that is already happening, I do think that the girls who have joined the team now, will have a lot more pressure to do prescribing rather than what I had when I had the choice to do it so…'

6.2.2 The context of knowledge acquisition – Motivation for role development

Despite a significant development to their clinical role, by creating greater autonomy, no one interviewed undertook their prescribing training with the expectation of any financial renumeration, although job security was clearly a contributing motivational factor for three of the participants. Carl, Diane and Ian all engaged in the prescribing training for personal satisfaction and a desire for new knowledge as Ian explains:

'No, I think it was my decision just to purely wanting to move on and think that the fact because it was my decision and you know while the course was hard and the tutors you know quite hard going tutors. the motivation was there to carry it on.'

The majority of those interviewed demonstrated extrinsic motivators to the completion of their prescribing training, based on an obligatory requirement of their current or future role as affirmed by Erica *"…it included a prescribing module, which is obviously … needed for the role."*

Irrespective of the motivational factors influencing the participants to undertake a prescribing course, the ultimate benefit of such role development was clear. Improving practice and maintaining patient safety was key for three participants, who recalled that their motivation to become prescribers stemmed from their concerns linked to the process of 'prescribing by proxy'[2] which many had previously engaged in. The completion of the prescribing course was considered by Gail as a way of reducing this practice and improving patient outcomes:

'I was making suggestions for medications to GPs for them to prescribe the medication, which I didn't feel myself was best practice…….'.

Prescribing by proxy was, and still is, a relatively common practice and although not illegal, this type of prescribing poses significant risks to patients based on the inadequate pharmacology knowledge of nurses in general. Undertaking a prescribing course was seen to mitigate this risk.

[2] This term refers to situations where clinicians guide others to make prescribing decisions, without possession of an appropriate prescribing qualification

Gail described her initial formulary as one that contained the drugs that she had been 'prescribing by proxy' for some time. These were drugs that she was recommending to a GP for prescription, based on her knowledge of the disease area and her assessment of the patient although not necessarily with the appropriate pharmacological underpinning, that she now has. At no time was the GP asked to confirm a diagnosis prior to the prescription request in any instances discussed. Neither was the individual asked to justify their decisions or recommendations. This suggests an assumption of appropriate knowledge and skill by the medical staff and a degree of trust. Carl who was a V100[3] prescriber initially, also recalls asking his GP colleagues to prescribe for a condition that was not covered in the community practitioner formulary a term which he understood and referred to as 'prescribing by proxy':

> *'I was almost prescribing these drugs by proxy for five years previous to this and in many respects by suggesting that antibiotics be given for a chest infection that…you know, drugs that I couldn't prescribe as a V100 prescriber …'*

Despite Carl seeing this as a method for patients acquiring prescriptions without seeing their GP, it is unclear if Carl had the appropriate assessment skills to make the correct diagnosis in order to request this prescription. Physical assessment preparation and indeed diagnostics are not a prerequisite for the V100 or V150 prescribing course.

The realisation of risk from previous 'prescribing by proxy' practice, was also noted by Fern and Beth following their prescribing preparation training. There

[3] A specialist practitioner prescriber with limited prescribing opportunities from the community practitioner formulary.

was a distinct recognition that their role related to potentially unsafe practice and something that they were now acutely aware of as outlined below:

> *'….the one thing that the course taught me absolutely, was what I was asking people to do, because that was always what you did and it was only when you went through all of the accountability it was an absolute mind blowing, mind opening situation and it's made me very, very, very aware of what I ask for and have asked for in the past year' (Fern)*
>
> *'…you didn't always think about that element around medication, you only had that level of knowledge you would have as an administer of drugs as an RN' (Beth)*

This awareness of their lack of knowledge, was evident from several individuals who were somewhat amazed by their deficiency in pharmacology knowledge prior to commencing the course, irrespective of their level of clinical practice and perceived knowledge. The discussion based on assumed knowledge prior to prescribing, and the subsequent realisation of what was previously unknown, and the potential impact this may have had on patient safety identified concerns. For those engaging with the process of prescribing by proxy the risk became a reality. This realisation is again evident in Harry's response:

> *'Yes, that occurred beforehand absolutely….. In hindsight it's not best practice and… but one only gets to know about these things or learn about these things basically through undertaking such courses as V300.'*

With a passion to improve patient safety and a thirst for knowledge the would-be prescribers commenced their prescribing journey at very different stages of their clinical careers and with very different preparation.

6.2.3 The context of knowledge acquisition - Preparation for the role

All the NIPs interviewed had accomplished their independent/supplementary prescribing training prior to the Nursing and Midwifery Council changes to their standards of education for prescribers (NMC 2018). Seven completed this professionally accredited course at undergraduate level and the other two as part of a postgraduate master's programme of study. The length of time since the completion of their training, was variable ranging from less than 6 months to greater than 10 years and as such the recollection of their education experience was variable although their enthusiasm for their role much less so.

The education providers identified by the participants, included two located within the West Midlands accessed by eight of the participants and one within the North West of England. Prescribing at this time was offered at many HEI's across the country although selection was generally based on proximity rather than anything else. Erica was seconded from her role as a paediatric nurse to complete a formal postgraduate qualification in advanced paediatrics, where prescribing was integral. She stated:

> *'I was incredibly fortunate, so when I got the trainee APNP post to go off and do my Master's I was fully seconded from this Trust.'*

Erica was the only participant to study outside of the West Midlands as there were only two providers of this type of education in the country. Erica chose the one closest to where she worked:

> *'Our whole master's included prescribing…..there was only one other paediatric focused …….. in **** for paediatric focused Master's in Advanced Practice, so that's why we chose *****.'*

Erica was also the only participant to be categorised as supernumerary during the whole of her prescribing journey. She recognised the benefit to her learning, from her supernumerary status over her colleagues on other similar programmes:

> *'Really beneficial actually, because there was no pressure, so it allowed me to ask the questions and not feel uncomfortable about writing anything, or being rushed, you know I could actually… I was additional to the numbers, I was in a learning capacity and training role,'*

Supernumerary status is afforded to student nurses and midwives on pre-registration NMC courses yet is not a requirement for students undertaking any post registration courses irrespective of their content. Nurse prescribing is one such post registration course requiring nurses to develop specific knowledge and prescribing skills whilst working in their clinical role leaving the learning opportunities in the hands of the student prescriber. A choice from two local HEI's was available to the other eight participants. Familiarity of education provider and the geographical location were reported as the most common reasons for HEI preference, by six of those given the option. Like Erica, accessibility was key for Gail too, her choice was merely that the HEI was local in proximity to the hospital where she was based and therefore, she found this convenient:

> *'I think I wanted to do it at ***** because it was local to the hospital and you didn't have to travel far in between if you need to nip to the office for anything…. It was actually quite convenient…'*

While Ian made a deliberate choice of provider based on the delivery pattern of the programme they offered, as he felt this best suited his individual learning needs and allowed him to concentrate on his own studies which

recognises the importance of addressing learning styles in education. He stated:

> *'I was happy to do it in the way I did it at ****, in the sense of I did it over like a week block rather than the odd days here and there. I thought that was better in the sense of you can spend the whole week actually focusing on it a lot more.'*

Some individuals were able to make a conscious choice between the two study locations, whilst others had no choice and as such convenience, location, familiarity and learning styles were no longer options as expressed by Carl below:

> *'I can't even remember being given a choice…. I don't remember seeing a list or anything it was just you are going to **** to do your prescribing.'*

It is not apparent that such lack of choice in education provider had any negative bearing on the individuals learning or outcomes, as all were fully funded by their organisations to complete the training and successfully accomplished the academic and clinical requirements. Pleasingly the overall response from those interviewed was that the education preparation undertaken was positively recollected, specifically in relation to the theory content which focused on the legal and professional aspects of prescribing. For Fern this was an important element:

> *'So, I start …from the course's point of view, I thought that it prepared me beautifully to understand my accountability, the rules and regulations, the laws, looking at reflections, all that kind of thing. Looking at my practice, all of that I thought it prepared me really well for.'*

The NMC approved course content is generic in nature and despite limited changes in the required content over a 12-year period this was deemed suitable and effective for most participants. This was described by Harry:

> *'it has to be generic because you got people from all sorts of areas and specialities undertaking the course at that level and if it was to be specific to your area of speciality, the course would probably have to be split up into separate classes and separate modules'*

In recognising the benefit of enhanced pharmacological knowledge, Ian acknowledged that additional specialist prescribing content would be beneficial for him as he expanded his prescribing remit post qualification although he accepted that at the time of training this was not a consideration or an issue:

> *'It met my needs at the time, but what I would have potentially liked in hindsight now so many years down the line is like follow up courses that would specialise in specific areas…'*

A component of the prescribing preparation which did cause some anxiety, was the requirement for enhanced pharmacology knowledge and understanding. This was recalled vividly by Diane: *'…so, I can remember being terrified of the pharmacology…'* Yet despite this there was strong evidence of the positive impact of this aspect of training that was noted by many the participants. Gail included:

> *'No, I think it was totally new, I think it was a real eye-opener when you start doing the pharmacology and you know all of the things that I learnt during the course'*

Concerns were also raised specifically related to the requirement to understand and apply the principles of pharmacology with little or no prior knowledge of the subject area. Some participants found this to be particularly challenging. Ian expressed his concern related to this:

> *'I think it was very difficult in the sense of I had never really had to go to that depth into any kind of science really in relation to that, so I found it was very difficult. I can't remember the tutors name that did it, but he was*

a really nice gentleman and he really made it understandable, but I did have to read an awful lot to try and fathom it out.'

Ian continued to explain that pre-reading prior to commencement of the prescribing course, would have benefited him specifically as pharmacology was not included in his traditional nurse education:

'…maybe having prereading it in relation to pharmacology but well in advance before you start the course, it would give you a bit more of the basic level of understanding before…'

Three of the participants had previously trained as V100/V150 prescribers and had some experience of prescribing although this was not meeting their perceived needs.

6.2.4 The context of knowledge acquisition - Expanding prescribing opportunities

The desire to enhance patient care was particularly noted in discussions with the three nurses working within a community setting. They all recalled wanting to extend their practice with as much scope to prescribe as possible to improve patient care. The desire to extend or deviate from what was perceived as a restricted prescribing remit, within the V150/V100 community practitioner prescribing formulary, was evident from discussions with Diane who considered that this qualification restrained her potential:

'Because I could literally only prescribe dressings and you know which were, which were really important for my role, but they were, at that point, you couldn't even prescribe a steroid cream.'

Fern another community nurse describes being given the option of completing either the V100 or V300 qualification as both were relevant to her areas of practice, opting for the V300:

> *'So, I wanted to have prescribing and I didn't really see the point in just doing the one bit, I might as well just do the whole thing'*

Whilst there are a significant number of prescribers working from the community practitioner prescribing formulary within the community the clinical value of the V100 qualification was distinctly lacking in the estimation of Carl, Fern and Diane. Carl recalled his lack of ability to prescribe for the patients he reviewed, which he deemed was a consequence of this perceived ineffective formulary. This lack of opportunity to prescribe required an additional consultation with a GP thus resulting in extra resource, cost and a delay in treating the patient. These frustrations are evident in Carl's response:

> *'I think, and in that time I had already got a prescribing qualification and it is strange because I didn't consider it a prescribing qualification - I did the V100 District Nursing and I think to myself I wasn't a prescriber until I did the V300 – it is odd…'*

Despite wanting to prescribe for all his patients the knowledge and assessment skills required were not necessarily in place for Carl or others.

6.2.5 The context of knowledge acquisition - The value of assessment and diagnostics

Despite physical assessment skills being a prerequisite for independent/supplementary prescribing (NMC 2006) not all nurses accessing prescribing have certificated skills, certainly those with the V100/V150

qualification. Six individuals were required by their employer to complete a physical assessment module prior to undertaking the prescribing course, to meet the professional requirements. Beth undertook a physical assessment module as part of her previous postgraduate study. Ian believed this type of preparation was beneficial to his subsequent prescribing training.

> *'….also done a physical assessment course at master's level while I have been at **** as well, so you know well it was a duplication of some of it, it was an extension to a higher level and it was more beneficial and I think having a physical assessment course prior to having the prescribing course is a good element to have.'*

Interestingly Gail was deemed to have significant experience, by her manager, in physical assessment, from in-house training to allow her the opportunity to undertake the prescribing course. Despite a lack of formal preparation, Gail reported that she felt adequately prepared for her specialist role by the in-house training that was provided. There was no assessment to ascertain Gail's level of knowledge or practical skill at this point. There is also some ambiguity related to who approved the training request and how and by whom the judgement of appropriate prior assessment skill was made. Gail recalls covering principles of history taking and quotes the '*tips of running consultations'* suggesting her preparation may have been at a very basic level:

> *'…we have a new neuro-exam day. So, we do take part in that which does go through some of the principles of taking you know an assessment from your patients and also from the MS Trust. We get like an induction weeks' worth of package, so that actually also gives you some tips of running a consultation and things like that, but it wasn't actually a formal qualification from that.'*

Despite certificated, formal physical assessment preparation, for eight of the participants, there was a reported distinct lack of diagnostic underpinning for all. There was a sense of a lack of diagnostic ability because the content of the physical assessment modules completed, only included the process and practical aspects of assessment principles and techniques with no consideration for diagnostic reasoning. Carl discussed that the module undertaken by him worked on the premise of recognition of normal versus abnormal rather than on what the abnormal findings may relate to suggesting a partial application of theory to practice. He stated:

> *'…in my case, have principles of physical assessment course, which is the principles of. It is not advanced diagnostics course it's physical assessment. The words diagnostic doesn't occur in it,'*

The integration of prior assessment skills is therefore only one element that assists with the application of theory into prescribing practice. The development diagnostic reasoning and the development of drug specific knowledge are also fundamental.

6.2.6 The context of knowledge – factors influencing the transfer of theory to practice

New knowledge, often related to the development of pharmacological underpinning, was identified as effective by both Diane and Ian. Their prescribing training provided them with enough knowledge, specifically related to pharmacodynamics and pharmacokinetics, to confidently challenge what they believed to be poor practice by their medical colleagues. One hospital prescriber, Harry, also discussed witnessing prescribing errors by members of

medical staff. These related to drugs that had been inaccurately prescribed by not considering the patient's weight when identifying the desired dose. Harry reported feeling sufficiently confident after completing the prescribing course to subsequently challenge medical colleagues about this error, however, prior to the course this would not have even registered as a concern to him: *'I have found that an awful lot of their prescriptions has actually been prescribed incorrectly'.* The application of knowledge and appropriate patient assessment, appear to be key factors in safe decision-making when prescribing. The situations reported by Harry, led to safer practice and a considerable cost saving for the Trust too:

> *'an awful lot of patients had their Immunoglobulin dosage reduced accordingly, and as a result of that it was a safer treatment for the patients but also a huge cost saving as a result.'*

A similar situation also prompted Alan to recognise a dose change was needed, when factors related to renal insufficiency had not been considered by medical colleagues:

> *'Also, I change other people's prescribing decisions because they are on the wrong dose. So, patients come to me who have been assessed by somebody else and they are given the lower renal dose because…'*

Similarly, Ian discussed his ability to recognise that a prescription, written by a medical colleague, was contraindicated and therefore unsafe, meaning an alternative was needed. He found it more challenging to decide what to do about this situation, as evidenced by his concerns below:

> *'I remember on one occasion the GP was shut and the lady needed some antibiotics for her leg the doctor had been prescribing a specific antibiotic in the past which was contra-indicated with all the medication and shouldn't be given ….., so I had to figure out what to do.'*

Whilst the examples given cannot be generalised to suggest poor medical prescribing practice across the board, it is evident that the potential for drug errors occurs irrespective of a prescriber's background. Vigilance and full patient assessments are therefore needed to ensure patient safety. NIPs are in an excellent position to facilitate this.

The acquisition of knowledge is not only an important consideration during prescribing preparation and training, as this was also reported as highly relevant post-qualification. The accessibility and uptake of ongoing education in the form of continued professional development (CPD) was variable amongst those interviewed.

6.2.7 The context of knowledge acquisition - Continued Professional Development (CPD)

For the participants who accessed CPD, this was evidenced as part of their required development for professional revalidation purposes. A variety of methods including formal updates, study days and informal meetings with colleagues were used to update participants' knowledge. The topics for these updates varied but were often dependent upon the prescribers' area of clinical interest and practice. Alan revealed that his Trust supported nurse prescribing forums, which he valued stating: *'We have a non-medical prescriber meeting once a month.'* Access or availability of this type of forum was not consistent in other organisations, however.

The forums attended by Alan related to clinical conditions and discussions connected to the availability of new therapies. Other participants who were

able to access CPD prescribing forums, recalled that the focus related to the legislative and professional regulations of non-medical prescribing. These were a biannual event for some participants, arranged by employers and reported by Ian as beneficial to his practice:

'…every so many years you come, and do, you know, your legal update in relation to prescribing and apart from that it tends to be you know peer support and chats around that kind of perspective……'

Interestingly not all prescribers engaged in prescribing updates despite their availability. As these were not mandatory there was little obligation to attend. Carl suggested that for those organising the training or professional updates, they were merely monitoring attendance at the events rather than the impact of the update itself:

> *'what they could do, is they could actually have, I think, competency update sessions that are no good because again, it is competency by attendance'.*

It is because of this that Carl reports that little value was placed on the learning that had taken place during these sessions, or the impact of this on prescribing practice. Despite regular professional updates for some prescribers, there was still a notable requirement for more specific CPD, which is directly related to individual roles as indicated by Ian:

> *'…what I would have potentially liked in hindsight now so many years down the line is like follow up courses that would specialise in specific areas, so for example, my team really do not prescribe IV Antibiotics.'*

Despite the changes in professional revalidation requirements, there is still no specific obligation to formally demonstrate the maintenance of knowledge and skill related to prescribing (NMC 2015) or evidence of maintenance of competency.

6.3 Perception of competence

6.3.1 Perception of competence – views on personal competency

The concept of competency was explored with the participants and their understanding of how this related to their own practice was discussed. Whilst most participants had a good understanding of what they believed their competence to be, the ongoing assessment and maintenance of competency in relation to prescribing was much less clear. Most were able to articulate this in relation to their role. Beth related this to *'whether you are a novice or an expert – it is always around you knowing what your limitations are'.* Fern found the concept much more difficult stating the following:

> *'That's a really difficult one to answer! I mean you undertake … I mean depending on what you are looking at with regards to competency… that you undertake education…. How is it measured? How do we know that? I think that's a really difficult one to say, because I would say that everyone of us assesses, students, or anyone else that we are very differently.'*

For Alan, competency was also not particularly well defined. He described it in the following terms: '*giving the right drug to the right patient and with the right follow up.'* This relates more to the administration of medication rather than competency. The notion that competence is used in a variety of ways and applied very differently was noted by Carl:

> *'you can go anywhere, do anything to anyone and prescribe almost anything as long as it is in your sphere of competence. But the Trust is giving you that impression that your steering competence is actually bigger than it is.'*

Carl described competence as *'vaporous',* suggesting that this was consistent with an unconscious incompetent state. He also discussed his concern that individuals practise without fully appreciating the risk behind their practise stating:

> *'Oh right – OK. Competence is vaporous because I couldn't… I don't know what I don't know, so I could consider myself competent in something, but I don't know a lot about that thing – well if I don't know? Do you understand what I am saying?'*

Carl continued to explain that he believed competency to be a *'transitory'* state too that is likely to occur for some individuals. He suggested that levels of competence vary over time and are dependent upon levels of practise and may not be transferrable within roles.

> *'Erm, competence is transitory, so you could be very competent in one stage of your career in prescribing for renal problems, and then you could leave that department and then go to another department and your competence does not remain at that level.'*

Harry also suggested that competency is neither a fixed or static state and suggested it is more linked to developing prescribing formularies and the awareness of the need to understand new medication, rather than the broad overarching concept of competence, which links knowledge with skills, behaviours and practice. He offered the following:

> *'No, they're not fixed because we are always learning we always furthering our knowledge boundaries and there are forever medications which are new and come onto the market and so your competencies are expanding all the time.'*

The requirement to provide employers with a self-defined, annual competency declaration, was one governance arrangement enforced by employers and discussed by four participants. This self-evaluation was based on prescribers recognising their scope and boundaries. This competency declaration process fell outside the annual appraisal process and was requested by the prescribing leads for some Trusts, the justification for this was not well communicated. This process was referred to by Erica:

> *'And we have to do this annual declaration of competence on non-medical prescribing policies, something like 64 pages long, I think that talks volumes.'*

The requirement for annual declarations was not representative of all organisations, yet a formal process of this nature was felt necessary by Fern. Fern expressed a belief that prescribing competency should form part of the NMC revalidation process*, 'It should be part of your revalidation really, don't you think?'*, implying that prescribers should be reappraised to ensure that they are working both safely and effectively and encouraging equity of practice.

Despite this, much of the governance around prescribing practice appears to be left to the prescriber to establish their own boundaries for practice and make decisions based on their perceived competence and confidence post qualification. This is evident in Diane's response: *'That's when I say I self-limit that's the way I did it really'.*

Whilst discussion focused on using competence as a measure to decide whether to prescribe or not, I was keen to understand if prescribers had ever veered from this personal governance arrangement. Participants were asked

if they could recall any incidents where they may have prescribed outside of their perceived competence. Eight participants reported that they had not '*knowingly*' prescribed outside of their perceived competence but reported times when they had considered this, but the fear of repercussions stopped them. The fear of making a drug error loomed large.

Carl did admit to prescribing outside of his competence but quantified this by suggesting this was what he saw as a form of transcribing[4] of medication. These were drugs that had previously been prescribed by another prescriber and he believed that not prescribing in this situation would have posed an unnecessary risk to the patient and was therefore worthy of the risk:

> *'The notion of transcription or the notion of prescription wasn't anywhere as well understood by the Trust's or the individuals involved. I think consciously I transcribed because I have no idea what transcribing was in essence, and we weren't writing on a medication chart like a hospital chart we were writing a prescription and that is what it felt like to us.'*

The term transcribing was understood by all other participants Beth recorded this practice as *'transferring information from one sheet to another and again it is about making sure you dot the i's you cross the t's'* and while some had engaged in this process as registrants, before gaining their prescribing qualification, they were aware of their role as a prescriber and had not subsequently prescribed for others in this way. This was despite being asked to do so but fear of retribution, again appeared to be the rationale behind declining to

[4] Transcribing can be defined as the act of making an exact copy, usually in writing. Transcribing is the copying of previously prescribed medicines details to enable their administration (RCN 2020)

transcribe in this way. A clear and consistent message from the participants during the interview was the impact of confidence on their prescribing practise.

6.3.2 Perception of competence – the link to confidence

Over half of the participants reported that confidence in their own knowledge and ability fundamentally dictated their prescribing practise as indicated by Beth: *'….and confidence I think as well is a key thing with prescribing'.*

Confidence was reported to develop over time, although for some this took a significant timespan. The delay from time of qualification, to prescribing within the organisation, was interestingly deemed to be the main cause for this lack of confidence. The delay was assumed to be caused by an administrative failure within the organisation to set up the practical aspects of prescribing, such as the ordering of prescription pads. A delay in prescribing post qualification, was a common factor for a third of the participants and this generally caused a degree of anxiety. This anxiety is reflected in the response from Erica:

> *'I think the delay was almost too much though, because you lose your confidence, and that was a shame, because actually at the time you feel empowered, you are raring to go, you have been given the support and education you need in a supportive role.'*

Conversely, Harry reported the positive aspects of the delay from completion of the course to prescribing, which afforded him additional time to review medications prior to prescribing them and as such he perceived this as beneficial:

'I feel that it gave me time to actually read up more and to look at them, or other sources of actual assistance and help, so like MHRA NHS England and so on and so forth, and I found that beneficial.'

Harry still attributed his initial lack of confidence to the delay in actively prescribing though: *'So, the time delay was beneficial from one perspective…. frustrating and it didn't help my confidence'.* Despite the legal, professional and organisational authority to prescribe, with or without a delay, Diane recalls the lack of willingness from her colleagues to prescribe, which she related to a perceived lack of confidence:

'…..some of them had done it as part of district nursing when it became incorporated into the specialist practice role, I know a lot of health visitors had to do it and would really probably have chosen not to do it at all. So, the fact that they'd got the qualification didn't mean they were necessarily going to use it even though they do have opportunities where it could be valuable for them. So I think there was that side of it and I don't know, I'm not sure why people didn't, maybe I suspect when I look back and I think about the people that didn't, I think maybe they lacked confidence'

A number of those interviewed acknowledged that their knowledge was not limitless, and they choose to rely on the confidence in their ability to make sound judgements in their prescribing decisions. This was expressed by Ian:

'I think it is you prescribe what you're confident to do. ……..I can't think you know everything; you know you know the total in and out to the n-th degree but as long as you're confident with what you're prescribing is right….'

There was also a concern from Carl that nurses may not be competent to prescribe in all areas of their determined practice and therefore, do not recognise their own scope of practice. Carl expressed that this was difficult to deal with amongst colleagues as detailed in the following:

'I think there are some professionals who haven't got the competency to do anything and I think there are a number of us that sit in the middle, but

what I do worry about is these professionals who will have a go, you know, based on what? I just think that the difficulty with prescribing is with no control only…'

This suggests that prescribing practice may not always be appropriate, and that individual and employer interpretations may overtake professional expectations.

6.3.3 Perception of competence – Defining scope of practice

When asked to provide a definition for scope of practice and what this meant to the participants as prescribers, the response and understanding was hugely different. For Gail the term competence was used to describe her scope of practice suggesting a lack of clarity of the term, although she was confident that because of the specialist role she was working in, she prescribed within her scope of practice: *'Well I think I am quite lucky because I am working in one area, which is my area of competence.'*

For two thirds of the participants, who had a broader prescribing remit, their scope of practice was, unsurprisingly, difficult to define. Erica stated the following:

'Whereas within this Trust, we have to then get our own formularies which is you know working in general paed's it's almost the whole BNFC you know it's…'

Scope of practice was much easier to define for those who worked in specialist roles such as Alan who could clearly articulate his prescribing boundaries:

'…anticoagulation and the cardiologist section of the BNF. We kept it a little bit on the broad side and the rate and rhythm control drugs haven't changed but the anticoagulation has.'

An individual's scope of practice was often reported to be defined by their job role, title or agreed as an expectation by their employers. This would suggest then that a diabetic specialist nurse can prescribe medication directly related to diabetes. This does not offer any clarity of how their prescribing relates to other aspects of diabetes management including the associated consequences of the condition such as neuropathy and where boundaries lie. Defining scope of practice is therefore important. Harry suggested that scope of practice is also defined by professional guidance:

> *'OK, scope of practice is working within an area of practice which I am fully familiar with and competent to do so. I think that today in our current climate with NMC guidelines and access to the internet and all the available information through protocols in the hospital and so and so forth, that people are far more aware now than ever of their limitations and their abilities to be within their scope of practice.'*

Scope of practice was just one of the influences on prescribing practice that was discussed during the interviews.

6.4 External influence on prescribing practice

One of the themes noted during the interviews was the influence from others on prescribing practice, whether this was from drug representatives, peers, medical colleagues, or patients. This influence was identified as either supportive or as a form of external pressure, which required the individuals to make a choice about the actions they chose to take.

6.4.1 External influence on prescribing practice -the importance of support

Support for prescribers featured strongly in responses, with participants valuing the encouragement particularly from their designated medical practitioner (DMP) during their prescribing training. Gail referred to the importance of this support:

> *'…although she was very supportive, she used to set her own homework as well as your Uni work, so she did add a little bit more work to the course. But actually, you know I think she was cruel to be kind in some respects that she wanted to make sure that I was certain with decisions and things like that before she would sign me off, so …'*

While Fern recognised the support from her DMP who knew her well prior to taking on this role: *'And so, he was happy to support me because he knew my previous role'.* One cannot be sure if this backing would have been as favourable had the DMP not known Fern previously. Many of the DMPs chosen to support the participants were previously known to them.

For Erica still having a mentor eight years after completing the prescribing course was considered extremely beneficial and reassuring to her: *'…and I am really lucky with the consultant that I have still got now as my mentor.'* Erica reported this had helped the development of her ongoing competencies and confidence.

The assistance that individuals received during the prescribing course from their DMP, managers or peers was, however, for some transient, in that once the prescribing course had finished so did the support. Yet for others like Erica the collboration continued. Some individuals felt less supported in their new

roles from their employing organisations. Erica likened the support she had to the feeling of being protected in her role, but then continued to report that at times, it felt like this protection was not for her benefit but was creating a culture where the organisation was protecting itself. These concerns are evident in the following:

> *'And from a prescribing point of view in particular, there was nothing in place, which was just frustrating, so one of the things that I did was the prescribing…….. So, if I am being openly honest and frank, sometimes I think they are extremely supportive and protective, but then I think some other days I think they are only protecting themselves and not protecting me as a prescriber.'*

Where prescribing practice was positively encouraged by peers, managers and medical colleagues, this proved beneficial and aided confidence building of NIPs. Erica recounted the benefit of this and admitted to feeling more confident consequently: '*They have been quite supportive …….I would never feel pressurised to write something there is always other people that could prescribe'.* Interestingly, Diane suggested that a lack of support can also have the opposite effect. She recalled that not all teams offered a supportive environment for prescribing colleagues to flourish as outlined below:

> *'And I don't know whether if you are not confident in yourself, and some teams sort of don't instil and nurture that sense of confidence I think, sometimes teams can be quite… I mean I feel lucky; I was in a you know it wasn't a brilliant team when I started, but we sort of ended up working together and it worked really well, and we all supported each other. But I think in some other areas it's not necessarily working as well as that, and I think if you haven't got a supportive nurturing team and you haven't got a supportive nurturing organisation underpinning that then it's a case of well you know.'*

Carl who had also been prescribing for many years recalled a lack of support, recognising the limited governance arrangements for those early prescribers

and a feeling of being left to self-govern which he admits directly influenced his practice. He stated:

> *'Prescribing, as I say, in my recollection it was relatively new; it wasn't as well monitored or policed as it is now, and there was almost a notion that once you got it, you could do what you wanted with it'*

It appears from dialogue with Diane that the organisational culture can also have a significant impact on individual practice:

> *'And I think depending on the teams and the culture within the teams and the culture within organisations that that can undermine people's confidence or willingness even to put themselves out there really.'*

Variance in the support and governance arrangements was evident throughout the discussions with some notable discord between prescribers and employers.

6.4.2 External influence on prescribing practice - self-restricted or organisationally imposed formularies?

This notable lack of agreement between employers and participants related specifically to the identification of a drug formulary and a disconnect between what both parties perceived as the requirements of the roles. There was a clear disconnect between perceived individual responsibilities and the organisational expectations. For Erica, this caused both frustration and confusion:

> *'So, people acknowledge that you have done their qualification on the ethos is non-medical prescribing and they're happy if you are happy to prescribe in your area of competence and confidence. Whereas within the trust we have to then get our own formularies which is you know working in general pead's is almost the whole the BNFC.'*

From the individual accounts heard, prescribing formularies varied significantly and for some participants these were significantly different to those adopted on completion of the prescribing course, with no additional preparation for this expansion of prescribing remit. All those interviewed were required to propose their prescribing formulary on qualification. This was embedded as part of the prescribing training and was consistent across the HEIs although some prescribers were expected to include five drugs whilst for others this was twenty drugs. The personal formularies chosen varied from individual to individual, from one that focused on commonly prescribed drugs in specific areas such as antibiotics for infections, to drugs used within a disease or treatment area such as multiple sclerosis. This is reported by both Diane:

> *'I did extend the wound care side if you like so, antibiotics for example, if you'd got an infected wound being able to prescribe antibiotics was really valuable. And some of those things that weren't on the V150 formulary related to wound care so those were the sort of things that I was really comfortable with. There were, the other aspects of district nursing which I particularly enjoyed and wanted to help, and support was with palliative care.'*

Many participants recalled restricting their formulary to five drugs initially, at the start of their prescribing. These were drugs that they became very familiar with and were drugs they had expected to prescribe regularly within their role. For others the initial formulary was a whole section of the British National Formulary (BNF) which allowed them to treat a specific group of patients or manage a specific long-term clinical condition such as atrial fibrillation for Alan:

'*We kept a little bit on the broad side and the rate and rhythm control drugs haven't changed but the anticoagulation has.'*

For others the formulary was much broader despite reviewing five drugs as part of her course, Beth now considered the whole BNF as her formulary:

> '…*there is such a broad spectrum of health issues that you have got to manage……prescribing for particular conditions that have been agreed with ***and the CCGs and **'.*

This is somewhat concerning as Beth is very new to prescribing and adopting the breadth of such a formulary appears risky but one that is accepted by her employers. Despite the development of her own personal formulary during the prescribing course, translating this into prescribing practice for Erica was reported as challenging. In her account of this event Erica reported that nurse prescribing was a new role in 2011 in her clinical area of the Trust. She recalled that at the time there was no agreed process for formulary development within the organisation and as such the planning process was challenging:

> *'…because I was one of the first Advanced Paediatrics Nurse Practitioners within the Trust, nothing was really set up for us to actually then prescribe. So, we then had to go through the Drugs and Therapeutic Committee, we had to get the Lead Nurse, my consultant mentor, my manager, and the lead for the Drugs and Therapeutic Committee to sign me off to say they would be happy and then we had to develop our own formulary, because it is in such generic practice, it is very difficult. So, then we have had to develop these formularies, which then have to be submitted and go through, then my Consultant signs me off to say he is happy after the meetings and I will then go ahead and prescribe those drugs'.*

From the varied discussions with the participants, it can be noted that, there is a sense of lack of consistency to prescribing governance. The approach taken to develop initial formularies and then extend personal formularies differs significantly, whilst for some prescribers their formulary was pre-defined by their employers without consultation. For those individuals with

clearly defined roles, for example the three specialist nurses, Gail, Harry and Alan, they perceived that this made their choice of formulary much easier as expressed by Gail and Alan:

> *'…initially, it was to prescribe the disease modifying treatments, so it was to be able to take that responsibility on, to be able to monitor the patient, monitor the bloods and then prescribe the drug from thereon.' (Gail).*
>
> *'Well what we said was from my portfolio it would be anticoagulation and the cardiologist section of the BNF. We kept it a little bit on the broad side and the rate and rhythm control drugs haven't changed but the anticoagulation has.' (Alan*)

For others their formulary was often self-selected based on their previous clinical experience and of the patient care requirements in their current role. Despite a sound knowledge base and skill in a certain area of clinical practice, this appeared to be disregarded by one organisation, which was both frustrating and confusing for Fern. This resulted in a formulary that did not match Fern's perceived competency:

> *'The formulary that I wanted to adhere to, was the end-of-life patients, because that was something that we were keeping at home. Also, as I said the people with the uncomplicated infections and exacerbations of the COPD, that kind of formulary was the one that I was happy with'….. Interestingly enough it wasn't the one that the organisation I was working for wanted me to work to, which proved interesting.'*

When questioned about the perceived rationale for this Fern suggested that the prescribing lead at the time lacked understanding of the specifics of the role and as she was the first prescriber in the organisation, this gave the impression that all community staff should have the same prescribing remit and set a precedence for future practice. Fern stated: *'…probably didn't understand the role of community matron and what I was doing actually…'*

The lack of support for new prescribers to develop their formularies was a concern for Carl, who conversely reported a lack of organisational control over his prescribing remit. He suggested that tighter controls were needed to ensure prescribing safety was maintained by novice prescribers.

> *'HEIs… train people how to prescribe, not what to prescribe and I think they do that well, but what I don't think is then done well is that the newly qualified prescriber isn't marshalled in any way.'*

Others, however, talked about their organisationally imposed formularies which were not addressing their knowledge and skill base. They felt that these focused on the role or job title as a deciding factor in setting the formulary, rather than the experience and competence of the individual. This was evident in Fern's response:

> *'Because the formulary that they set out was very much the community matron formulary, and in it was things like adjusting insulin doses and that was something I was not comfortable with doing. So, trying to get them to see that the formulary shouldn't be just about what other people had done, but actually what I was comfortable doing.'*

Within some organisations the prescribing governance arrangements promoted a *blanket approach* to prescribing formularies suggesting that everyone with a certain job role is competent to prescribe from the same formulary. For a novice prescriber like Beth adopting a prescribing remit that reflected that of other more experienced prescribers in the team, rather than adopting a personalised individual formulary based on Beth's personal clinical knowledge and experience, would suggest that blanket approaches are indeed used in practice: *'On the whole it would be a case of prescribing from the BNF'*

Conversely one acute Trust chose to adopt a staged approach to formulary development, for their novice prescribers, including commonly occurring medications initially, which they referred to as a primary list. Additional drugs were added to the formulary at a later stage. This *primary* list focused on drugs to treat new presentations of illnesses, acute conditions or self-limiting illness rather than long term conditions. Inhalers for asthma were included on this list, however, asthma is not a self-limiting illness. There was no indication of a time scale - when the addition of these *additional drugs* would be included or any indication of how the individual was deemed suitable for this formulary expansion and if and by whom competency was assessed. These concerns were raised by Erica:*'…we did develop one formulary and that was soon changed, so it was changed to a primary drugs list and then additional drugs list.'*

Fern was particularly challenged by the organisational approach to agreeing a suitable prescribing formulary and unaware of the pressure that would be applied to prescribe from a predetermined formulary. These concerns are reflected by Fern:

> *'I suppose I wasn't prepared for challenges to what I thought I was competent and confident to do against what other people would want me to do.'*

6.4.3 External influence on prescribing practice-governance arrangements

The governance arrangements for the adoption and maintenance of prescribing formularies were reported as variable across the organisations. Control over prescribing remits was introduced in one organisation by a newly

appointed prescribing lead and mentioned by one of the district nurses Carl. He recounted a distinct change to his prescribing practice because of this:

> *'…there wasn't that organisational input into necessarily what I prescribed they did however, start introducing you know the Pac Data and things we used to get that fed back to us so that we used to have regular meetings then around who was prescribing basically just to say who's prescribing what.'*

When referring to the governance arrangements Carl explained that he believed that the new arrangements were aimed at those nurses who were not utilising their prescribing and to try and understand why, as stated: *'And, and that from a Trust point of view I can see was purely a waste of their time and effort and money putting them through it,'* Carl suggested that at this time there was encouragement from employers to prescribe wherever possible: *'…so I think in the early days a lot of it wasn't so much around restricting as encouraging.'*

This initial encouragement to prescribe and somewhat free rein appeared to move into a more restricted process with the development of Trust formularies and greater organisational control over drug choice according to Carl who subsequently felt a sense of loss of autonomy from this change:

> *'And then it sort of evolved into being more of a well and they started bringing in formularies wound care formularies etc, etc so that you couldn't prescribe outside, or you weren't supposed to…….. … So, they did start to bring in that organisational structure to what was actually allowed to be prescribed.'*

Despite the organisational control that was deemed to be restrictive for Carl, Ian, who worked for the same organisation, had different opportunities. He was able to extend his prescribing remit to match his current job role which

he reviewed positively: *'So, I think my formulary for what it was then to what it is now, bearing in mind a change in role has changed quite a lot.'*

Why such governance differences occur within organisations is unknown. What is clear, from the discussions, however, is that these decisions are locally derived. This can be noted by the concerns raised by Fern who reported a challenge when wanting to add controlled drugs into her formulary. Fern recalls discussing her role as a district nurse managing palliative care patients and wanting to prescribe controlled drugs at end of life. Resistance was noted from her employer as Fern recalls:

> *'The Trust at the time, would have preferred I wouldn't look at end-of-life medication. They would have preferred that I would have looked at the other things like the insulins and that.'*

Despite possessing a sound knowledge base and a desire to improve patient care Fern was encouraged to prescribe in areas where her perceived competence was lacking and guided to more commonly prescribed drugs:

> *'But you know in my previous experience I had actually set up with one of the doctors, the guidelines that we use for end-of-life, so why wouldn't that be something that I am comfortable, well confident and competent to do? So yeah, it was not so much expanding as actually probably wanting to direct me somewhere where I wasn't feeling confident at that time.'*

When asked if there was a rationale given for this decision, Fern reported that fear of allowing nurses to prescribe controlled drugs was likely to be the reason, as expressed in the following:

> *'Hmm this is probably going to be a slightly controversial thing to say in that I think at that time the thought of nurses prescribing controlled drugs, perhaps frightened them a little bit.'*

Conversely a district nurse from a different community trust Diane, was less keen to prescribe controlled drugs, for fear of getting it wrong, in their early days as a prescriber which demonstrates the variation in scope of practice amongst prescribers in similar job roles:

> *'…So, I did feel really uncomfortable, it was a ridiculously low dose 7.5, I remember it, and the pharmacist felt a bit uncomfortable as well.'*

It is not an uncommon situation where new roles are developed, and infrastructure and governance arrangements are yet to be established which then causes uncertainty of role and responsibility and unclear boundaries according to Erica:

> *'There has been numerous challenges and I think in implementing a new role is difficult and something that is so generic, I think it was really difficult. Not only from a peer's level, so not only from nursing staff, to the consultant bodies, the doctors, to also your management as well.'*

Whilst governance arrangements and internal prescribing cultures can lead to a perceived pressure to prescribe in clinical situations outside of a prescriber's scope of practice so can pressure to prescribe from patients and colleagues.

6.4.4 External influence on prescribing practice - pressure to prescribe

The concept of pressure to prescribe was notable and its impact varied between individuals. Feeling an obligation to prescribe for some participants was very real. A variety of perspectives were expressed in relation to the external pressure on NIPs to make a prescribing decision. The pressure to prescribe was reported to be directed from both the patients and colleagues.

In relation to competence the overall response from those interviewed was an cognizance of their prescribing limitations and an awareness that they could refuse to prescribe should they feel this was necessary. Using the confines of a formulary was reported as beneficial and one way to address this pressure to prescribe. Expressing their reluctance to prescribe based on a lack of confidence was another. Pressure to prescribe from patients was reported as a regular phenomenon by both Fern and Ian who were both prescribers working in community roles. Despite the regular demands both were confident enough to decline the requests when they felt these were inappropriate.

> *'Yeah you do get patients that say automatically presume you are turning up and they want antibiotics and obviously when you say 'well you don't need them' and then you have justify it luckily at the moment there is new leaflets about the use of not needing antibiotics, so we take them out with us as well' (Ian)*

Whilst Ian chose to use literature to support his decision not to prescribe in these situations for Fern her strategy was to offer a reminder of the role of the GP to reinforce her decisions which is evident in her response:

> *'So, you know if I was going in because somebody had got a urinary tract infection, but they wanted a repeat prescription doing at the same time. I would be 'no, I have come to do this, this is what I am prescribing this for, this is what you need to do for you that, that is something that you can deal with your normal kind of surgery.'*

It is not only within the community settings where such pressure to prescribe from patients is reported. One specialist nurse, Gail, reported a regular request from patients to prescribe therapies that they believed were appropriate or had heard about via the media. Gail reported that she was unable to support their request because of a lack of evidence base as she recalls:

'A lot, a lot of pressure by patients and especially now that the Press have released this information on cannabis, there is not a patient that doesn't come to clinic who asks me to prescribe cannabis and my response is, 'Unfortunately we haven't got anything to prescribe you at the moment'.'

Gail continued to discuss her patients' expectations for her to treat conditions that would ordinarily be managed via their GP. These situations required her to negotiate and provide patient education to explain why this was not possible, as she explains:

'So, you know I think that the pressure is there from patients knowing that you are a nurse prescriber to do that……., it is an expectation I think that you write their prescription there and then'.

But it is not just patients who regularly apply pressure on prescribers, their non-prescribing colleagues also regularly make requests for prescriptions from nurse prescribers as explained by Gail:

*'somebody did come around from Gastro to ask me to prescribe a sedative, because I was a nurse prescriber in the hospital and they had been told from pharmacy that **** can prescribe, and they walked into the department and I just said, 'No way.' and you know they haven't come back since, so that's quite reassuring.'*

How prescribers respond to these requests is variable as indicated by Fern who recalls setting clear boundaries about her prescribing practice on completion of the prescribing course and made sure all her team knew about them as detailed in the following:

'No, because I made it very clear to them that the prescriptions that I do, and did back then, is one that I make on my own assessments and I don't… you know, you cannot do it by proxy'

Two of the community staff did not recall any pressure from peers to prescribe or their behalf. Ian cited that most of his team were already V150 prescribers

and therefore they had some understanding of the implications and were therefore, less likely to apply pressure to prescribe. Ian states:

> *'I think the team I am in; I am very lucky. We are in a good team and a lot of them you know are V150s anyway, so they understand about prescribing and proxy prescribing and pressure things like that.'*

A very different situation occurred in other areas of both community and acute trusts where requests from colleagues to prescribe for patients who had not been assessed by a prescriber were more common as indicated by Carl:

> *'Staff nurses are asking: 'Oh the Nurse Practitioner is here, he will be able to prescribe this, this, this and this,' or 'She will be able to prescribe this, this and this,' and there is almost a tacit pressure: 'You'll be able to do that won't you – you'll be able to do that won't you?'*

Carl explained that a refusal to prescribe was sometimes difficult and that it took courage and conviction to say no, as a sense of guilt crept in and a concern for the patient's welfare.

> *'It is very difficult professionally for people to say no for whatever case. It takes a strong professional to say 'no'. Once you start it is the thin end of the wedge and very often you may be the only port of call the patient has got.'*

While it appears that there is huge variation in the influences on the practices of prescribers, it is the responsibility of the individual to decide the choice and appropriateness of any prescription they write. It cannot be assumed that experience prevails in this situation as prior to the prescribing course Beth regularly asked colleagues to prescribe for her patients and it wasn't until she completed the course that she realised the implications of this:

> *'Yes. Having done the prescribing course and looked at the legalities of where you are as a prescriber, I guess back in my CNS role I could make a suggestion and that person might take that suggestion and prescribe it'*

The realisation that past practices were unsafe was also clear by Gail's response:

> *'I was making suggestions for medications to GPs, for them to prescribe the medication, which I didn't feel myself was the best practice, because the GPs then weren't assessing the patient properly, they would just do a prescription based upon my suggestion and I hadn't taken a thorough history and gone through the whole process.'*

What emerges as key from the discussions is that the acquisition of new knowledge achieved by completing the prescribing course was an important factor in recognising safe and unsafe practices. This safe practice was also reinforced using national and local guidance to support decision-making.

6.4.5 External influence on prescribing practice - guidelines and protocols

The continued use of treatment guidelines and clinical protocols in prescribing was evident in many areas of practice. There appears to be a greater reliance on evidence-based practice and guidelines in the management of long-term conditions and infections specifically, which was noted in the discussions with the participants. Talking with the participants it appears that some Trusts have robust local guidelines which support practice whilst others rely only on national guidance. Whilst guidelines were supportive for some prescribers including Ian and Erica, they can also restrict individual decision-making and individual patient care:

> *'I think I am quite fortunate I think we have got a lot of pathways and policies which support your prescribing practice.' (Erica)*

Guidelines were used by prescribers to avoid prescribing practise, in situations where pressure from patients was noted. Gail reported the positivity from the

use of guidelines, when patients requested specific treatments that were not clinically indicated:

> *'because we have got the support of the guidelines, we are very lucky that we are able to say, 'Oh unfortunately you know you wouldn't meet that criteria', so we have got that backing of that with regards to the disease modifying treatments'*

Guidelines were, however, not positively recalled by all participants, with Diane relating the effect of local guidance negatively impacting on her practise*:*

> *'So, I sort of recognised the value of having formularies I think I just got irritated that they were not prescribers and they were telling me what I could prescribe.'*

The use of guidelines did act as a decision-making aid, for novice prescribers according to Beth:

> *'I have the prescribing rights to be able to commence things like antibiotics, general analgesia, palliative medication. If somebody has got a blood pressure issue, I can look at what we would prescribe…….. So, there is always backup there to help you make a decision.'*

Guidelines are not effective, however, for the management of multiple comorbidities according to Fern, who recalled that following guidelines for a specific condition was counterintuitive when the patient has other comorbidities and individual decision-making was required in order to weigh up the risk versus benefits.

> *'That is something that I have thought long and hard about, particularly recently, is because an awful lot of pathways, particularly when you have got more than one problem, so comorbidities. The pathways only stick to their condition and when you have got several conditions the treatment of this condition is going to have an impact on that one.'*

This suggests that guidelines and protocols, whilst beneficial, need to be used in conjunction with patient specific criteria and individual assessment and

clinical reasoning to ensure appropriate individualised decision-making. The discussions highlight both similarities and differences between individual prescribing practise and the challenges faced in everyday prescribing practise. Further interpretation of these findings will be included later in the chapter when these will be merged with the findings from the vignette. The findings from the vignette and second method of data collection will now be presented.

6.5 Vignette Findings

The findings from the discussion related to the vignette provided data which specifically answered the third research question.

What strategies do nurse prescribers employ when making prescribing decisions?

The transcripts were again individually reviewed, firstly for their response based on the participants' approach to history taking and clinical reasoning. The responses were considered against the medical model of assessment (Fishman & Fishman 2010), cross referencing the questions posed by participants against the headings identified within Appendix 24. This considered the depth of questioning related to each category compared to an accepted and recognised approach to history taking. Examples of the specific responses from Beth, who works in an acute care environment, and Fern a community nurse can be seen in Appendix 25.

The responses to the vignette were then scored using a scoring system previously used by Sodha et al (2002:311) (Appendix 26). This offers a

numerical value to the responses given, with a score of three, indicating a correctly identified issue and appropriate solution, to a score of zero where the participant was unable to identify the issue or offer an acceptable solution. A comparison of all participants' scores can be seen in Appendix 27.

More than half of the participants reported that the clinical situation was outside of their perceived competence although many continued to offer an assessment and management strategy. The percentage of participants considering each of the twelve domains of history taking, can be seen in Appendix 28. Whilst the history taking component was one element of consideration, each transcript was also reviewed independently against the clinical reasoning cycle (Adapted from Hoffman 2007, Alfaro-LeFevre 2009, and Andersen 1991). Beth's responses and her rationale for the clinical decisions made, can be seen in Appendix 29.

The findings demonstrate a variance in the degree of consideration given to the individual component. All participants considered the patient and reviewed and gathered information and attempted some assimilation of this based on their underpinning pathophysiology and pharmacology knowledge. The interpretation of the data differed significantly with some able to offer pattern recognition and others making a decision at this stage to describe this as outside of their scope of practice. For those individuals that were able to appropriately identify problems and establish potential solutions and goals they were unable to evaluate the outcome of their actions in this artificial setting.

Analysis of the transcripts was then undertaken using the discussion element of the vignette, which identified 16 subthemes. These subthemes were then reviewed and categorised into three broad themes. There was notable overlap in some of the themes from the interview stage and this will be synthesised later in the chapter.

6.6 Perceived Competence

6.6.1 Perception of Competence - linked to scope of practice

A recurrent theme of the vignette discussion was again the importance of working within clinical competencies. Of all the nine participants, competency featured significantly in their response to the vignette. The discussions identified those individuals who perceived they were competent to prescribe and those that considered this situation to be outside of their competence.

Four of the participants below decided that they would not prescribe in this situation offering individual reasons for their decline:

> *'no, I am only paediatric trained I did a 10-week adult placement and that was it in my training,' (Erica)*
>
> *'obviously it is not my area of expertise and I wouldn't know that she is having an exacerbation of COPD I would have to get some advice.' (Gail)*
>
> *'I only see patients with atrial fibrillation '(Alan)*
>
> *'I would automatically think that this patient has presented with breathing issues or respiratory issues and that is not my area of speciality, so straight away I would be looking for probably guidance as from somebody in that speciality, as to what would be the appropriate way forward with this patient's treatment.' (Harry)*

These decisions were based on their reported scope of practice and they all articulated their refusal as a demonstration and an awareness that this clinical

presentation was outside of their area of clinical competence. Interestingly Harry did say, however, that in an emergency he would be prepared to prescribe in this situation despite this being outside of his scope of practice. Harry did not elaborate on what he classed as an emergency or if he had been in this situation before:

> *'If any changes to their medication were required as an emergency, but not in an emergency situation, I would not be undertaking changes to their medications if I wasn't familiar or felt unsafe"*

These findings again suggest the direct correlation between competence and scope of practice.

6.6.2 Perception of Competence - confidence and its link to competence

In articulating their decisions to prescribe or not, the concept of competency was once again linked to confidence and the effect of confidence can be seen in Beth's rationale for her decision-making:

> *'In this situation I don't think I would be fearful or feel a lack of confidence for treating COPD or diabetes but I do know if I was in doubt that I have other colleagues that I can rely on and other protocols and procedures and I think that is the key thing.'*

Beth's role on an elderly care ward provided her with numerous opportunities to recall comparable circumstances in practice which boosted her confidence in managing similar situations. Erica provided a similar perspective suggesting that confidence in one's individual ability develops over time despite perceiving this as lacking during her early time as a prescriber: *'Yeah definitely I think you get more confident as well'.* One third of those interviewed reported that competence develops over time as Ian alludes to: *'I think that I have always said*

that we do now, five years down the line it will be totally different, and from when I started off back in 2011, it is totally different.'

It is unclear if this is merely the duration of time as a prescriber, or recurrent similar presentations in practice, clinical support or a combination of these that aids confidence in prescribers as all appear to have an impact on confidence.

6.6.3 Perception of Competence - the benefit and risks of experience

It was, however, prior clinical experience, that was the most significant factor in deciding clinical competence as described by the participants in their rationale for decision-making. Two thirds of the participants candidly reflected on their prior clinical and prescribing experience or lack of experience, during the discussion and this was noted to have a direct effect on their decision-making in the vignette situation. This was evident in Erica's response:

> *'But you're also basing it on your own experience I supposed to some extent in having managed particular situations in the past, so I suppose that's where you develop your confidence in the decisions that you make.'*

Clinical experience was recounted as relating to the development of new knowledge and practical clinical skills over time as recalled by Alan:

> *'My consultant said to me this is the basic information I want you to gather but that was sorted day one that was 5 years ago, and I've built on that because things have changed.'*

During the interview only two of the nine participants, however, directly recognised the value of their clinical experience on their clinical judgement, as indicated by Diane *'most people have preferences based on their experience and what they've used previously'.* Although Erica inferred that complacency in a role or situation was a by-product of experience and occurred when situations

presented repeatedly. She continued to report that this complacency leads to habitual practice. Erica recalled prescribing the same drug for the same situation based on habit rather than on a full and holistic assessment or skill:

> *'Experience counts for so much and I think you have got to have a certain amount of education understanding and know the ins and outs of things but actually experience when you have seen something 20 times for example and you have seen 19 of those times this has worked you are always going to try that first so then you try things because you've seen it work then you know actually the last time I used the last 10 times I use this this works so it's just experience from seeing it.'*

This type of habitual practice was also noted by Carl. Carl alluded to using pattern recognition as a trigger for prescribing which is common practice when dealing with similar clinical presentations. He suggested that this often replaced a holistic assessment and recognised the risk in some situations:

> *'we do go down the lines where there is probability bias in every encounter it looks like a duck quacks like a duck it's a duck so I will give them that and pattern recognition you know is a dangerous thing as it's good thing you know.'*

For Alan, it was not habitual practice that was noted, in his responses but the assumptions he made in relation to the expected medication that someone with a respiratory condition should receive which suggests not only assumptions but a lack of complete assessment to clarify: '*So they have probably got a steroid inhaler there'.* Alan did however note that this presentation was outside of his competence and reassuringly continued by suggesting an appropriate referral.

6.6.4 Perception of Competence - referral strategies

Despite the commonality of the clinical presentation in the vignette or the specific fields of practice discussed by all participants, there was consensus that referral opportunities were available should they be required. This was confirmed as availability during all consultations irrespective of the time or location. This was a comforting factor. The referral opportunities mentioned were not necessarily to medical staff, as several references to specialist nurse referrals were made. This is evident in the following response provided by Ian:

> *'or if they are known to the respiratory team they are back to the respiratory team. Or if they are known to the community matron, to the community matron to review all their medication.'*

When asked to clarify why referrals were required, there were two discrete reasons noted. These related to the requirement for an assessment or prescribing decision which was perceived to be outside of the participant's scope of practice. Secondly, if the patient had multiple comorbidities that participants were reluctant to prescribe for. The reasons for referral are evident in the following response from Gail:

> *'think I would have to go and get one of the doctors to assess her. Or, if she came into outpatients then I would probably whizz her around to you know, A&E or something like that, so that she is in the right area for the right condition really, because it would just be completely alien to me as to where she is yeah.'*

Whilst referral options were readily available from both medical and non-medical prescribing colleagues, clinical decision-making support was also valued from pharmacy colleagues, according to Harry. This support or advice

was often called upon when patients presented with polypharmacy, which presented a different challenge for him:

> *'If you don't know the drug yeah, you will look it up you know and so you go onto BNF on line and look at NHS guidelines etc, and also you would be contacting a senior pharmacist, which is usually available for you in every speciality.'*

Erica also used her pharmacy colleagues, to guide her decision-making but she referred to this purely as a double-checking mechanism, suggesting that her decision had already been made: *'If they are on a lot more drugs, or they are coming on drugs, it is like a multi pharmacy, I would ask the pharmacist.'*

Not everyone valued the support or advice of their pharmacy colleagues in this way, however. When asked about the support available from local community pharmacists Carl responded: *'No not at all. They were great, but as chemists.'* It is unclear why Carl did not see this role with the same value as other participants did. Pharmacists certainly did not appear to have any positive influence on Carl's practice as his comments suggest their role is as a dispenser rather than an advisor. This was not a situation noted by other community nurse prescribers.

6.7 External influences of prescribing

There were, however, commonly perceived influences from other external sources on clinical decision-making according to all prescribers. These influences had both positive and negative impacts.

6.7.1 External influences of prescribing - a reliance on objective data

The rationale for decisions made by all participants was multifactorial and relied heavily on the availability of objective data and the subsequent interpretation of this data. This data arose from visual cues and clues, reported signs and symptoms, examination findings and the results of tests and investigations. For four of the individuals their diagnosis related to the vignette would not be formalised until further investigations were undertaken to confirm their judgements. Beth made specific reference to the need for a chest x-ray to exclude an infection: '*I would be thinking of something like a chest x-ray to exclude we haven't got any underlying infection going on in the chest '.* Although she did not suggest what other findings may be identified from this type of investigation such as pneumothorax, cardiomegaly or tumours, or the unnecessary exposure to radiation from using investigations of this nature. Erica recalled that investigations such as x-rays were often requested based on prior experience in similar situations. For Diane undertaking investigations was merely about avoiding risk and not making assumptions.

> *'Like I say her blood pressure, all those sorts of other things that need looking at as well so it maybe that get on top of whatever's causing her shortness of breath.'*

Not all prescribers had access to investigation opportunities such as blood testing or x-rays and therefore saw less reliance on this additional clinical data. The requirement for objective data was, however, demonstrated by the evident importance of history taking which was key for all participants. For all participants this was vitally important in making their decisions about their

next steps in both assessment and treatment. There were clearly differences in the approach to history taking seen between the participants. Erica opted to follow a medical model in its entirety to ensure she captured all the essential information: '*Making sure you do thoroughly take a history'.* Ian, who worked in a community role, also expressed a belief that a very strict model of history taking was vital to ensure a safe and complete assessment was undertaken:

> *'and then we go in and do a full history, so from our perspective we do like to know where they are at the moment, the history of why we are here '.*

Conversely, Fern choose a more relaxed approach to information collection and suggested that this approach was ample to gather the information she required. This approach was effective in establishing all the necessary facts as noted in her responses charted in Appendix 27.

> *'I don't know that there is a particular model, but it seems to work in that you get a really good… it feels like I am asking them to give me the information rather than bombarding them with questions so I can get the soft stuff out.'*

Whilst history taking is an important assessment method, so is the ability to undertake a full physical assessment according to Ian, who implied that this was a crucial element of his role. The importance of this prior to making a prescribing decision is clear:

> *'but you know I always start off with any fits, faints, falls, moisture and mucosa, feeling the glands, you know because I am not seeing much mucosa, doing the ears, doing the eyes, but because it is a little check list, it's the same as what the doctors do but because it is a little check list it is really, really, good that you are covering every avenue from head to toe.'*

The ability to undertake a physical assessment was also important to Carl who believed that safe prescribing practice was based on this:

'I would be looking at it really from a clinician's point of view rather than a prescriber's point of view – that's where I would be looking, I am looking at the individual's safety rather than looking to prescribe her something.'

Not all individuals, however, had the knowledge or skills to undertake a full physical assessment. Gail choose to refer on to her medical colleagues to undertake a physical assessment as she felt that this was a situation outside of her scope of practice: '*I would have to get one of the doctors to come and assess her'.* Gail was the only participant not to have completed a formal physical assessment module prior to undertaking the course, which may be a rationale for her decision.

Carl, however, did recognise his ability to undertake an assessment yet acknowledged that he may not necessarily have the knowledge to make a formal diagnosis. This lack of ability he associated with lack of experience, knowledge and scope of practice. Following the fact-finding element of assessment, the use of guidelines and protocols again featured heavily in the next stage of decision-making.

6.7.2 External influences of prescribing - the use of guidelines and protocols

The use of guidelines and protocols to support decision-making was positively discussed, multiple times during the vignette discussion, as seen by the comments from Gail and Beth:

'*Yeah I think because we have got the support of the guidelines, we are very lucky' (Gail)*

'around decision- making I would use personally medical guidance …… we have got a section on exacerbation of COPD so that would guide you on what to do' (Beth)

The reliance on guidelines to support prescribing practice was actively encouraged by some employers, according to Carl, who recalled that his employers promoted the use of evidenced-based practice to support clinical decision-making particularly in areas such as antibiotic use:

> *'what I would look for then is actually antimicrobial guidelines from the trust or the BNF looking at that condition and what is indicated for that condition.'*

Interestingly for those participants working in specialist areas, guidelines and protocols were reported to significantly support their decision-making. Alan specifically recalled using them to enhance their decision-making in areas related to treatment choice and drug titration opportunities: '*Everything that I do is based on recommended guidelines from national organisations and associations'.* Conversely, Fern expressed a concern that clinical guidelines were in fact restrictive to her practice and had a negative impact on individualised patient care. She suggested that prescribers were required to use their clinical judgement to firstly weigh up the risk and benefits of using the guideline and protocols versus not using them, rather than use them to support their prescribing practice. Fern indicated that this was specifically the case where patients had multiple comorbidities:

> *'The pathways only stick to one condition and when you have got several conditions the treatment of that condition is going to have an impact.'*

For Fern deciding to treat in this case required a balance of risk versus benefit and this would need to be individually assessed, as guidelines were unavailable.

6.8 Perception of risk

Although most prescribing decisions were reported to be made based on the 'clinical picture' of the patient there were other factors that were considered.

6.8.1 Perception of risk - weighing up risk versus benefit

A common view amongst participants was the need to establish the clinical risk of prescribing a treatment versus the benefit of the drug. For seven of the participants this risk assessment was based on their clinical knowledge and experience from similar situations as seen in Harry's comment:

> *'I am so familiar with the treatments and I am really quite fastidious with all checks and ensuring that the treatments are safe to actually go ahead.'*

The experience of three individuals and their subjective decisions made were also based on what they described as intuition and soft skills of assessment, a skill that is difficult to demonstrate to others. Diane stated: '*you are also basing it on your own experience ….I always have this, you know when people, you're intuitive'.* There was a requirement for four of the individuals to ascertain further objective information prior to making any decisions which Harry describes as a process of clarification.

> *'so, when patients actually present, and they tell me verbally that they're on certain medications I would usually want clarification, written clarification in the form of a prescription chart from the GP or a discharge letter, as to whether the medication listing was correct.'*

This comprised of checking hospital medical records and GP records particularly to confirm medical history and medication history prior to making their decision as described by Erica:

> *'Well particularly in the GP surgeries, actually see what they have got on their EMIS, you know what they have been prescribed. I would also make sure they haven't been to see a consultant, and something has changed.'*

This information was not readily available for all the participants leaving a void in the ability to cross reference information prior to prescribing. The discussions highlighted considerable variance in the availability of information and need for this, suggesting very different approaches to assessment and decision-making.

The decision to undertake an assessment or examination was, for all the participants, made based on their individual perception of risk versus benefit to the patient, but also in conjunction with other factors. These included potential 'red flags' or conditions that required urgent attention according to Carl. '*I would be looking for clinical red flags and red flags for potential serious disease'.* Other factors incorporated clinical and non-clinical considerations which were made related to patient choice, their ability to take their medication and their compliance or concordance with other treatment and this was considered either clinical or non-clinical. An example related to non-compliance may be due to an inability to open a bottle or packet due to dexterity issues or a memory issue rather than a conscious decision to avoid taking the medication as alluded to by Fern:

> '*Has anything changed recently, have they been able to remember to take tablets, have they been forgetting to take tablets, is there one …sometimes is there something that upsets you, that you don't like taking because of the effects of it.'*

As such all these factors were deemed worthy of consideration when making a prescribing decision. Gail referred to her specific community role when asked

about her consideration of non-clinical factors. She reported that she would specifically check her patient's ability to manage at home and want to know more about their social circumstances before making prescribing decisions. She stated: *'How are they eating? How are they drinking? Is there anyone to help them was dress? Who is cleaning the house? Who is shopping?'*

While some of these factors again have a link to clinical influences, they also have a non-clinical influence as, for example, the ability to afford prescription charges may affect their compliance with treatment decisions. These were therefore worthy of consideration for some. For those working in hospital settings these factors appeared less of a concern although Diane also identified the need to establish a patient's ability to take medication as part of her decision-making:

> *'Able to understand what it is you are getting across to them, if they recognise the needs to take medication and are able practically so dexterity, etc.'*

The relationship of non-clinical factors and decision-making was, however, notably different between those employed in hospital settings compared to those working in community settings.

6.8.2 Perception of risk - clinical factors affecting decisions

Clinical factors such as comorbidity and polypharmacy were both considerations for all the participants. A third of the participants reported that patients presenting with multiple comorbidities significantly affected their decision to prescribe in a clinical situation even if the new condition was familiar to them. Fern reported:

> *'If you have got somebody who has got a second comorbidity, I mean she has got diabetes hasn't she with that it is whether anything you are suggesting will actually impact on the other condition.'*

While these views surfaced mainly around the participants' perceived lack of knowledge base, there was a feeling that their decision not to prescribe for one condition was significantly affected by concurrent conditions.

There were several medication considerations noted in the discussions, including the risk from multiple therapies, allergies and interactions. Four participants considered the risk of potential drug interactions as a significant issue when prescribing. This potential interaction could occur from drugs that were prescribed, borrowed, purchased over the counter, herbal in nature or illicit. Fern specifically focused on over the counter therapies when she explained this risk but did not explore any other potentials for interaction: *'Is she taking and medication from over the counter that I should be aware of.'*

A variety of tools were reportedly used to reduce the risk of interactions in practice. These included the use of the British National Formulary, online interaction checkers and pharmacists. Despite the availability of these resources Diane often decided not to prescribe in situations such as polypharmacy based on her lack of knowledge related to the wide range of therapies despite her familiarity with the condition requiring treatment:

> *'if they'd got medication that I'm not familiar with or then I'm going to take a step back you know and just sort of think, is this a situation where I should be prescribing.'*

Ian, however, regularly used a decision support aid in the form of an interaction checker, to ensure that any drugs that he was considering prescribing were safe to be taken with drugs already in use by patients:

> *'on the electronic BNF they also got the interaction checker as well now, so you can actually use the interaction checker which makes it slightly more easier for you to be able to do it, but the electronic version is absolutely brilliant because you put the drug in and can click interactions.'*

This online resource is available to anyone, in its basic form, with access to the internet. The use of concomitant medication was repeatedly mentioned during the discussions and the challenge this presented to prescribers, in deciding whether they had enough knowledge of the drugs to make a further prescribing decision. The need to balance risk versus benefit was mentioned by Beth: *'It becomes a bit of a balancing game, what do you do first?'*

It was not just the concomitant medication or polypharmacy that featured in decision-making but also the likelihood of concordance with medication prescribed. This was a consideration for more than half of the participants as expressed by Alan who related this to a patient who was actively self-monitoring their health and this, he believed, suggested that they were more likely to be concordant with medication.

> *'I have brought a list with me, there's my blood pressure and my pulse for the last…' I know this patient is going to take care of themselves quite well.'*

Other considerations affected decision-making, specifically related to the choice of treatment. In relation to the vignette the usability of the devices was established as influencing the patient's concordance with treatment according to Beth:

> *'What I see day in day out with older people, particularly with these that might have problems with dexterity is the reason they exacerbate in their COPD because their inhaler technique is very bad.'*

This suggests that a knowledge of not only drug options but available devices in which they are dispensed is also required when managing respiratory conditions of this nature.

The potential for allergies to medication and the risks associated with this were noted by all participants as a specific clinical consideration. A variety of perspectives were expressed in the discussions around allergy status, with some individuals considering drug and non-drug allergies and others like Alan only focusing on the allergy that was listed in the vignette suggesting a narrow perspective: *'I wouldn't give penicillin because they have got a penicillin allergy and I would check medication based on that.'*

For Gail it appeared that the only check for allergy status would be on instigation of a new drug treatment not on repeat prescribing opportunities Gail said:

> *'yes, so obviously if we are initiating a prescription from that, we would ask on allergies on that occasion, but it would be something that we would pick up at the newly diagnosed appointment 'are you allergic to anything?'*

This poses a risk for non-consideration of allergies that may have occurred from drugs prescribed by others. Diane alluded to the notion of a true 'allergy' was different to that of an intolerance and this would influence her decision on prescribing based on this information. Establishing clear facts was important to Diane to ensure both adequate and safe prescribing. She stated:

'you know then actually I don't want to give them a drug that's going to give them diarrhoea, but it isn't an allergy.'

The identification of clinical risks was clearly a significant consideration by all prescribers, but the assessment of risk was very subjective which appeared to be based on experience, knowledge and skill - all components of clinical reasoning (Hoffman 2007, Alfaro-LeFevre 2009, Andersen 1991) .

6.8.3 Perception of risk - non-clinical influences on decisions

There were, however, not only clinical influences on decision-making that were evident. Patient choice was a factor that was considered by three of the participants when contemplating treatment options. For those individuals who advocated offering the patient a choice this decision was fundamental. Interestingly these individuals, all work in specialist roles, and negotiation with patients about treatment options forms part of their usual practice as indicated from Gail and Erica's responses.

> *'Giving the patient as much information as you can, so they can make an informed decision' (Gail)*
>
> *'I would also like to know from her, what she is hoping that I would be able to do to help her today' (Erica)*

The same consideration was not seen by those working in more general roles who are less able to offer choice due to Trust formularies.

For Diane one important consideration highlighted was her desire to prevent a hospital admission for her patients and that was something that directly influenced the decisions she made: '*prevent her being admitted if we can get that started as soon as possible'.* Ian was also more likely to prescribe if it had

an impact on admission avoidance: '*somebody will go in again to follow her up that is how we work with our admission avoidance'.*

The findings demonstrate not only a variance in both history taking style and approach to assessment between the participants but also the array of broader aspects requiring consideration in any one episode of care, confirming this as a complex process.

The themes from the vignette discussion and interview have been presented singularly and will now be integrated and interpreted.

6.9 Interpretations of the findings from the interview and vignette

An idiographic approach was used to synthesise the findings from the study capturing the individuality of the content and the situations described. What is apparent from the analysis of the interviews and discussions associated with the vignette, is all participants valued their improved knowledge and were able to apply this in a variety of ways within their current roles. These specific findings suggested that the programmes of study attended were perceived to offer an appropriate level of educational preparation. The knowledge gained for all participants, stemmed from an approved programme of education based on NMC (2006) standards of preparation for nurse and midwife prescribers. The programmes were undertaken at three higher education institutions and demonstrated consistency of theoretical content and assessed outcomes,

although the prescribing practice for all participants was hugely variable on completion of their course, in part because of their clinical role.

In order to prescribe safely it was assumed that prescribers would have assessment and diagnostic skills to complement their new pharmacology knowledge. Despite the inference from the NMC that the completion of a module to prepare individuals for assessment and diagnostics is preferable, prior to starting the prescribing course, this is evidently not considered essential by all employers. If such a module is not undertaken then it is the responsibility of the employer to ensure *'the applicant has been assessed as competent to take a history, undertake a clinical assessment, and diagnose, before being put forward'* NMC (2006:9). Although it was possible to ascertain who had completed academic programmes incorporating physical health assessment prior to undertaking prescribing, it was unclear how individuals were prepared in relation to developing their diagnostic ability.

Despite completing assessment courses, individual skills in history taking and physical assessment differed significantly, and this was noted in the interviews and observed in the response to the vignette. This makes comparisons difficult as a range of methods were used to develop and assess these skills initially. A contributory factor to this may be the vagueness of the programme entry criteria, which allows variation in its interpretation, not only for the applicants but also their employers (NMC 2006). Evidence of physical assessment and diagnostic ability is not requested on application and therefore leaves the judgement of this open to interpretation. This important consideration of the

implications of a lack of diagnostic underpinning will be further explored in chapter 7.

There was a great deal of similarity in the overarching themes when comparing the findings from the interviews and the discussions around the vignette exercise. The similarities included conversations related to competence and confidence and how these affected the participants' scope of prescribing practice. Also seen in both parts of the study was the relationship of external influences on prescribing practice. The concept of prescribing within one's competence was acknowledged and recognised by participants with many using this phrase to rationalise their decisions throughout both parts of the study.

It was evident from both the discussions during the interview and vignette stage that competence and confidence are interlinked, and that NIPs often choose to work within their confidence rather than their competence in most parts. This is reflected in a reported lack of prescribing in clinically challenging situations, where the responsibility is passed to medical colleagues, for fear of 'getting it wrong'.

This was played out in the vignette exercise as several participants made the decision to refer on, rather than to decide to treat, despite having assessment skills and the prescribing opportunity based on their formulary. This lack of prescribing could, however, relate to lack of diagnostic ability and therefore was employed as a way of mitigating risk. The lack of prescribing concurs with earlier works from both Maddox et al (2016) and Downer and Shepherd

(2010) who have cited the lack of confidence as a rationale for non-prescribing in similar situations. The choice to not prescribe appeared to relate to risk aversion in some cases rather than a lack of competence, although it is unclear whether this was related to personal insecurities or the effect of organisational culture.

It is noteworthy that peer support and encouragement featured heavily in the development of levels of confidence and subsequent expansion of prescribing opportunities. Support and encouragement from medical staff and their peers were identified as a major contributor to successful prescribing practice, also noted in previous studies of non-medical prescribers including Maddox et al (2016). There was unfortunately no equity or consistency in the clinical support available between organisations, with some areas offering the minimum required based on professional guidance and others offering an extensive package of continued support pre- and post-prescribing qualification. Similar findings have been noted in studies by Carey et al (2010). The reliance on support mechanisms was evident from the decisions made in discussion related to the vignette. The rationales given for decisions made to refer or not treat were based on the perceived accessibility of support and the wide-ranging referral options available. What was also noted from the interview discussion was that areas of perceived competence were not necessarily translated into areas of prescribing practice. This appeared to be related to formulary control by employers.

External influences on prescribing practice featured heavily in the interview stage and factored into the decision-making process within the vignette. These

influences were reported to be both constructive and destructive to participants' prescribing practice and caused considerable variation in practice opportunities despite similarities in role and employers. The overarching influence was predominately driven by locally derived formularies and individual Trust governance arrangements which varied not only between organisations but between prescribers working within those organisations. This makes consistency difficult to ensure across clinical roles and more generally across Trusts. A similar finding was noted by Stenner et al (2010) who recorded that primary care nurses particularly preferred to work closely within protocols. No practice nurses were interviewed in this study to correlate these findings, although all participants used protocols to some degree in their practice.

Both the interview and vignette discussion identified an expectation from employers to adhere to guidelines and subsequent reliance on local formularies was noted, which affected the approach taken for the management of patients. Within the vignette this was noted to affect the therapeutic options available to prescribers, despite wider prescribing opportunities within the British National Formulary (BNF). Whilst this is acceptable for antimicrobial prescribing where areas of resistance may affect suitability of treatment, other rationales appear less clear although the inference of cost was made by some participants.

During both stages of the study, prescribers recounted challenges in practice which focused on the culture of the organisation and the governance

arrangements they worked within. The behaviour of others can be directly affected both cognitively and emotionally by the shaping, reinforcing and changing of an individual's responses according to Cameron (2009). This behaviour shaping affected decisions to treat or the ability to treat in some cases. Bowskill et al (2012) advocate that this all plays a part in how the individuals perceive and work within their role boundaries. This boundary was for some prescribers, however, difficult to justify. The reported expectation from employers to prescribe in areas outside of a prescriber's competence identified by some participants was concerning and this required a strong moral and ethical stance to refuse in these situations.

Local governance arrangements of this nature also present challenges to education establishments when preparing individuals for roles that may have very different expectations from employers (Nolan and Bradley 2007). Locally derived formularies and governance arrangements appear to surpass professional and legal expectations or clinical competence in some cases.

Irrespective of any extrinsic influence, personal beliefs impacted directly on prescribing behaviour and were noted in both the interviews and vignette discussions. This belief system included how prescribers perceived the importance, necessity and effectiveness of any proposed drug therapy and therefore their willingness to prescribe or indeed deviate from the proposed formularies, a situation previously reported in an early study by Hughes et al (2007). According to Hall (2006) experience itself may well be the driver for

this deviation. This behaviour can lead to what is referred to by Lally et al (2010) as 'habit'.

Habitual practice is demonstrated by the performance of a behaviour for a specific task using unconscious decision-making and is regularly reported in the practice of medical prescribers specifically those within general practice although often attributed to cost (Joyce et al 2011). The findings from this study noted a reliance on experience in some cases which appeared to lead to habitual practice, as participants recounted situations where they had prescribed without a full patient assessment. This was demonstrated in the vignette with decisions made based on nothing more than assumptions and the recall of practice and outcome in similar situations. This important point will be further explored in the discussion chapter 7.

Responses given to the vignette, for some participants related to what participants thought they may do if this situation arose, in future practice irrespective of prior experience. This suggests the positive balance of risk versus benefit in their decision-making. Perception of risk was a theme that was not evident in the discussion during the interview stage of the study, appearing only in the vignette discussion.

Many different approaches to therapeutic management by participants was also noted in the discussions related to the vignette, with some making judgements based on assumptions or expectations as a result of their incomplete or lack of history taking. Despite a standardised content for prescribing preparation the history taking approach of the participants was

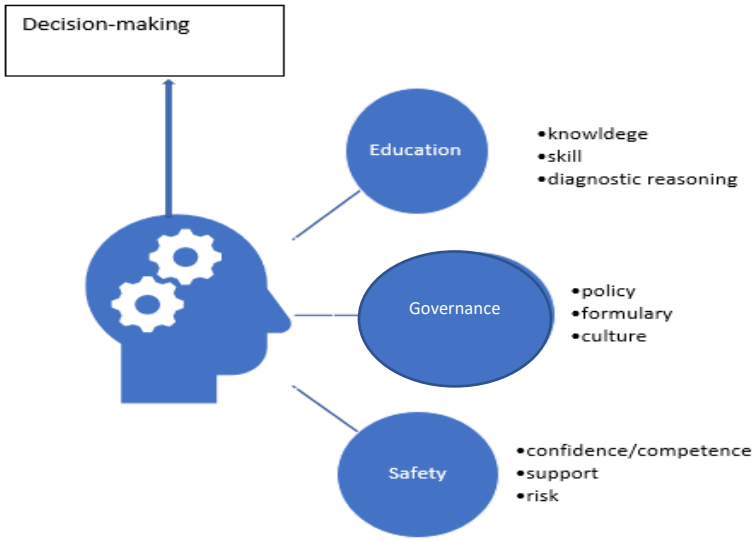
hugely different and minimal in some cases, suggesting that the importance of this for some prescribers is diminished. Evidence of this can be seen in Appendix 27 where only two participants completed a holistic patient assessment based on the medical model (Fisherman & Fisherman 2012). Considerations for family history and social history were notably incomplete by other participants but what is more concerning is the inadequate identification of differential diagnosis potentials as part of the clinical reasoning process.

The vignette presented caution for some prescribers, who identified the scenario to be 'outside of their scope of practice' which is consistent to that described in the interview stage. Cautious and self-limiting practice of this nature has been previously reported by Courtenay et al (2011). Croskerry (2002) expressed that *omission bias* or reluctance to treat can lead to disastrous outcomes as the potential effect of non-treatment is seen. Individuals in the *omission bias* category did judge this to be the safest option, however, and one which required a referral for advice from others, rather than offering a treatment decision. This approach demonstrates their understanding of the concept of prescribing within their competence. For other participants, their decision to treat was outcome biased. Participants articulated their rationale based on likely outcomes and this is consistent with a subjective approach. The concern here relates to the potential for lack of objective data or evidence base to this type of decision-making. It was also evident from the variety of decision-making options that the environment within which the participants worked notably affected their practice. For example, working in a

neurology outpatient setting restricted potential for this type of clinical presentation and therefore the participants made a sensible decision not to treat.

The main aim of any prescribing practitioner is inevitably effective, safe prescribing practice which enhances patient care (Courtenay et al 2006). This was noted in both stages of the study by all participants. The findings that emerged from the discussions related to the vignette, however, demonstrated that processes and procedures for clinical decision-making are variable amongst NIPs and there are several factors that affect the decisions made, as indicated in figure 6.1 below and the combination of these factors along with individual perceptions of scope of practice will result in different approaches to prescribing practice.

Figure 6.1 Diagrammatical interpretation of findings



6.9.1 Researcher reflections

To ensure a phenomenology study is appropriately undertaken van Manen (2017) advocates the consideration of both epoché and reduction. Reduction by the researcher has therefore ensured the focus on the experiences of individuals has been maintained before it was interpreted or reflected on (Dowling 2007).

The broader aspects of participant involvement in the study required consideration to ensure both trustworthiness and credibility of the study. Returning to Finlay's (2002) categories of reflexivity prompted due consideration.

Introspection - The researcher recognised that the wealth of their own knowledge and experience as a prescribing clinician and academic has had a significant benefit to understanding the phenomenon in question. This is likened to an insider perspective as discussed in chapter 4.8.1.

Intersubjective reflective -Acknowledgement of the relationship with some of the individuals taking part in the study was also noted. Five individuals were known to the researcher, with three of these ex- students that were taught directly by the researcher during their prescribing training. This may have had some influence on their willingness to engage in the study. It was, however, more than five years since the individuals concerned completed their prescribing training and no contact was made with participants prior to their offer to engage so no coercion is unlikely and not or reported.

Social critique perspective - There were potential power differences to consider, particularly with those individuals who had been educated by the researcher. This may have affected their willingness to honestly share their own reflections particularly related to their educational journey. This was not noted as in fact the power dynamic was shifted in favour of the participants, as they are prescribers with currency of knowledge and practice and are therefore now the experts in their own field of practice. The interview process effectively allowed all participants to share their own individual journey and experiences.

Mutual collaboration – This was possible by allowing the participants to be co-constructors of the research and actively using their verbatim quotes within the findings above and attributing meaning to these.

Discursive deconstruction - This required the researcher to pay particular attention to all the potential meanings of the text from the dialogue in order to avoid assumptions. This was of equal importance in the vignette stage as it was not just the words used but the breadth of clinical consideration that was important to note. For example, participants referring to concurrent medication may suggest consideration of other medication, but there are numerous categories of medication that need to be addressed such herbal, alternative and complementary therapies. It was therefore important to avoid assumptions that all these had been considered and offer the opportunity to discuss medication in its fullest sense. In analysing and interpreting the data it was important to remain cognisant to the risk of misinterpretation from

cocreated interview material (Townsend et al 2010) and stay *ethically vigilant* in the reporting of the interview data. This was achieved by regular contact with research supervisors who reviewed transcripts, and methodological approaches to analysis and this role was fundamental to the study.

The research journey itself spanned seven years and has required tenacity and resilience. During this time, the researcher has recognised personal development, greater confidence with research strategies and an improved understanding of research methodologies and methods as a consequence of the study. The value of effective and supportive supervision has been evident in this development.

6.10 Summary

In summary the synthesis and analysis of the findings from the interviews and discussion related to the vignette, report effective academic preparation in terms of pharmacological underpinning for the prescribing role. The effective and safe application of new knowledge, however, develops over time and is positively affected when working in a supportive environment. Decisions made about prescribing options are effectively driven by individual levels of confidence and governed by local arrangements although are notably impacted by diagnostic ability and habitual practice. These will be further explored in the following discussion chapter.

Chapter Seven: Discussion of findings

7.0 Context

The aim of the study was to understand the lived experiences of nurse independent prescribers and consider how those experiences impacted on their clinical decision-making. The findings from the interview and vignette discussion highlight issues that have implications for education, practice and professional guidance. The data highlighted commonality in themes related to the perception of competence and the influences on prescribing practice, along with the perception of risk. The notable findings that emerged are presented within the context of the available international literature related to nurse prescribing, decision-making and the associated theory, although this could be extended to the broadest context of prescribing.

7.1 Application of theory to practice

Prescribing is not merely the accurate writing of a prescription, but the application of theory related to assessment, examination, diagnostics and associated decision-making strategies. Herklots et al (2015) suggest that such a complex role requires an in-depth knowledge. This study would concur, and the findings demonstrate that this in-depth knowledge culminates from a combination of prior experience, skill, practice and underpinning education. All these components are vital for the preparation of safe and effective nurse prescribers (Abuzour et al 2018b) and prescribers more generally. For educationalists preparing prescribers for the variety of prescribing

opportunities within their diverse roles, this will continue to offer a challenge as previously noted by Kamarudin et al (2013).

This challenge is correlated by the finding from this study, which demonstrate that not all non-medical prescribers begin their journey at the same juncture in their career or educational background. The same can be said for medical and other nonmedical prescribers. Considering this fact, a clear understanding of the educational and clinical foundations required in preparation for the prescribing role is important. Future prescribers and their employers need to be cognizant of the impact and potential shortfalls of inadequate preparation. The variability of prior academic and clinical preparation identified in the study, reflects that seen nationally as noted by Downer and Shepard (2010) and internationally by Noblet et al (2017) where physiotherapists felt unprepared for their role as a prescriber. Downer and Shepard's study highlighted concerns related to the pharmacological preparation from almost all the nurse prescribers interviewed, despite a recognition that the education has benefitted their role. Whilst many earlier studies acknowledged the distinct lack of pharmacological underpinning for prescribing (Lewis-Evans and Jester 2004, Hall 2006, Offredy et al 2008, Maddox 2011, Herklots et al 2015, Abuzour et al 2018b) this was not identified as a concern by those taking part in this study. Kroezen et al (2011) recognises this is an important component of the prescribing preparation across the world. Courtenay and Gordon (2009) made specific reference to the assessment and diagnostic ability of nurse prescribers in their study, but this was in relation to the CPD needs of current

prescribers not the lack of diagnostics in preparation for prescribing as seen in the findings from this study.

This study has identified that whilst assessment skills and competencies are reported and recorded for all potential prescribers, the depth of assessment preparation is variable. This differs from that seen by Hopia et al (2016) whose study participants gained confidence in physical assessment as this was included as a component within the prescribing training undertaken in Finland. Assuring the appropriate preparation for clinical assessment prior to prescribing within the UK, is the role of the employing organisations and not the role of the education providers. For institutions outside of the UK this is often based on the clinical requirement of the patients rather than on the clinician's clinical ability. Within the UK the HEI's sole responsibility lies in ensuring compliance to professional body requirements (NMC 2006, 2018). Confirmation of such by employers, reflects their assurance of the ability and preparedness of those proposed for the course. The findings from this study suggest that line managers and those approving clinical suitability for the course, may not necessarily be from the same professional background. This may lead to a lack of understanding of the professional requirements of assessment and diagnostic skills and the importance of these as a basis for prescribing.

A specific NMC amendment to specify equitable entry requirements in the form of physical assessment and clinical diagnostic training would negate this risk. The criteria for entry should require a certificated assessment and diagnostic

programme which would prevent future anomalies in the selection process. Preparation of this kind would enable all prescribing to be undertaken by prescribers with nonanalytical and analytical skills to support their decision making according to Abuzour (2016).

Maxwell (2016) also advocates that complex tasks, such as prescribing, require clinicians to not only have physical assessment skills but diagnostic underpinning in the form of diagnostic reasoning, to be able to make autonomous safe and appropriate decisions. This ability was distinctly lacking from the information provided by the majority of those interviewed identifying a reliance on non- analytical skills such as pattern recognition and intuition. This differs significantly from studies in New Zealand and Australia where nurses are required to demonstrate both clinical assessment and clinical decision-making skills prior to undertaking prescribing (Elsom et al 2009, Spence & Anderson 2007). It is, however, not just nurses who demonstrate variable preparation for their prescribing role as Allison et al (2019) reported in their questionnaire that physical assessment skills in pharmacist prescribers were also variable and suggested further training was required. Disappointingly the inclusion of assessment and diagnostics has not been encouraged or enforced in the revised 2018 NMC standards for prescribing education and therefore local interpretation will continue.

When the findings from the study were considered against Hoffman's (2007) clinical reasoning cycle, it was evident that in every stage of the cycle, variation occurs. This was evidenced by participants' responses, based on their previous

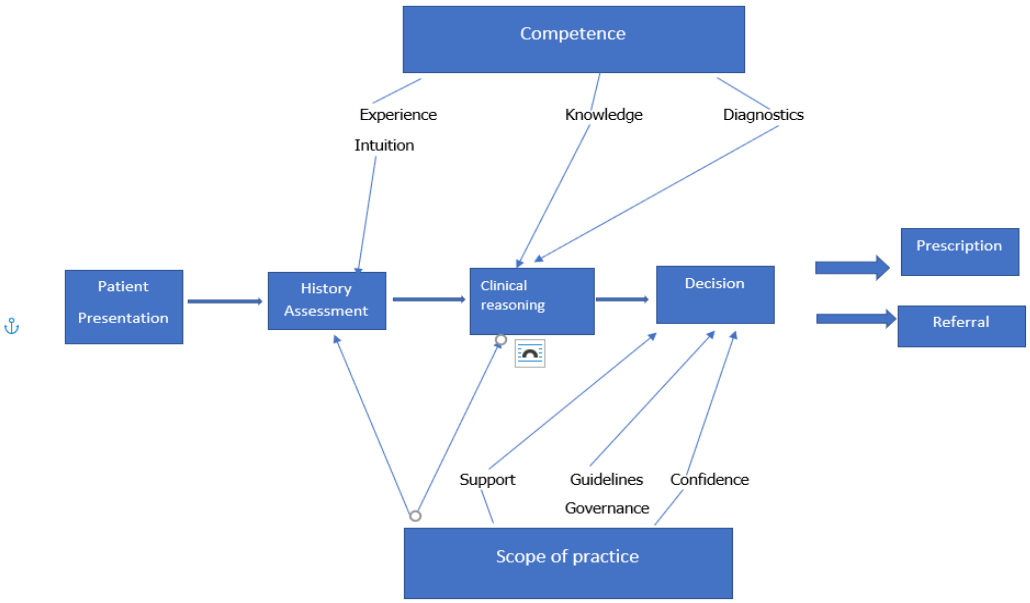
knowledge, skill, behaviour and the subsequent confidence they attributed to this, in their decision-making ability. Most participants failed to identify all the considerations relevant to an appropriate diagnosis or prescribing decision, when addressing the vignette, although some utilised non analytical skills based on experience and intuition rather than a full holistic assessment. Similar findings have been previously noted by (Offredy et al 2008) in other scenario-based assessments. Only one individual with significant experience in managing patients with respiratory conditions, did however, appropriately discuss the assessment, examination and investigation options as indicated against the clinical reasoning framework (Hoffman et al 2011) and clinical reasoning process adapted by Hoffman (2007), Alfaro-LeFevre (2009) and Andersen (1991). This individual also made an appropriate prescribing choice. This highlights that there is potential for further education and training to support prescribers with their diagnostic reasoning and therefore improve prescribing practice going forward. To prepare new prescribers this could be a prerequisite and for those currently with a prescribing qualification, this would constitute a CPD requirement.

The emerging evidence from this study offers a conceptual framework based on new information identifying components of decision-making which, when aligned with diagnostic underpinning, will enhance safe prescribing practice. Using Standing's (2008) model of cognitive continuum as a theoretical framework will guide this process. This framework could be strengthened by defining the term competence and offering context to how competence is

measured and observed. This could be further strengthened by the demonstration of diagnostic reasoning.

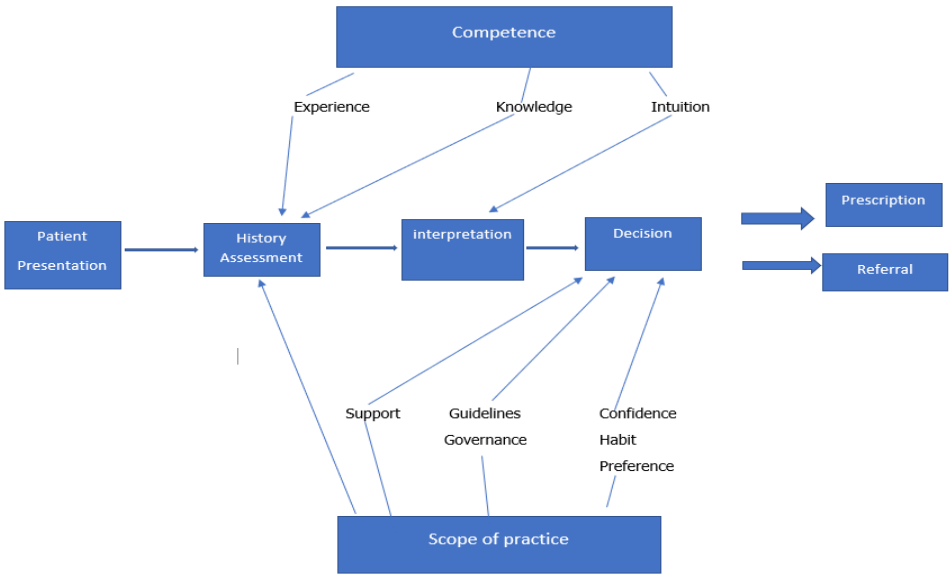
The study identified two different pathways to prescribing decision-making. Figure 7.1 below demonstrates the pathway from a patient presentation through to undertaking a clinical intervention by a clinician. This pathway utilises experience and intuition, knowledge, skills and diagnostic reasoning and is supported by the use of appropriate clinical guidelines. This then culminates in both competent and confident prescribing.

Figure 7.1 prescribing pathway with diagnostic underpinning



Conversely the second pathway offered, demonstrates a greater reliance on physical assessment skills and intuition in the process of making prescribing decisions as demonstrated in Figure 7.2 below

Figure 7.2 prescribing pathway without diagnostic underpinning



Whilst this approach may still result in prescribing activity this is less likely to be based on underpinning diagnostic knowledge and more likely to be as a consequence of habitual practice. Adopting this approach leads to an assumption that clinicians relying on physical assessment skills have equitable ability to make prescribing decisions as those with diagnostic ability. This poses a potential risk to patient safety based on limited knowledge and skills and challenges the comprehension of working within one's professional competency.

The participants within the study, reported that the content of the prescribing course included principles of diagnostics (NMC 2006), however this was clearly not adequate to prepare them for their new role. The findings from this study would suggest that physical assessment and diagnostics requires a greater consideration by HEI's and employers prior to accessing prescribing, to improve patient safety going forward. Adding a condition of entry to the programme would strengthen the preparation for prescribing practice and improve knowledge and skills. It is therefore imperative that dialogue with education leads from clinical practice nationally is strengthened, to ensure they are fully apprised of the significance of assessment and diagnostics in the prescribing preparation. This will also help to address the lack of clarity related to the admission requirements in the new NMC standards for prescribing programmes Part 3 (2018:9):

> *'confirm that the applicant is capable of safe and effective practice at a level of proficiency appropriate to the programme to be undertaken and their intended area of prescribing practice in the following areas: Clinical/health assessment; Diagnostics/care management; Planning and evaluation of care.'*

To understand this professional requirement, merely establishing what denotes a level of proficiency is challenging and ensuring consistency will therefore be difficult, without formal diagnostic underpinning. Whilst it should be noted that experienced clinicians will have a developed a degree of diagnostic ability because of their experience, this was reported by study participants as inadequate.

There was an overall sense of satisfaction for the prescribing preparation, in terms of content, offered by all three higher education providers noted in the discussions. A similar satisfaction has been previously recorded by Abuzour et al (2018), however, this differs from that previously noted by Ross and Kettles (2012), Scrafton et al (2012) and Creedon et al (2009). These studies had reported prescribing education to be inadequate. This change in response to a more positive one may relate to the development of the course content over time by education providers, to support prescribers from a variety of backgrounds in both acute and community services, which better meets the prescriber's needs. It may also demonstrate a reduction in the importance of the preparation for this role as more nurse prescribers saturate the clinical field and this role becomes almost 'business as usual' in the nursing arena, as opposed to a highly skilled and specialist role as it was originally perceived to be. So, it can be assumed that prescribing can operate with different levels of knowledge and skill although the impact of this remains unclear and would be worthy of further study. The recommendations of this study will be considered in the final chapter.

7.2 Perception of competence and its link to organisational control

The variability of prescribing practice described by the participants, is undeniably linked to their perception of competence. This is recognised as an international situation according to Lim et al (2018) who suggest this is inevitable in all prescribers whether from a medical or non-medical

background. Competency is accepted by many as a state of performance and practice (HSE 2020, Pijl-Zieber et al 2014, Royal Pharmaceutical Society (RPS) 2016) that is in keeping with the accepted practices of others in similar roles, although defining prescribing competence is something that has proved difficult to define and assess in some settings (Mucklow et al 2011). Prescribing is one such setting. The RPS (2016) designed a framework, intended to be used for all prescribers irrespective of their clinical background, and offer the following definition in relation to prescribing competency:

> *'A competency is a quality or characteristic of a person that is related to effective performance. Competencies can be described as a combination of knowledge, skills, motives and personal traits.'* (Royal Pharmaceutical Society 2016: 4)

Knowledge and skill can be easily assessed, whilst motive and behaviour are much less easily quantifiable, making the overall assessment of competency, according to RPS variable. Nuttall (2018) suggests in her metanalysis, that competency in relation to prescribers, is more aligned to '*boundary setting'* and is predominantly self-determined. The findings from this investigation would suggest that this broad statement does not reflect the situation experienced by the participants. Self-determined practice of this sort is indeed evident in prescribing within the medical domain, although much less so within nurse prescribing. Doctors are professionally able to adopt a prescribing formulary that is reflective of the needs of their patients for which they are clinically and professional accountable (General Medical Council 2013). Conversely this study suggests that nurse prescribers are professionally enabled by the NMC (2018) but organisationally disabled by local employer

governance arrangements, and this is reflected by variation of ability to prescribe within their competence and scope of practice. Within the West Midlands the local arrangements for formulary developments are predominantly decided by Trust prescribing leads who have overarching governance for non-medical practice. The findings from this investigation revealed that these individuals, in some instances are from different professional backgrounds and at least one with little prescribing experience. The findings indicate that the development of a formulary based on role and title rather than clinical experience has developed into common practice offering little allowance for individuality. A similar situation can be seen in a study of specialist nurse prescribers from the Netherlands undertaken by Kroezen et al (2014).

Whilst it is accepted that prescribing practice is influenced by both national and local guidelines, the findings from this investigation show that they continue to offer variable direction for NIPs, a situation previously reported by Rowbotham et al (2012) and Kroezen et al (2014). For novice prescribers, guidelines remained beneficial and are used as a safety netting for clinical decision-making and are often based on an evidence-based pathway approach, such as the prescribing of antimicrobials (Mcintosh et al 2016, Ness et al 2016). Lim et al (2018) reports that prescribing from an agreed list was a strategy used by novice nurses and this provided what they describe as 'safe practice'. Yet for those nurses with significant experience of prescribing practice, the guidelines and protocols enforced by local and national

organisations can become restrictive and reportedly deny the opportunity for individualised patient care as evidenced by participants in this investigation. This situation had also been previously noted by Philip & Winfield (2010) and Rowbotham et al (2012). There is also a significant difference in governance arrangements for prescribing outside of the UK as demonstrated by Almarshad (2015). Their study highlights the lack of acknowledgement within Saudi Arabia of the clinical complexity involved in decision making by prescribers.

The participants in this investigation expressed being torn between following strict protocols or autonomous decision-making with what appears to be, little organisational support challenging their own perception of their competence. Whilst protocols and guidelines were reported to directly influence choice and drug use for known conditions, there was a dichotomy when patients presented with multiple comorbidities and the guidelines became contradictory. Little support was perceived, in these situations, to help prescribers to develop their practice, and as such this often led to prescribing avoidance. Further education related to prescribing in comorbidity is needed to develop both knowledge and confidence.

Nursing decision-making has historically been grounded in intuition and the art of nursing (Benner et al (2008). In more recent years nursing has adopted a more analytical approach to complement the experience of the clinicians with what is referred to as clinical evidence base (Hajjaj et al 2010). Participants in this investigation demonstrated variation in approach, style and risk taking when faced with prescribing opportunities which could also be attributed to

their own individual expertise. The lack of uniformity and approach to clinical decision-making found in this current investigation is equitable to findings by Abuzour et al (2018a), particularly in relation to the early generation of hypotheses without full assessment. Not all the participants in this investigation, failed to take a full case assessment, unlike those in Abuzour et al (2018a) study. The choice to not prescribe by the participants in this investigation was, however, attributed to fear of making mistakes or repercussions from employers also seen in the study conducted by Abuzour et al (2018).

It was evident from the dialogue with all the participants that ascertaining further information and using established cues and clues formed part of their decision-making process suggesting a degree of analytical ability. For some this stage of the decision-making process was merely to reflect on their own experience and recognise that the clinical situation facing them was beyond their scope of practice, resulting in a refusal to offer into any further discussion with the patient. This lack of responsibility for prescribing may be another consequence of inadequate preparation for the role.

The ability of some participants to synthesise the information available to them by utilizing reflection on experience allowed them to consider the full clinical situation in greater detail, for others this was not possible as they had little comparable experience to draw from. The reliance on past experiences to create a sound knowledge base is one that has been described by Beaudin and Quick (1995:2) as *'learning by doing'*. As clinical experiences of prescribers

are inequitable, so are their learning opportunities and their ability to combine such experience with personal reflection and practice (Boud et al 1993) and therefore analytical skills as essential.

The iterative nature of the assessment process during the vignette exercise, saw a shift of thought processes from history taking, to examination, to diagnostics and back to the history as participants tried to uncover the *whole picture* and form their hypotheses. This approach is more in keeping with an Analytical Rational Theory or a Hypothetico-deductive Approach, commonly used in medical decision-making (Edwards 1954). An approach which Bjork and Hamilton (2011) consider appropriate for nurse prescribers. Approaches such as this are reported to also promote evidence-based practice in healthcare (Tanner 1987, Elstein & Schwarz 2002) as they rely on logical and rational processes such as history taking, a significant component of clinical assessment. Evidence-based practice is an essential component of prescribing practice (Maxwell 2005) and promoting this is critical for safe prescribing.

Relying on an evidence-base is not the only important element of hypothesis generation. It was evident that prior experience and background of the participants significantly affected the way in which they approached prescribing opportunities, with some feeling much more comfortable than others in generating hypotheses. A lack of knowledge, experience and diagnostic ability was observed to have a significant effect on hypothesis generation (Benner 1982, Woolley, 1990 and Coderre et al, 2003).

For some participants the medical model of history taking was well practiced. It allowed questioning to flow freely with a logical and considered approach and highlighted both analytical and intuitive thinking (Offredy et al 2008) and would align to safe and effective practice. For many of the individuals, however, it was pattern recognition or an automatic assimilation, that was used to judge the information available against similar presentations, in order to make a diagnosis or decision to treat. The retrieval and recall of information in this way presents a degree of risk, particularly when relying purely on memory of previous situations to support decision-making. Banning (2007) advises this approach should be used with caution as this suggests an element of habitual practice and not one of individualised assessment. The participants approach to logical questioning in order to establish further details was, however, variable, a situation that was previously recognised by Elstein & Schwarz (2002), which leaves some participants vulnerable to questions about their practice. Colman (2006:341) proposes that a reliance on 'heuristics' or what are described as rough and ready procedures or 'rules of thumb' when making decisions, judgements of this nature is a consequence of not establishing facts and in this case not undertaking a complete assessment. A subsequent lack of analytical skills was also demonstrated by some participants. Their questioning style failed to follow any recognised pattern of history taking, causing them to oscillate between areas of discussion or interest, without fully addressing all the considerations needed for effective history taking and resulted in them relying on habitual prescribing practice.

Most participants were experienced practitioners in their field, prior to undertaking their prescribing training. Benner's (1982) novice to expert continuum would imply that experienced practitioners of this nature, rely less on conscious thought processes when making their decisions. This situation is attributed to confidence in prescribing according to Rothwell (2012), who reports an increase related to greater exposure. Unconscious decision-making of this sort could be considered habitual practice as prescribers adopt a practice that is based on their past behaviours and experiences and not on holistic patient assessments. Caution is required to ensure that reliance on habitual practice does not compromise patient safety, as experience does not necessarily equate to advanced levels of knowledge and skill according to King and Clarke (2002). Understanding one's own behaviours and that of others, is one of many elements of organisational and work-related practice as recognised by Catchpole (2010) as important in ensuring safe healthcare practice:

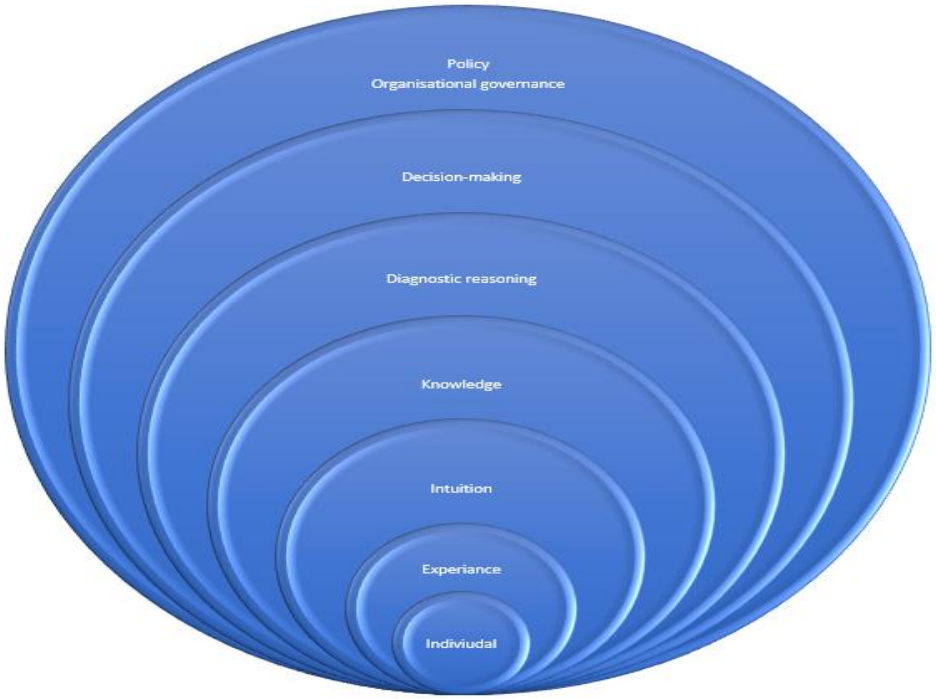
> *'Enhancing clinical performance through an understanding of the effects of teamwork, tasks, equipment, workspace, culture and organisation on human behaviour and abilities and application of that knowledge in clinical settings" Catchpole' (2010:1).*

It is therefore imperative to recognise the human factors or ergonomics that occur as a consequence of the prescribing role, the individual themselves or the organisation they work within (Health and Safety Executive 2020) and understand how they each contribute to prescribing decisions. There is, however, limited research related to the influence of individual human factors,

such as habit, on prescribing behaviour or on clinical practice generally and this again would be worthy of further study.

Synthesising the findings and the discussion above, it is evident that there are multi-layered considerations and influences that contribute to the decision-making practices of individual prescribers. These factors have varying consequences on an individual's decision to prescribe including the appropriateness of that decision and the safety of the patients requiring a prescription intervention. A diagrammatic model highlighting these considerations can be seen in figure 7.3 below

Figure 7.3 Decision-making influences model



7.4 Limitations of the study

The small-scale study recruited nine nurse prescribers from within the West Midlands. Whilst generalisability is not intended from a phenomenological study of this type, there may well be notable themes that can be considered by all groups of non-medical prescribers, employing organisations and higher education institutions. It must also be noted that the findings from this research can only be considered as the opinions and experiences of a small number of nurse prescribers working within the West Midlands and findings from a broader geographical region may offer differences. As such a larger sample over a wider geographical location will need to be considered to identify if this constitutes a local variance in practice. The review was conducted singlehandedly, and it is recognised that potential bias may be a consequence. This would have been reduced by the involvement of a second reviewer.

A single clinical vignette was also used and although adequate for the purpose of discussion, the study may have benefitted from a selection of vignettes. This would have allowed the participants to choose one they felt more familiar with, to broaden the decision-making discussions.

7.5 Summary

The discussions within this chapter have documented the principle findings related to the importance of prescribing preparation in the form of diagnostic underpinning, the impact of organisation control on formularies along with a

reliance on habitual practice which all have potential to affect decision-making practice. When compared with conclusions from earlier studies the findings have highlighted contributions relevant to both professional and academic fields of prescribing practice that are worthy of further consideration. These along with the limitations of the study will be discussed in the following chapter.

Chapter Eight: Conclusions

8.0 Introduction

There remains a paucity of primary research which focuses specifically on the decisions made by nurse prescribers. This is corroborated in the systematic reviews by Ness et al (2016) who focused on the acute care environment and more recently Djerbib (2018) focusing on primary care. The previous chapters have portrayed the journey of phenomenological study focusing on the lived experiences of nurse prescribers and how their decision-making forms a key role in their prescribing practice. As this study involved interviewing prescribers and discussing with them their personal experiences related to their prescribing role, the results are somewhat subjective and may not constitute a reliable reflection of actual conduct during prescribing consultations. It is possible that nurse prescribers may have responded to questions in ways they believed were expected of them in a professional role and therefore reluctant to disclose true practice that might be judged as *poor performance*. To negate this, a non-judgemental approach was adopted throughout the interview by a single researcher, to encourage the NIPs to describe their prescribing experiences. This approach allowed prescribers to reflect on individual situations, using concrete examples to support their statements, which reinforces the trustworthiness of the findings. Validation of the findings could, however, be afforded by undertaking an ethnographic study reviewing NIPs' actual behaviour and practice during consultations.

8.1 Original contribution

This study acknowledges that nurse prescribing operates with variable levels of knowledge, skill and understanding which has a potential to affect patient safety. A lack of clinical diagnostic underpinning results in a greater reliance on intuition and habitual practice. A conceptual framework is offered which indicates that decision making occurs much earlier in the prescribing process when clinicians do not employ clinical reasoning. This leads to high levels of referral. Nurse prescribers benefit from additional support to manage complex patients.

8.2 Recommendations for further research

The findings from the study highlighted the varied clinical and academic preparation of those accessing the prescribing course specifically certificated study related to assessment and diagnostic skills. In view of the narrow geographical location and small sample size of this study, it would be relevant to explore a national perspective of the prescribing preparation particularly in relation to formal diagnostic underpinning. This could also be extended to identify the preparation of all non- medical prescribers not just nurses.

The lack of diagnostics preparation was identified as a factor for high referral rates to medical colleagues for prescribing decisions and constituted to the use of habitual practice. A focus on the impact of these human factors or ergonomics on prescribing practice would be valuable to assess the individual

impact of this on patient safety. The study findings focus on the intrinsic and extrinsic influences on prescribing practice but do not address this from a patient safety perspective specifically.

8.3 Professional implication for practice

Whilst it is important to note that government and professional policy drives clinical practice, it is critical to consider how this is operationalised locally and nationally to ensure the accurate interpretation of terminology within the policy guidelines. Appropriate clinical and educational preparation is vital for the ongoing safety and success of prescribing. Educational leads from clinical practice, need to be aware of the risk to patient safety from inadequate diagnostic preparation. This will require employers to consider the requirements for academic and clinical underpinning and support adequate preparation for prescribing practice. Whilst this has cost implications for organisations this would be mitigated by the reduction in associated risk, based on enhanced knowledge and clinical application.

8.4 Implications for education

It is important that higher education institutions supporting the preparation of nurse prescribers acknowledge the variation of academic and clinical preparation. Strengthening sessions related to prescribing in comorbidity is specifically an area that requires consideration as does the availability of varied continued professional development opportunities.

Word count 51104

References

Abuzour, A.S., Lewis, P.J. and Tully, M.P. (2018a) A qualitative study exploring how pharmacist and nurse independent prescribers make clinical decisions, *Journal of Advanced Nursing,* 74 (1), pp. 1-232.

Abuzour, A.S., Lewis, P.J. and Tully, M.P. (2018b) Practice makes perfect: A systematic review of the expertise development of pharmacist and nurse independent prescribers in the United Kingdom, *Research in Social and Administrative Pharmacy,* 14, pp. 6-17.

Adams, A. and Cox, A. L. (2008) Questionnaires, in-depth interviews and focus groups, In Cairns, P. and Cox, A. L. (eds.) *Research Methods for Human Computer Interaction.* Cambridge, UK: Cambridge University Press, pp. 17–34.

Adigwe, O.P. (2012) *Non-Medical Prescribing in Chronic Non-Malignant* Pain PhD thesis. Leeds University, Available at: https://ethos.bl.uk/OrderDetails.do?uin=uk.bl.ethos.58906 (accessed 9th May 2018).

Ajjawi, R. and Higgs, J. (2007) Using Hermeneutic Phenomenology to Investigate How Experienced Practitioners Learn to Communicate Clinical Reasoning, *The Qualitative Report, 12* (4), pp. 612-638.

Albertazzi, L., Libardi, M. and Poli, R. (1996) *The School of Franz Brentano* London: Kluwer academic publishers.

Allison, J., Fisher, J., Souter, C., Bennie, M. (2019) *What patient assessment skills are required by pharmacists prescribing systemic anti-cancer therapy? A consensus study.* J Oncol Pharm Pract. 25(8pp. 1933-1944. doi: 10.1177/1078155219841118. Epub 2019 May 1. PMID: 31042136.

Almarshad, S. (2015) An example of using a decision-making framework designed for non-medical prescribers as a method for enhancing prescribing safety for inhaled corticosteroids (ICS) 23(1), pp. 41-47

Alfaro-LeFevre, R. (2009) *Critical Thinking and Clinical Judgement: A Practical Approach to Outcome-Focused Thinking, 4th edn.* St. Louise: Elsevier.

Andersen, B. (1991) Mapping the terrain of the discipline, In Gray, G. and Pratt, R. (Eds.) *Towards a Discipline of Nursing*. Melbourne: Churchill Livingstone, pp. 95–124.

Anderson, C. (2010) Presenting and Evaluating Qualitative Research, *American Journal of Pharmaceutical Education,* 74 (8), pp. 1-7

Arnold, S.R. and Straus, S.E. (2005) Interventions to improve antibiotic prescribing practices in ambulatory care, *Evidenced Based Child Health: a Cochrane Review Journal,* 1 (2), pp. 623-690.

Asselin, M.E. (2003) Insider research: Issues to consider when doing qualitative research in your own setting, *Journal for Nurses in Staff Development*, 19 (2), pp. 99–103.

Bailey, J. (2008) First steps in qualitative data analysis: transcribing, *Family Practice,* 25 (2), pp. 127–131.

Banning, M. (2007) A review of clinical decision making: Models and current research, *J. Clinical Nursing,* 17(2), pp. 187-195.

Banning, M. (2008) Clinical reasoning and its application to nursing: Concepts and research studies, *Nurse Education in Practice* 8, pp. 177-183.

Barter, C. and Renold, E. (1999) The use of vignettes in qualitative research *Social Research Update* issue 25, Available at: http://sru.soc.surrey.ac.uk/SRU25.html (accessed 14/07/2018).

Bazeley, P. and Jackson, K. (2013) *Qualitative Data Analysis with NVivo* 2nd edn. London: Sage.

Beaudin, B.P. and Quick, D. (1995) *Experiential Learning: Theoretical Underpinnings* Colorado High Plains Intermountain Center for Agricultural Health and Safety (*HI-CAHS)*, Report *No. ETT-95-02, Colorado State University, CO.*

Benner, P. (1982) Issues in competency-based testing, *Nursing Outlook*, 30(5), pp. 303-309.

Benner, P. (1982) From Novice to Expert, *The American Journal of Nursing,* 82(3), pp. 402-407.

Benner, P., Hughes R.G. and Sutphen, M. (2008) Clinical Reasoning, Decision making, and Action: Thinking Critically and Clinically, In Hughes, R.G. (ed.) *Patient Safety and Quality: An Evidence-Based Handbook for Nurses.* Rockville (MD): Agency for Healthcare Research and Quality (US), Chapter 6. Available at: https://www.ncbi.nlm.nih.gov/books/NBK2643/ (accessed 9th June 2020).

Benner, P. and Tanner, C.A. (1987) How expert nurses use intuition, *American Journal of Nursing*, 87(1), pp. 23-31.

Bettany-Saltikov, J. (2012) *How to do a systematic Literature Review in Nursing A Step by Step Guide.* London: Open University Press.

Biggerstaff, D.L. and Thompson, A. R. (2008) Interpretative phenomenological analysis (IPA): A qualitative methodology of choice in healthcare research, *Qualitative Research in Psychology,* 5, pp. 173 – 183.

Bjork, I.T. and Hamilton, G.A. (2011) Clinical decision making of nurses working in a hospital setting *Nursing Research and Practice* Article ID 524918, https://doi.org/10.1155/2011/524918.

Bogdan, R.C. and Biklen, S.K. (1998) *Qualitative research for education: An introduction to theory and methods* 3rd edn. Boston: Allyn and Bacon.

Boshuizen, and Schmidt, (1995) 'The Development of Clinical reasoning expertise' In Higgs, J. and Jones, M. (eds.) (2000) *Clinical Reasoning in the health profession* 2nd edn. Oxford: Butterworth Heinemann.

Boud, D., Cohen, R. and Walker, D. (1993) 'Introduction: Understanding learning from experience', In Boud, D., Cohen, R. and Walker, D. (eds.) *Using experience for learning* Buckingham, England: The Society for Research into Higher Education and Open University Press, pp. 1-17.

Boud, D. and Walker, D. (1990) Making the most of experience*, Studies in Continuing Education,* 12(2), pp. 61–80.

Bowskill, D. (2009) *The integration of nurse prescribing: case studies in primary and secondary care.* DHSci thesis, University of Nottingham. Available at: http://eprints.nottingham.ac.uk/11036/1/The_Integration_of_Nurse_Prescribing.pdf (accessed 14th July 2018).

Bowskill, D., Timmons, S. and James, V. (2012) How do nurse prescribers integrate prescribing in practice: Case studies in primary and secondary care, *Journal of Clinical Nursing,* 22, pp. 2077-2086.

Bradley, E. and Nolan, P. (2007) Impact of nurse prescribing: a qualitative study, *Journal of Advanced Nursing*, 59, pp. 120–128.

Bradley, E., Hynam, B, and Nolan, P. (2007) Nurse prescribing: Reflections on safety in practice *Social Science and Medicine* 65(3), pp. 599-609.

Bradley, E., Campbell, P. and Nolan, P. (2005) Nurse prescriber who are they and how do they perceive their role? *Journal of Advanced Nursing,* 51(5), pp. 439-448.

Braun, V. and Clarke, V. (2006) Using thematic analysis in psychology, *Qualitative Research in Psychology,* 3:2, pp. 77-101.

Braun, V. and Clarke, V. (2013) *Successful qualitative research: A practical guide for beginners,* London: Sage.

Bazeley, P. and Jackson, K. (eds). (2013) *Qualitative data analysis with NVivo.* London: Sage Publications Limited.

British Pharmacological Society (2020) *Ten Principles of Good Prescribing*. Available at: https://www.bps.ac.uk/education-engagement/teaching-

pharmacology/ten-principles-of-good-prescribing (accessed 29th March 2020).

Brocki, J.M. and Wearden, A.J. (2006) A critical evaluation of the use of interpretative phenomenological analysis (IPA) in health psychology, *Psychology and Health*, 21:1, pp. 87-108. DOI: 10.1080/14768320500230185

Brookfield, S. (1993) On Impostorship, Cultural Suicide, and Other Dangers: How Nurses Learn Critical Thinking, *The Journal of Continuing Education in Nursing*, 24(5), pp. 197-205.

Brookfield, S. (1998) Critically reflective practice, *Journal of Continuing Education in the Health Professions,* 18(4), pp.197-205.

Brunswick, E. (1952) *The Conceptual Framework of Psychology*, Chicago: University of Chicago.

Buchan, J. and Calman, L. (2004) *Implementing nurse prescribing an updated review of current practice internationally*, Geneva: International Council of Nurses.

Buckingham, C.D. and Adams, A. (2000) Classifying clinical decision making: a unifying approach, *Journal of Advanced Nursing*, 32 (4), pp. 981-989.

Buckley, P., Grime, J. and Blenkinsopp, A. (2006) Inter-and intra-professional perspectives on non-medical prescribing in an NHS trust, *The Pharmaceutical Journal*, 277, pp. 394-398

Caldwell, K., Henshaw, L. and Taylor G. (2011) Developing a framework for critiquing health research: An early evaluation, *Nurse Education Today,* 31(8), e1-e7.

Cameron, K. A. (2009) A practitioner's guide to persuasion: An overview of 15 selected persuasion theories, models and frameworks Patient, *Education and Counselling* 74 (3), pp. 309-317.

Campbell, P. and Collins, G. (2001) Prescribing for community nurses, *Nursing Times*, 97 (28), pp. 38.

Carey, N., Stenner, K. and Courtenay, M. (2010) How nurse prescribing is being used in diabetes services: views of nurses and team members, *Journal of Nursing and Healthcare of Chronic Illness,* 2 (1), pp. 13-21.

Cash, K. (1995). Benner and expertise in nursing: A critique, *International Journal of Nursing Studies,* 32 (6), pp. 527–534.

Catchpole, K. (2010), cited in *Department of Health Human Factors Reference Group Interim Report,* 1 March 2012, National Quality Board, March 2012. Available at: http://www.england.nhs.uk/ourwork/part-rel/nqb/ag-min/ (Accessed 9th May 2020).

Chapman, H. (1999) Some important limitations of competency-based education with respect to nurse education: an Australian perspective, *Nurse Education Today*, 19(2), pp. 129-135.

Chapman, E. and Smith, J.A. (2002) Interpretative phenomenological analysis and the new genetics, *Journal of Health Psychology* 7, (2) pp. 125–130.

Coderre, S., Mandin, H., Harasym, P.H. and Fick, G.H. (2003) Diagnostic reasoning strategies and diagnostic success, *Medical Education*, 37(8) pp. 695–703.

Cohen, L. and Manion, L. (1994) *Research methods in education* 4th ed. London: Routledge.

Cohen, L., Manion, L. and Morrison, K. (2007) *Research methods in education* 6th edn. London: Routledge.

Colaizzi, P.F. (1978) Psychological research as the phenomenologist views I. In *Husserlian Phenomenology and Colaizzi's Method of Data Analysis: Exemplar in Qualitative Nursing Inquiry Using Nursing as Caring Theory.* Available at: https://www.researchgate.net/publication/299407718_Husserlian_Phenomenology_and_Colaizzi's_Method_of_Data_Analysis_Exemplar_in_Qualitative_Nursing_Inquiry_Using_Nursing_As_Caring_Theory (accessed 2nd Sept 2019).

Colman, A.M. (2006) Thomas C. Schelling's psychological decision theory: Introduction to a special issue, *Journal of Economic Psychology*, 27 (5), pp. 603-608.

Cooper, H. (2010) *Research Synthesis and Meta-Analysis: A step-by-step approach:2 (Applied Social Research Methods)* Series 4th edn. Thousand Oaks, CA, USA: Sage Publication Inc.

Cooper, R.J., Anderson, C., Avery, T., Bissell, P., Guillaume, L., Hutchinson, A., James, V., Lymn, M.J., McIntosh, A., Murphy, E., Ratcliffe, J., Read, S. and Ward, P. (2008) Nurse and pharmacist supplementary prescribing in the UK—A thematic review of the literature, *Health Policy,* 85 (3), pp. 277-292.

Cope, L.C., Abuzour, A.S. and Tully, M.P. (2016) Nonmedical prescribing: where are we now? *Therapeutic Advances in Drug Safety,* 7(4), pp. 165-172.

Courtenay, M. and Carey, N. (2008) Nurse independent prescribing and nurse supplementary prescribing practice: national survey, *Journal of Advanced Nursing*, 61(3), pp. 291-299.

Courtenay, M., Carey, N. and Burke, J. (2007) Independent extended and supplementary nurse prescribing practice in the UK: a national questionnaire survey, International *Journal of Nursing Studies,* 44(7), pp. 1093–1101.

Courtenay, M., Carey, N. and Burke, J. (2006), Preparing nurses to prescribe medicines for patients with dermatological conditions, *Journal of Advanced Nursing*, 55 (6), pp. 698-707.

Courtenay, M., Carey, N. and Stenner, M. (2012) An overview of non-medical prescribing across one strategic health authority, *BMC Health Services Research,* 12, 138. https://doi.org/10.1186/1472-6963-12-138.

Courtenay, M., Carey, N. and Stenner, K. (2011) Non-medical prescribing leads views on their role and the implementation of non-medical prescribing from a multi-organisational perspective, *BMC Health Services Research,* 11, 142 https://doi.org/10.1186/1472-6963-11-142.

Courtenay, M., Gerada, C. and Haywood, J. (2011a) Working with non-medical prescribers, *British Journal of General Practice,* 61 (583), pp. 85-86.

Courtenay, M. and Gordon, J. (2009) A survey of therapy areas in which nurses prescribe and CPD needs, *Nurse Prescribing,* 7(6), pp. 255-262.

Cowan, D.T., Norman, I. and Coopamah, V. P (2005) Competence in nursing practice: A controversial concept – A focused review of literature, *Nurse Education Today,* 25(5), pp. 355-362.

Creedon, R., O'Connell, E., McCarthy, G. and Lehane, B. (2009) An evaluation of nurse prescribing Part 1: a literature review, *British Journal of Nursing,* 8 (21), pp. 1322-1327.

Creswell, J.W. (2007) *Qualitative inquiring and research design: Choosing among five approaches* 2nd edn. Thousand Oaks. CA: Sage Publications.

Creswell, J. W. (2013) *Qualitative Inquiry and research design choosing among five approaches* 3rd edn. Thousand Oaks, CA: Sage Publications.

Crew, S. (2010) Non-medical prescribing in secondary care: an audit *Nurse Prescribing* 8(10), pp. 498-502.

Crombie, I.K. (1996) *Design, Content and Interpretation of Health Services Research*, Chichester; New York: John Wiley and Sons.

Cronin, P., Ryan, F. and Coughlan, M. (2008) Undertaking a literature review: a step-by-step approach, *British Journal of Nursing,* 17(1), pp. 38-43.

Croskerry, P. (2002) Achieving quality in clinical decision making: Cognitive strategies and detection of bias, *Quality in Clinical Decision Making,* 9 (11), pp. 1184-1204.

Crotty, M. (1996) *Phenomenology and nursing* research, Melbourne: Churchill Livingston.

Crotty, M. (1998) *The Foundations of Social Research*, London: Sage.

Cullen, S. (2010) Survey-driven romanticism, *Review of Philosophy and Psychology,* 1, pp. 275-296.

Darbyshire, P. (1994) Skilled expert practice: Is it "all in the mind"? A response to English's critique of Benner's novice to expert model, *Journal of Advanced Nursing,* 19 (4), pp. 755–761.

Davidsen, A.S. (2012) Phenomenological approaches in psychology and health sciences, *Quantitative Research in Psychology* ,10(3), pp. 318-39.

Dawson, C. (2009) *Introduction to Research Methods* 4th edn. Oxford: How to Books Ltd.

Denzin, N.K. and Lincoln, Y.S. (2000) 'Introduction: The discipline and practice of qualitative research' In Denzin, N.K. and Lincoln, Y.S. (eds.) *Handbook of qualitative research* (2nd edn.) Thousand Oaks, CA: Sage.

Department of Health and Social Security (1986) *Neighbourhood nursing: a focus for care: report of the community nursing review*, London: HMSO.

Department of Health (1989) *Report of the Advisory Group on Nurse Prescribing (the Crown Report).* Available at: https://webarchive.nationalarchives.gov.uk/+/http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4077151 (accessed 21st May 2016).

Department of Health (1999) *Review of prescribing, supply and administration of medicines (The Crown Report).* Available at: http://webarchive.nationalarchives.gov.uk/20130107105354/http:/www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4077153.pdf (accessed 21st June 2016).

Department of Health (2005) *Supplementary prescribing by Nurses, Pharmacists, Chiropodists/Podiatrists, Physiotherapists and Radiographers within the NHS in England.* Available at www.webarchive.nationalarchives.gov.uk (accessed 2st May 2016).

Department of Health (2005b) *Improving Patients' Access to Medicines: A Guide to Implementing Nurse and Pharmacist Independent Prescribing within the NHS in England.* Available at: www.webarchive.nationalarchives.gov.uk (accessed 21st May 2016).

Djerbib, A. (2018) A qualitative systematic review of the factors that influence prescribing decisions by nurse independent prescribers in primary care, *Primary Health Care,* 28(3), pp. 25-34.

Dobel-Ober, D., Brimblecombe, N. and Bradley, E. (2010) Nurse prescribing in mental health: national survey, *Journal of Psychiatric and Mental Health Nursing,* 17(1), pp.487-493.

Doherty, M.E. and Kurz, E.M. (1996) Social judgement theory, In Doherty, M.E. (ed.) *Thinking and Reasoning vol 2* Exeter: Psychology Press.

Dowling, M. (2007) From Husserl to van Manen: a review of different phenomenological approaches, *International Journal of Nursing Studies,* 44 (1), pp. 131-142.

Downer, F. and Shephard, C.K. (2010) District nurses prescribing as nurse independent prescribers, *British Journal of Community Nursing*, 15(7), pp. 347-352.

Dreyfus, S.E. and Dreyfus, H.L. (1980) *A five-stage model of the mental activities involved in directed skill acquisition,* Berkeley: University of California.

Dwyer, S.C. and Buckle, J.L. (2009) The Space Between: On Being an Insider-Outsider in Qualitative Research, *International Journal of Qualitative Methods,* 8(1), pp. 54–63.

von Eckartsberg, R. (1998. 'Existential-phenomenological research', In Valle, R. (ed.), *Phenomenological inquiry in psychology: Existential and transpersonal dimensions* New York; US: Plenum Press, pp. 21-61.

Edwards, S. (2001) *Philosophy of Nursing an Introduction*, NY: Palgrave.

Edwards, W. (1954) Variance preference in gambling, *The American Journal of Psychology,* 67 (3), pp. 441-452.

Elsom, S., Happell, B., Manias, E. (2009) Nurse practitioners and medical practice: opposing forces or complementary contributions*? Perspect Psychiatr Care*, 45. pp.9-16.

Elstein, A. S. and Schwarz, A. (2002) Clinical problem solving and diagnostic decision making: selective review of cognitive literature, *BMJ*, 324(7339), pp.729-732.

English, I. (1993) Intuition as a function of the expert nurse: A critique of Benner's novice to expert model, *Journal of Advanced Nursing*, 18(3), pp. 387–393.

Etikan, I., Musa, S.A. and Alkassim, R.S. (2016) Comparison of convenience sampling and purposive sampling*, American Journal of Theoretical and Applied Statistics*, 5(1), pp. 1-4.

Evans, S.C., Roberts, M.C., Keeley, J.W., Blossom, J.B., Amaro, C.M., Garcia, A.M., Stough, C.O., Canter, K.S., Robles, R. and Reed, G.M. (2015) Vignette methodologies for studying clinicians' decision-making: Validity, utility, and

application in ICD-11 field studies, *International Journal of Clinical and Health Psychology* 15(2), pp. 160-170.

Everingham, K. L. (2012) *A phenomenological exploration of clinical decision making of Intensive Care Unit (ICU) nurses in relation to sedation management* PhD thesis. University of Edinburgh. Available at: http://hdl.handle.net/1842/7773 (Accessed 24th April 2018).

Faia, M.A. (1980) The vagaries of the vignette world: A comment on Alves and Rossi, *American Journal of Sociology*, 85 (4), pp. 951-954.

Fereday, J. and Muir Cochrane, E. (2006) Demonstrating rigor using thematic analysis: a hybrid approach to inductive and deductive coding and theme development, *International Journal of Qualitative Methods*, 5(1), pp. 80-92.

Finlay, L. (2002) Negotiating the swamp: the opportunities and challenges in Research practice, *Qualitative Research,* 2 (2), pp. 209-230.

Fishman, J.M. and Fishman, L.M. (2010) *History Taking in Medicine and Surgery* 2nd edn. Cheshire: PasTest.

Fleming, V., Gaidys, U. and Robb, Y. (2003), Hermeneutic research in nursing: developing a Gadamerian-based research method, *Nursing Inquiry,* 10 (2), pp. 113-120. doi:10.1046/j.1440-1800.2003.00163.

Flick, U. (2014) *An Introduction to Qualitative Research* 5th edn. Los Angeles: Sage.

Fontana, A., and Frey, J.H. (2000) 'The interview: From structured questions to negotiated text' In Denzin, N.K. and Lincoln, Y.S. (eds.) *Handbook of Qualitative Research* 2nd edn. Thousand Oaks, CA: Sage, pp 645-672.

Gadamer, H. (1983) 'Hermeneutics as practical philosophy', In Lawrence, F.G. (Trans.), *Reason in the age of science*, Cambridge: The MIT Press, pp. 88–138.

Gass, M. (1992). Theory and practice, *The Journal of Experiential Education*, 15(2), pp. 6-7.

General Medical Council (2013) *Good practice in prescribing and managing medicines and devices* Available at: https://www.gmc-uk.org/ethical-guidance/ethical-guidance-for-doctors/prescribing-and-managing-medicines-and-devices (accessed 23rd May 2020).

Gielen, S. C., Dekker, J., Francke, A.L., Mistiaen, P. and Kroezen, M. (2014) The effects of nurse prescribing: A systematic review, *International Journal of Nursing Studies,* 51(7), pp. 1048-1061.

Gillham, B. (2005) *Research Interviewing,* Maidenhead; New York: Dawson Press.

Giorgi, A. (2005). The phenomenological movement and research in the human sciences, *Nursing Science Quarterly,* 18(1), pp. 75-82. doi:10.1177/089431840427211

Goswell, N. and Siefers, R. (2009) Experiences of ward-based nurse prescribers in an acute ward setting, *British Journal of Nursing,* 18 (1), pp. 34-37.

Graneheim, U.H. and Lundman, B. (2004) Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness*, Nurse Education Today,* 24 (2), pp.105-112.

Green, C. (2002) Reflections on reflection: students' evaluation of their moving and handling education, *Nurse Education in Practice*, 2, pp.4–12.

Guba, E.G. (1981) Criteria for assessing the trustworthiness of naturalistic inquiries *Educational Communication and Technology Journal* 29, (75) Available at: https://doi.org/10.1007/BF02766777 (accessed 20th august 2019).

Guba, E. G. and Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin and Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 105-117). Thousand Oaks, CA: Sage.

Guba, E. G. and Lincoln, Y. S. (1989) *Fourth generation evaluation*. Newbury Park, CA: Sage Publications.

Hacking, S. and Taylor, J. (2010) *An evaluation of the scope and practice of Non-Medical Prescribing in the North West for NHS North West*. Available via: https://www.researchgate.net/publication/228406352_An_evaluation_of_the_scope_and_practice_of_Non_Medical_Prescribing_in_the_North_West_For_NHS_North_West (accessed 14th July 2019).

Hajjaj, F.M., Salek, M.S., Basra, M.K.A. and Finlay, A.Y. (2010) Non-clinical influences on clinical decision-making: a major challenge to evidence-based practice, *Journal of Royal Society of Medicine,* 103 (5), pp. 178-187.

Hall, J. (2006) *Influences on Community Nurse Prescribing* EthoS. Available via http://ethos.bl.uk/SearchResults.do (accessed 27 April 2020).

Hall, J. (2010) Assessing the quality of nurse prescribing, *Nurse Prescribing,* 8 (11), pp. 547-550.

Hamm, R.M. (1988) 'Clinical intuition and clinical analysis: Expertise and cognitive continuum', In Luker, K., Hogg, C., Austin, L., Ferguson, B. and Smith, K. (1998) Decision Making: the context of nurse prescribing, *Journal of Advance Nursing* ,28(2), pp. 235-242

Hammond, K. (1996a) How convergence of research paradigms can improve research on diagnostic judgement, *Medical Decision Making*, 16 (3), pp.281–287.

Hammond, K.R. (1980) Towards increasing competence of thought in public policy formation. In: Raven, B.H. (Ed.), *Policy Studies Review Annual,* London: Sage.

Harris, M. (1976) History and significance of the emic/etic distinction, *Annual Review of Anthropology,* 5 pp. 329-350.

Hay, A., Bradley, E. and Nolan, P. (2004) Supplementary nurse prescribing, *Nursing Standard*, 18(41), pp. 33-40.

Health and Safety Executive (2020) *Introduction to Human Factors.* Available at: https://www.hse.gov.uk/humanfactors/introduction.htm (accessed 26th May 2020).

Health and Safety Executive (2020) *What is Competence*. Available at: https://www.hse.gov.uk/competence/what-is-competence.htm (accessed 3rd June 2020).

Heidegger, M. (1927) *Being and Time,* (Translated by Joan Stambaugh), Albany: State university of NY Press.

Hemmingway, S. and Ely, V. (2009) Prescribing by Mental Health Nurses: The UK Perspective, *Perspectives in Psychiatric Care*, 45(1), pp. 24-35.

Herklots, A., Baileff, A. and Latter, S. (2015) Community matrons' experience as independent prescribers, *British Journal of Community Nursing,* 20 (5), pp. 217-223.

Higgs, J. and Jones, M. (2000) Clinical Reasoning in the health profession In Higgs, J. and Jones, M. (eds.) (2000) *Clinical Reasoning in the health profession* 2nd edn. Oxford: Butterworth Heinemann.

Higgs, J., Jones, M., Loftus, S. and Christensen, N. (eds.) (2008) *Clinical Reasoning in the health professions* 3rd edn. Oxford: Butterworth Heinemann.

Hill, M. (1997) Research Review: Participatory Research with Children, *Child and Family Social Work,* 2 (3), pp.171-183.

Hoffman, K., Dempsey, J., Levett-Jones, T., Noble, D., Hickey, N., Jeong, S., Hunter, S. and Norton, C. (2011), The design and implementation of an Interactive Computerised Decision Support Framework (ICDSF) as a strategy to improve nursing students' clinical reasoning skills, *Nurse Education Today,* 31 (6), pp. 587-594.

Hoffman, K., (2007) *A Comparison of Decision-making by "Expert" and "Novice" Nurses in the Clinical Setting, Monitoring Patient Haemodynamic*

Status Post Abdominal Aortic Aneurysm Surgery. Unpublished PhD Thesis. University of Technology, Sydney, In Levett-Jones, T., Hoffman, K., Dempsey, J., Jeong, S.Y.S., Noble, D., Norton, C.A., Roche, J. and Hickey, N., (2010) The 'five rights' of clinical reasoning: An educational model to enhance nursing students' ability to identify and manage clinically 'at risk' patients, *Nurse Education Today,* 30(6), pp. 515-520.

Holloway, I. and Galvin, K. (2017) *Quality Research in Nursing and Healthcare,* 4th edn. Oxford: Wiley Blackwell.

Hopia, H., Latvala, E. and Liimatainen, L. (2016) Reviewing the methodology of an integrative review, *Scand J Caring Sci.*, 30(4), pp.662-669.

Hopia, H., Karhunen, A. and Heikkila, J. (2016) Growth of nurse prescribing competence: facilitators and barrier during education Journal *of Clinical Nursing* 26, pp. 3164-3173

Howell, K. E. (2013) Aspects of phenomenology. IN Howell, K. E. (2013) *An introduction to the philosophy of methodology* London: Sage Publications Ltd.

Hughes, C.M., Lapane, K., Watson, M.C. and Davies, H.T.O. (2007) Does Organisational Culture Influence Prescribing in Care Homes for Older People? A New Direction for Research, *Drugs Aging*, 24(2), pp. 1-11.

Hughes, R. (1998) Considering the vignette technique and its application to a study of drug injecting and HIV risk and safer behaviour, *Sociology of Health and Illness*, 20 (3), pp. 381-400.

Information Commissions Office ICO (2016) *General data protection regulation (GDPR).* Available at: https://www.gov.uk/government/publications/guide-to-the-general-data-protection-regulation (accessed 20th August 2019).

Jardine, D. (1990) Awakening from Descartes' nightmare: on the love of ambiguity in phenomenological approaches to education, *Studies in Philosophy and Education*, 10, pp. 211-232.

Jasper, M., Rosser, M. and Mooney, G. (2013) *Professional Development Reflection and Decision Making in Nursing and Health Care.* Chichester: Wiley Blackwell.

Jenkins, N., Bloor, M., Fischer, L., Berney, L. and Neale, J. (2010) Putting it in Context: the use of vignettes in qualitative interviewing, *Qualitative Research*, 10(2), pp. 175-198.

Johns, C. (2002) *Guided Reflection Advanced Practice*, London: Blackwell Science.

Johnston, C. M., Wallis, M., Oprescu, F.I. and Gray, M. (2016) Methodological considerations related to nurse researchers using their experience of a

phenomenon with phenomenology, *Journal of Advanced Nursing* ,73(3), pp. 574-584.

Jones, A. (2009) *Nurse Prescribing in Mental Health* Chichester: Wiley-Blackwell.

Jones, J.A. (1988) Clinical reasoning in nursing, *Journal of Advanced Nursing*, 13, pp. 185-192.

Jones, M., Miller, D., Lucas, B., Bennett, J. and Gray, R. (2005) Supplementary prescribing by mental health nurses seems promising, *British Medical Journal*, 331(7528), pp.1337.

Joyce, G.F., Carrera, M., Goldman, D.P. and Sood, N. (2011) Physician prescribing behaviour and its impact on patient level outcomes, *Am J Man Care,* 17(12), pp. e462-471.

Jutel, A. and Menkes, D.B. (2010) Nurses' reported influence on the prescription and use of medication, *International Nursing Review*, 57(1), pp. 92-97.

Kafle, N.P. (2011) Hermeneutic phenomenological research method simplified, *Bodhi- An Interdisciplinary Journal*, 5, pp.181-200.

Kahn, D.L. (2000) 'Reducing bias', In Cohen, M.Z., Kahn D L. and Steeves, R.H. (eds.) *Hermeneutic phenomenological research: a practical guide for nurse researchers*, California: Safe Publishing.

Kamarudin, G., Penm, J., Chaar, B. and Moles, R. (2013) Educational interventions to improve prescribing competency: a systematic review, *BMJ,* 3(8), pp. 1-18.

Kanuha, V. K. (2000). "Being" native versus "going native": Conducting social work research as an insider, *Social work*, 45(5), pp. 439-447.

Keeton, M. and Tate, P. (1978) Editor's notes: The boom in experiential learning. In Keeton, M. and Tate, P. (eds.) *Learning by experience - what, why, how* (San Francisco: Jossey- Bass, pp. 1-8.

Kuhn, T.S. (1962) 'The Structure of Scientific Revolutions 3rd edn'. In Ruse, M. (ed.) (2009) *Philosophy after Darwin* Princetown: Princetown University press.

Kilpatrick, K. (2012) Understanding acute care nurse practitioner communication and decision making in healthcare teams, *Journal of Clinical Nursing,* 22(1-1), pp.168-179.

King, L. and Clark, J. (2002) Intuition and the development of expertise in surgical ward and intensive care nurses, *Journal of Advanced Nursing,* 37(4), pp. 322-329.

Kivunja, C. and Kivunja, A.B. (2017) Understanding and applying research paradigms in educational contexts, *International Journal of Higher Education,* 6(5), pp. 26-41.

Knight, P.T. (2002) *Small Scale Research* London: Sage.

Kolb, D. A. (1984) *Experiential learning: experience as the source of learning and development,* Englewood Cliffs, NJ: Prentice Hall.

Kruth, T. (2013) Advanced Nursing Practice in Sweden *International Advanced Practice Nursing.* Available at https://internationalapn.org>2013/09/08 (accessed 28th June 2016)

Kroezen, M. (2014) *Nurse Prescribing A study on task substitution and professional jurisdiction,* The Netherlands: Nivel.

Kroezen, M., Mistiaen, P., Francke, A. L., Groenewegen, P.P. and Van Dijk, L (2014) negotiating jurisdiction in the workplace, A multiple-case study of nurse prescribing in hospital settings *Social Science Medicine* 111, pp. 107-115

Kroezen, M., Francke, A. L., Groenewegen, P.P. and Van Dijk, L. (2012) Nurse Prescribing of Medicines in Western European and Anglo-Saxon Countries: A survey on forces, conditions and jurisdictional control, *International Journal of Nursing studies,* 49(8), pp. 1002-1012.

Kroezen, M., Van Dijk, L., Groenewegen, P.P. and Francke, A. L. (2011) Nurse prescribing of medicines in Western European and Anglo-Saxon countries: a systematic review of the literature, *BMC Health Service Research*, 11, pp.127-144.

Kuhn, T. S. (1962), *The Structure of Scientific Revolutions*, Chicago: The University of Chicago Press.

Lally, P., van Jaarsveld, C.H.M., Potts, H.W.W. and Wardle, J. (2010) 'How are habits formed: Modelling habit formation in the real world', *European Journal of Social Psychology,* 40(6), pp. 998-1009.

Langdridge, D. (2007) *Phenomenological psychology: Theory, research and method*, Harlow; UK: Pearson Education.

Larkin, M. and Thompson, A. (2012) 'Interpretative phenomenological analysis', In Thompson, A. and Harper, D. (eds.), *Qualitative research methods in mental health and psychotherapy: a guide for students and* practitioners, Oxford: John Wiley and Sons, pp. 99-116. https://doi.org/10.1002/9781119973249.

Larsen, D. (2004) Issues affecting the growth of independent prescribing, *Nursing Standard,* 19(2), pp. 33–39.

Latham, K. and Nyatanga, B. (2018) Community palliative care clinical nurse specialists as independent prescribers: part 1, *British Journal of Community Nursing*, 23(2), pp. 94-98.

Latham, K. and Nyatanga, B. (2018) Community palliative care clinical nurse specialists as independent prescribers: part 2, *British Journal of Community Nursing,* 23(3), pp. 126-133.

Latter, S. and Courtenay, M. (2004) Effectiveness of nurse prescribing: a review of the literature, *Journal of Clinical Nursing,* 13(1), pp. 26-32.

Latter, S., Maben J., Myall M., Courtenay M., Young A. and Dunn N. (2005) *An Evaluation of Extended Formulary Independent Nurse Prescribing. Final Report. Policy* Research Programme Department of Health and University of Southampton, UK.

Latter, S., Maben, J., Myall, M., Courtenay, M. and Young, A. (2007a) Evaluating the clinical appropriateness of nurses prescribing practice: method development and findings from an expert peer panel analysis, *Quality Safe Healthcare,* 16(4), pp. 415-421.

Latter, S., Maben, J., Myall, M., Young, A. and Baileff, A. (2007b) Evaluating prescribing competencies and standards used in nurse prescribers prescribing consultations, *Journal of Research in Nursing,* 12(1), pp. 7-26.

Laverty, S.M. (2003) Hermeneutic Phenomenology and Phenomenology: A Comparison of Historical and Methodological Considerations, *International Journal of Qualitative Methods,* 2(3), pp. 21-35.

Lewis-Evans, A. and Jester, R. (2004) Nurse prescribers experience of prescribing, *Journal of Clinical Nursing,* 13(7), pp. 796-805.

Lim, A.G., North, N. and Shaw, J. (2017) Navigating professional and prescribing boundaries: Implementing nurse prescribing in New Zealand, *Nurse Education in Practice,* 27, pp. 1-6.

Lim, A.G., North, N. and Shaw, J. (2018) Beginners in prescribing practice: Experiences and perceptions of nurse and doctors *Journal of Clinical Nursing* 27, pp. 1103-1112

Luker, K. and McHugh, G.A. (2002) Nurse prescribing from the community nurse's perspective, *International Journal of Pharmacy Practice,* 10(4), pp. 273–280.

Luttrell, W. (2010) *Qualitative Educational Research* NY: Routledge.

Lynecham, J., Parkinson, C. and Denholm, C. (2008) Explicating Benner's concept of expert practice: intuition in emergency nursing, *Journal of Advanced Nursing,* 64(4), pp. 380–87.

Maddox, C., Halsall, D., Hall, J. and Tully, M.P. (2016) Factors influencing nurse and pharmacist willingness to take or not take responsibility for non-medical prescribing, *Research in Social and Administrative Pharmacy*, 12(1), pp.41-55.

Maddox, C. (2011) *Influences on Non-Medical Nurse and Pharmacist Prescribers in Primary and Community Care.* PhD thesis University of Manchester. Available at: https://ethos.bl.uk/OrderDetails.do?uin=uk.bl.ethos.549059 (accessed 24th April 2018).

McCutcheon, H. and Pincombe, J. (2001) "Intuition: an important tool in the practice of nursing", *Journal of Advanced Nursing*, 35 (3), pp. 342-348.

van Manen, M. (1990) *Researching lived experience: Human science for an action sensitive pedagogy*, Albany: NY State University of New York Press.

van Manen, M. (1984) Practicing Phenomenological Writing, *Phenomenology and Pedagogy*, 2 (84), pp. 36-39.

van Manen, M. (1996) 'Phenomenological Pedagogy and the Question of Meaning', In Vandenberg, D. (ed.) *Phenomenology and Educational Discourse.* Durban: Heinemann Higher and Further Education, (pp. 39-64).

van Manen, M. (1997). *Researching lived experience: Human science for an action sensitive pedagogy* 2nd edn. London; Ontario; Canada: Althouse Press.

van Manen, M. (1999) 'The pathic nature of inquiry and nursing', In: Madjar, I. and Walton, J. (eds) *Nursing and the Experience of Illness: Phenomenology in Practice,* London: Routledge. pp. 17-35.

van Manen, M. (2000) Moral Language and Pedagogical Experience, *Journal of Curriculum Studies,* 32(2), pp. 315-327.

van Manen, M. (2006) Writing Qualitatively or the demands of writing *Qualitative Health Research* 19(5), pp. 713-722.

van Manen, M. (2014) On Ethical (In) Decisions Experienced by Parents of Infants in Neonatal Intensive care, *Qualitative Health Research,* 24(2), pp. 279-287.

van Manen, M. (2014) *Phenomenology of Practice,* New York: Routledge.

van Manen, M. (2017) 'But Is It Phenomenology?', *Qualitative Health Research,* 27(6), pp. 775–779. doi: 10.1177/1049732317699570.

Maxwell, S.R. (2016) Rational prescribing: the principles of drug selection, *Clin Med*, 16(5), pp.459-464.

Maxwell, S. R. (2005) Evidence based prescribing, *BMJ (Clinical research ed.)*, *331*(7511), pp.247–248.

McCaughan, D., Thompson, C., Cullum, N., Sheldon, T. and Raynor, P. (2005) Nurse practitioner and practice nurses' use of research information in clinical decision making: finding of an exploratory study, *Family Practice,* 22(5), pp.490-497.

McCutcheon, H. H. and Pincombe, J. (2001) Intuition: an important tool in the practice of nursing, *Journal of Advanced Nursing,* 35(3), pp. 342–348. https://doi.org/10.1046/j.1365-2648.2001.01882.x

McIntosh, T., Stewart, D., Forbes-McKay, K., McCraig, D. and Cunningham, S. (2016) Influences on prescribing decision making among non-medical prescribers in the United Kingdom: systematic review, *Family Practice,* 33(6), pp. 572-579.

Melin-Johansson, C., Palmqvist, R. and Rönnberg, L. (2017) Clinical intuition in the nursing process and decision-making—A mixed-studies review *Journal of Clinical Nursing,* 26(23-24), pp. 3936-3949.

Mertens, D.M. (2005). Research methods in education and psychology, *Integrating diversity with quantitative and qualitative approaches* 2nd edn. Thousand Oaks: Sage.

Merton, R. K. (1972) Insiders and outsiders: A chapter in the sociology of knowledge, *American Journal of Sociology*, 78(1), pp. 9-47.

Minichiello, V., Aroni, R. and Hays, T. (2008) In-depth interviewing 3rd edn. Australia: Pearson Education.

Moustakas, C. (1994) *Phenomenological Research Methods*, Thousand Oaks: Sage Publications.

Mucklow, J., Bollington, L. and Maxwell, S, (2011) Assessing Prescribing Competence, *British Journal of Clinical Pharmacology,* 74(4), pp. 632-639.

Muir, N. (2004) Clinical decision-making: theory and practice, *Nursing Standard,* 18(36), pp.47-52.

Muswazi, M.T. and Nhamo, E. (2013) Note taking: A lesson for Novice Qualitative Researchers, *Journal of Research and Method in Education,* 2(3), pp. 13-17.

National Prescribing Centre (2001) *Maintaining competency in prescribing: An outline framework to help nurse prescribers,* Liverpool: NPC.

Ness, V., Price, L., Currie, K. and Reilly, J. (2016) Influences on independent nurse prescribers' antimicrobial prescribing behaviour: a systematic review, *Journal of Clinical Nursing,* 25(9-10), pp. 1206-1217.

Nicholl, H. and Higgins, A. (2004) Reflection in Preregistration Nursing Curricula, *Journal of Advanced Nursing,* 46(6), pp. 578-585.

Noblet, T., Marriott, J., Graham-Clarke, E. and Rushton, A. (2017) Barriers to and facilitators of independent non-medical prescribing in clinical practice: a mixed – methods systematic review *Journal of Physiotherapy* 63, pp. 221-234

Nolan, P. and Bradley, E. (2007) The role of the nurse prescriber: the views of the mental health nurses, *Journal of Psychiatric and Mental Health Nursing,* 14(3), pp. 258

Nursing and Midwifery Council (2018) *Standards of Proficiency for Registered Nurses,* London: NMC.

Nursing and Midwifery Council (2015) *The Code Professional standards of practice and behaviour for nurses, midwives and nursing associates,* London: NMC.

Nursing and Midwifery Council (2006) *Standards for Proficiency for Nurse and Midwife Prescribers*, London: NMC.

Nuttall, D. (2018) Nurse prescribing in primary care: a metanalysis of the literature, *Primary Health Care Research and Development*, 19(1), pp.7-22.

O'Neil, E.S., Dluhy, N.M. and Chin, E. (2005) Modelling novice clinical reasoning for computerised decision support system, *Journal of Advanced Nursing,* 49(1), pp. 68-77.

Orbell, S. and Sheeran, P. (2000) Motivational and Volitional Processes in Action Initiation: A Field Study of the Role of Implementation Intentions, *Journal of Applied Social Psychology,* 30(4), pp. 780-797.

Offredy, M, (2002) Decision-making in primary care: outcomes from a study using patient scenarios, *Journal of Advanced Nursing*, 40(5), pp.532-541.

Offredy, M., Kendall, S. and Goodman, C. (2008) The use of cognitive continuum theory and patient scenarios to explore nurse prescribers' pharmacological knowledge and decision-making, *International Journal of Nursing Studies* ,45(6), pp. 855-868.

O'Leary, Z. (2010) *The Essential Guide to Doing Your Research Project,* London: Sage.

O'Neill, E.S., Dluhy, N.C. and Chun, E., (2005) Modelling novice clinical reasoning of a computerised system, *Journal of Advanced Nursing*, 49(1), pp. 68-77.

Parse, R.R. (2001) *Qualitative Inquiry: The Path of Sciencing*, Boston: Jones and Bartlett Publishers.

Patton, M. Q. (2015) *Qualitative Research and Evaluation Methods* 4th edn. Thousand Oaks; CA: Sage.

Patton, M.Q. (2002) *Qualitative Research and Evaluation Methods* 3rd edn. Thousand Oaks; C: Sage.

Patton, M.Q. (1987) *How to use Qualitative Methods in Evaluation,* Newsbury Park London; New Delhi: Sage Publications Inc.

Paul Peter, J. (1992) Realism or Relativism for Marketing Theory and research: A comment on Hunt's "Scientific Realism", *Journal of Marketing,* 56(2), pp. 72-79.

Paley, J. (2017) *Phenomenology as qualitative research a critical analysis of meaning attribution,* London: Routledge.

Pearson, H. (2013) Science and intuition: Do both have a place in clinical decision making? *British Journal of Nursing,* 22(4), pp. 212-215.

Peniston-Bird, F. (2008) Blog: Scripts and Dilemmas, *Nursing Times.* Available at: https://www.nursingtimes.net/archive/blog-scripts-and-dilemmas-08-02-2008/ (accessed 6th June 2020).

Peterson, A. L. (2015) A case for the use of autoethnography in nursing research, *Journal of Advanced Nursing*, 71(1), pp. 226-233.

Pietkiewicz, I. and Smith, J.A. (2014) A practical guide to using Interpretative Phenomenological Analysis in qualitative research psychology, *Psychological Journal,* 20(1), pp. 7-14.

Pijl-Zieber, E., Barton, S., Konkin, J, Awosoga, O. and Caine, V. (2014) Competence and competency-based nursing education: Finding our way through the issues, *Nurse Education Today,* 34(5), pp. 676-678.

Philip, A. and Winfield, L. (2010) Why prescribe antibiotics for otitis media in children? *Nurse Prescribing,* 8(1), pp.14-19.

Polit, D.F. and Hungler, B. P. (1999) *Nursing Research. Principles and Methods* 6th edn. Philadelphia, New York; Baltimore: J.B. Lippincott Company.

Pope, C., Ziebland, S. and Mays, N. (2000). Qualitative research in health care: Analysing the data, *BMJ*, 320(7227), pp. 114-116.

PRISMA (2009) *Transparent reporting of systematic reviews and meta-analyses.* Available at: http://www.prisma-statement.org/PRISMAStatement/FlowDiagram (accessed 27th May 2020)

Raiffa, H. (1970) *Decision Analysis: Introductory Lectures on Choices under Uncertainty,* Reading MA: Addison-Wesley.

Reid, K., Flowers, P. and Larkin, M. (2005) Exploring lived experience, *The Psychologist,* 18(1), pp.20-23.

Rew, L. and Barrow, E. M. (1987) Intuition: a neglected hallmark of nursing knowledge, *ANS Adv Nurs Sci,* 10(1), pp.49-62.

Rew, L. and Barrow, E. M. (2007 State of the science: Intuition in nursing, a generation of studying the phenomenon, *ANS Adv Nurs Svi,* 30(1), pp. 15 – 25.

Richards, L. (2014) *Handling qualitative data: A practical guide*, London: Sage Publications.

Ritchie, J. and Lewis, J. (eds.) (2003) *Qualitative Research Practice: A Guide for Social Science Students and Researchers,* London: Sage Publications.

Robson, W. (2013) Prescribing errors: taking the human factor into account, *Nursing Practice,* 11(9), pp. 455-458.

Rothwell, C., Burford, B., Morrison, J., Morrow, G., Allen, M., Davies, C., Baldauf, B., Spencer, J., Johnson, N., Peile, E., Illing, J. (2012) Junior doctors prescribing: enhancing their learning in practice. Br J Clin Pharmaco,. 73(2), pp.194–202.

Ross, J.D. and Kettles, A.M. (2012) Mental health nurse independent prescribing: what are nurse prescribers' views of the barriers to implementation? Journal of Psychiatric and Mental Health Nursing, 19(10), pp. 916-932.

Rowbotham, S., Chisholm, A., Moschogianis, S., Chew-Graham, C., Cordingley, L., Wearden, A. and Peters, S. (2012). Challenges to nurse prescribers of a no-antibiotic prescribing strategy for managing self-limiting respiratory tract infections, *Journal of Advanced Nursing,* 68(12), pp.2622–2632.

Royal College of Nursing (2012) *Advanced nurse practitioners: an RCN guide to advanced nursing practice, advanced nurse practitioner and programme accreditation.* Available at: https://www.rcn.org.uk/professional-development/advanced-practice-standards (accessed 9th June 2020).

Royal College of Nursing (RCN) (2020) *Medicines Management An overview for nursing.* Available at: https://www.rcn.org.uk/-/media/royal-college-of-nursing/documents/publications/2020/january/009-018.pdf?la=en (accessed 12th June 2020).

Royal Pharmaceutical society (2016) *Prescribing Competency Framework.* Available at: https://www.rpharms.com/resources/frameworks/prescribers-competency-framework (accessed 16th July 2018).

Sahakian, B. J. and Labuzetta, J. N. (2013) *Bad moves: how decision making goes wrong, and the ethics of smart drugs,* London: Oxford University Press.

Salazar, M.K. (1990) Interviewer Bias: How It Affects Survey Research, *AAOHN Journal,* 38(12), pp.567-572.

Savin-Baden, M. and Howell Major, C. (2013) *Qualitative Research The essential guide to theory and practice,* Oxon: Routledge.

Schön, D.A. (1983) *The reflective practitioner: How professionals think in action,* Oxon: Routledge.

Schutz, A. (1970) *Reflections on The Problem of Relevance.* New Haven: Yale University Press.

Scrafton, J., McKinnon, J. and Kane, R. (2012) Exploring nurses' experiences of prescribing in secondary care: informing future education and practice, *Journal of Clinical Nursing,* 21(13-14), pp. 2044-2053.

Scotland, J. (2012) Exploring the Philosophical Underpinnings of Research: Relating Ontology and Epistemology to the Methodology and Methods of the Scientific, Interpretive, and Critical Research Paradigms, *English Language Teaching*, 5(9), pp. 9-16.

Shepard, K.F., Jensen, G.M., Schmoll, B.J., Hack, L.M. and Gwyer, J. (1993) Alternative approaches to research in physical therapy: positivism and phenomenology, *Physical Therapy,* 73(2), pp. 88-101.

Short, E.C. (1984) Competence re-examined. *Educational Theory.* 34(3), pp. 201-207.

Silverman, D. (1993) *Interpreting Qualitative Data: Methods for Analysing Talk, Text and Interaction,* London: Sage.

Silverman, D. (2004) *Interpreting qualitative data: methods for analysing talk, text and interaction 2nd edn.* London: Sage.

Smith, D. (1997) Phenomenology: Methodology and Method. In Boud, D. and Garrick, J. (eds.) *Understanding learning at work*, London: Routledge.

Smith, A., Latter, S, and Blenkinsopp, A. (2014) Safety and quality of nurse independent prescribing: a national study of experiences of education, continuing professional development clinical governance, *Journal of Advanced Nursing,* 70(11), pp. 2506–2517.

Smith, J. A .and Osborn, M. (2003) Interpretative phenomenological analysis. In Smith, J.A. (ed.) Q*ualitative psychology: A practical guide to research methods,* London: Sage.

Smith, J.A., Flowers, P. and Larkin, M. (2009) *Interpretative phenomenological analysis: theory, method and research*, London: Sage Publications Ltd.

Sodha, M., Williams, G., Shah, R. and Clegg. (2002a) Nurses prescribing testing the knowledge base, *Journal of Community Nursing,* 16(3), pp. 4-14.

Sodha, M., Mclaughlin, M., Williams, G. and Dhillon, S. (2002b) Nurses' confidence and pharmacological knowledge: a study, *British Journal of Community Nursing,* 7(6), pp. 309-315.

Spence, D. and Anderson, M. (2007) Implementing a prescribing practicum within a Master's degree in advanced nursing practice. Nursing Praxis New Zealand, 23 (2), pp 27-42.

Staffordshire University (2016) *Proportionate Ethical Review.* Available at: http://www.staffs.ac.uk/research/ethics/index.jsp#forms (accessed 31st June 2016).

Staffordshire University (2018) *Ethical review Policy*. Available at: https://www.staffs.ac.uk/research/opportunities-for-academics/research-governance/research-ethics (accessed 30/7/2019).

Standing, M. (2008) Clinical judgement and decision-making in nursing- nine modes of practice in a revised cognitive continuum, *Journal of Advanced Nursing,* 62(1), pp. 124-134.

Stenfors-Hayes, T., Hult, H. and Dahlgren, M. A. (2013) A phenomenographic approach to research in medical education, *Medical Education*, 47(3), pp.261–270.

Stenner, K., Carey, N. and Courtenay, M. (2010) How nurse prescribing influences the role of the nurse, *Nurse Prescribing,* 8(1), pp. 29-34.

Stolte, J.F. (1994) The context of satisficing in vignette research *The Journal of Social Psychology* 134(6), pp.727-733.

Tanner, C.A. (1987) Theoretical perspectives for research on clinical judgement In Hannah, K.J., Reimer, M. and Mills, W.C. (eds.) *Clinical Judgement and Decision Making*, New York: John Wiley.

Taylor, B.J. (2006) Factorial Surveys: Using vignettes to study professional judgement, *The British Association of Social Work,* 36 (7), pp. 1187-1207.

Thompson, S., Moorley, C. and Barratt, J. (2016) A comparative study on the clinical decision-making processes of nurse practitioners vs. medical doctors using scenarios in a secondary care environment, *Journal of Advanced Nursing*, 73 (5), pp. 1097-1110.

Thompson, C., McCaughan, D., Cullum, N., Sheldon T.A., Munshall, A. and Thompson, D. R. (2002) Research information in nurses' clinical decision-making: what is useful? *Journal of Advanced Nursing* 36(3), pp. 376-388.

Thompson, C. (1999) A conceptual treadmill: the need for 'middle ground' in clinical decision-making theory nursing, *Journal of Advanced Nursing,* 30 (5), pp. 1222-1229.

Titchen, A. and McIntrye, D. (1993) A phenomenological approach to qualitative data analysis in nursing research, In Titchen, A. (ed.) *Changing nursing practice through action research* (Repot No 6:29-48) Oxford: National Institute for Nursing, Centre for Practice Development.

Tobin, G.A. and Begley, C.M. (2004) Methodological rigor within a qualitative framework, *Journal of Advanced Nursing,* 48(4), pp.388-396.

Tod, A. (2007) 'Interviewing' In Gerrish, K. and Lacey, A. *The Research Process in Nursing*. Blackwell Publishing. Oxford, (Chapter 22).

Townsend, A., Cox, S.M. and Li, L.C. (2010) Qualitative Research Ethics: Enhancing Evidence-Based Practice in Physical Therapy, *Phys Ther,* 90(4), pp. 615–628.

Trede, F. and Higgs, J. (2009) 'Framing research questions and writing philosophically: the role of framing research questions', In Higgs, J. Harsfall, D. and Graces, S. (eds.) *Writing qualitative research on practice* Rotterdam: Senses Publisher.

Tuffour, I. (2017) A critical overview of interpretative phenomenological analysis: a contemporary qualitative research approach, *Journal of Healthcare Communications*, 2 (4), pp. 1-5.

Turpin, G., Barley, N., Scaife, J., Slade, P., Smith, J.A. and Walsh, S. (1997) Standards for research projects and theses involving qualitative methods: suggested guidelines for trainees and courses, *Clinical Psychology Forum*, 108, pp. 3-7.

Walsh, D. and Downe, S. (2006) Apprising the quality of qualitative research *Midwifery* 22(2), pp.108–119.

Weaver, K. and Olson, J.K. (2006) Understanding paradigms used for nursing research, *Journal of Advanced Nursing,* 53(4), pp. 459-469.

Weglicki, R.S., Reynolds, J. and Rivers, P.H. (2015) Continuing professional development needs of nursing and allied health professionals with responsibility for prescribing, *Nurse Education Today*, 35, pp. 227-231.

Weiss, M.C. (2011) Diagnostic decision making: the last refuge for general practitioners? *Soc Sci Med*.73(3), pp.375-82.

While, A. and Briggs, K.S.M. (2004) Benefits and challenges of nurse prescribing, *Journal of Advanced Nursing,* 45(6), pp. 559-567.

Whittemore, R. and Knafl, K. (2005) The integrative review: updated methodology, *Journal of Advanced Nursing,* 52(5), p.546-543.

Wilkinson, S. and Kitzinger, C. (2013) Representing our own experience: Issues in "insider" research, *Psychology of Women Quarterly,* 37(2), pp. 251-255.

Wilks, T. (2004) The use of vignettes in qualitative research into social work values, *Qualitative Social Work,* 31(1), pp. 78-87.

Willig, C. 2001. *Introducing qualitative research in psychology: Adventures in theory and method,* Buckingham: Open University Press.

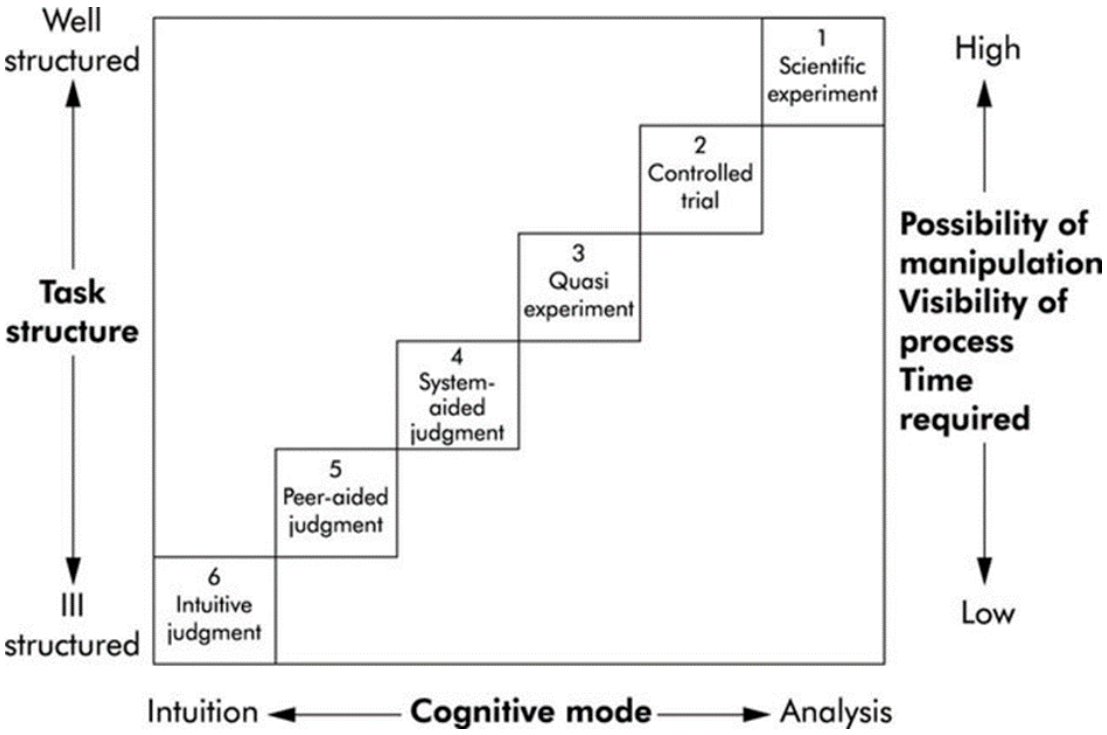
Willig, C. (2013). *Introducing qualitative research in psychology*, Maidenhead: McGraw-Hill education.

Wilson, M., Gerber, K., Mahoney, S. and Ofell, M. (2012) An audit of independent nurse prescribing in a critical care outreach team, *Nursing in Critical Care,* 17(2), pp. 83-89.

Woolley, N (1990) Nursing diagnosis: exploring the factors which may influence the reasoning process, *Journal of Advanced Nursing,* 15(1), pp. 110-117.

APPENDICES

Appendix 1 Cognitive Continuum Theory Reproduced from Hamm (1988)



Appendix 2 Search strategy

Search Strategy	
Type of literature reviewed	Qualitative, Quantitative and Mixed Methods
Approach	Initial search, Citation search, internet search
Date Range	2006-2019
Limits	English, Human
Inclusion	nurse prescriber, nurse prescribing, non-medical prescribing, competence, decision making, scope of practice, professional boundaries, role transition
Exclusion	Discussion pieces, review articles, letters commentaries, allied health professional prescribers, community practitioner prescribing, supplementary prescribing, patient satisfaction, treatment options and therapies
Terms	Nurse prescriber OR nurs* prescri* OR non-medical Prescri*AND competence Nurse prescriber OR nurs* prescri* OR non-medical Prescri*AND scope of practice Nurse prescriber OR nurs* prescri* OR non-medical Prescri*AND decision making Nurse prescriber OR nurs* prescri* OR non-medical Prescri* AND professional boundaries Nurse prescriber OR nurs* prescri* OR non-medical Prescri*AND role transition

Appendix 3 Inclusion Exclusion Criteria

Inclusion criteria	Exclusion criteria	Rationale
Nurse Independent Prescribers (NIPs)	Non-medical prescribers from allied health professional (AHP)background	NIPs are the author's area of interest AHP prescribers have a different professional body
	Supplementary prescribers	Supplementary prescribers require shared decision making with medical colleagues before prescribing occurs
	Community practitioner nurse prescribers (CPNP)	CPNP have a limited formulary
Prescribing decision-making	Decision-making related to drug choice or effect of medication	Relevance to the research question
Views or experiences of prescribers	Patient views or perceptions	Relevance to the research question
Primary and acute care within the UK	Non-UK countries	To ensure equity in relation to legislation and professional body requirements
Studies undertaken from 2006 onwards	Studies undertaken before 2006	Legislation changes relating to extension of prescribing rights
Peer-reviewed studies,	Commentary systematic reviews unpublished work, opinions, letters and editorials	Lack of evidence base
Papers written in English	Papers written in languages other than English	This review focuses on UK research
Studies undertaken within the UK	Studies in countries outside of the UK	Legislation and professional boundaries differ for NIP between countries

Appendix 4 Assessment and scoring of review papers (example 1 of 3)

Criteria	Paper Number											
	1	2	3	4	5	6	7	8	9	10	11	12
Explicit theoretical framework	0	NS -SR	2	0	0	0	0	NS / C	0	0	NS /LR	NS /LR
Statement of aims/ objectives in main body of report	2		2	2	2	0	2		0	0		
Clear description of research setting	2		2	0	2	1	2		1	1		
Evidence of sample size considered in terms of analysis	2		2	2	2	2	2		2	1		
Representative sample of target group of a reasonable size	2		2	2	2	2	2		2	1		
Description of procedure for data collection	2		2	2	2	2	2		2	2		
Rationale for choice of data collection tool(s)	2		2	0	2	2	2		0	0		
Detailed recruitment data	2		2	2	2	2	2		2	1		

Statistical assessment of reliability and validity of measurement tool(s) (Quantitative only)	NA		NA	NA	NA	NA	2	NA	2	NA	NA	NA
Fit between stated research question and method of data collection (Quantitative only)	NA		NA	NA	NA	NA	2	NA	2	NA	NA	NA
Fit between stated research question and format and content of data collection tool e.g. interview schedule (Qualitative only)	2		2	2	2	2	2		NA	1		
Fit between research question and method of analysis (Quantitative only)	NA		NA	NA	NA	2	NA	NA	2	2	NA	NA
Good justification for analytic method selected	2		2	2	2	0	2		1	1		
Assessment of reliability of analytic process (Qualitative only)	2			2	2	0	2		NA	2		
Evidence of user involvement in design	1		2	2	0	0	2		2	0		
Strengths and limitations critically discuss-ed	1		2	1	2	1	0		0	0		

NS - not scored
LR - literature review
SR - systematic review
C - commentary
NA - not applicable

Appendix 5 Thematic analysis of literature

	Author	Date	Method	Participants	Keywords /findings	value	score
1	Abuzour, Lewis & Tully UK region Manchester	2018	SSI -and 'think aloud' model	NP (n=11) PP (n=10)	Clinical competence; clinical reasoning; decision-making; independent prescribing; non-medical prescribing; nurses; pharmacists Themes - case familiarisation, generating initial hypotheses, case assessment, final hypotheses and decision making, clinical knowledge, experience, professional background, context and attitudes of independent prescribers in this study greatly influenced their clinical reasoning and decision-making. A distinct pattern was found in the process undertaken to reach a clinical decision, which is presented as a decision-making model.	First qualitative systematic review, key strength is using theoretical framework to understand complexities of prescribing although included pharmacists as well as nurses. use of vignette, self-perceived competencies	22
2	Adigwe UK region Leeds	2012	1.SSI - F2F 2. Online 3. SSI- F2F	1. NP (n=9) PP (n=13) 2. NP (n=141) PP (n=27) 3. P (n=+12)	Safety and support in prescribing environment, relationships important, lack of knowledge of nurses related to pharmacology	Very useful PhD thesis	26

3	Bowskill, Timmons & James UK – region South Derbyshire	2012	SSIs	NP (n=26)	Integration, nurse prescribing, professional boundaries, trust. Themes - prescribing in practice, prescribing for patients, prescribing as the need arises, prescribing agreements and prescribing relationships Knowledge, role, competence, formularies, restrictions, boundaries, limitations, relationships, trust required for successful partnership	Valuable as focus on self-restriction and trust	16
4	Downer & Shepherd UK region West of Scotland	2010	Conversational F2F Interviews	NP (n=8)	DN, experience, qualitative approach benefits, challenges. Themes - influence on prescribing practice, benefits of nurse prescribing, difficulties with nurse prescribing	Small scale study purposive sampling influences on prescribing practice themes Findings similar to other	13
5	Herklots Baileff & Latter UK-region Southampton	2015	SSI	NP (n=7)	Community matron, Nurse prescriber, Experiences, Qualitative, Interview. Themes - importance of prescribing knowledge, community matrons prescribing practice, support for community matrons Sub themes included frequency of prescribing, limited personal formularies, barriers to prescribing safe practice, CPD prescribing support, confidence in prescribing. A prescribing qualification is essential for fulfilling the role of the community matron. The knowledge gained	Small sample size: community matron focused	18

					from undertaking a prescribing qualification is highly valued—Community matrons are regular prescribers, prescribing from a limited range of medicines and for a limited range of conditions. Support for prescribing is available but usually informal and is sometimes difficult to access		
6	Latham & Nyatanga part 1 +2 UK region Hereford and Worcester	2018	SSI – F2F	NP (n=6)	Palliative care, NMP, NIP, NP, end of life, community. NP aim improving Quality of life Opposition fear limited formulary, barrier to prescribing Themes – perceived benefits of nurse prescribing, barriers to prescribing, impact of the prescribing role, reflections on prescribing course, and recommending the role to others	Small scale new study, West midlands focused, interpretative phenomenology used	15
7	Latter et al UK Region, National	2007	Case study multiple data collection	sample (n=6 for first wave) (n_10 observation phase	ANP, advanced clinical skills, NMP, NIP, medicines management Second part of larger national study evaluation the expansion of nurse prescribing Objectives to review frequency of prescribing range and competencies of prescribing, accuracy of prescriptions and record keeping NIP not asking about OTC, allergies and lack of comprehensive history taking evident	Old study	18

8	Maddox, Hassall, Hall, &Tully UK region Manchester	2016	1. SSI- F2F or telephone 2. Focus group	1. NP (n=15) PP (n=5) 2. NP (n=10)	NMP, pharmacists, responsibility, competence. Competency, role, risk, lack CPD, confidence affects practice, reluctance to prescribe, pressure to prescribe Themes – underpinning cautiousness, competency, role and risk	Useful comparative of three separate studies	19
9	Offredy, Kendall & Goodman UK region Hertfordshire	2008	SSI-F2F	NP (n=18) NP students(n=7)	Nurse prescribing decision making, patient scenarios, cognitive continuum theory pharmacology Themes - Time spent on prescribing issues, participants' response to patients' scenarios, self-reported knowledge and confidence	Old study, addressing decision making in relation to nurse prescribers, cognitive continuum theory used	16
10	Philip & Winfield UK region Cornwall	2010	SSI -F2F	NP (n=8)	Themes perceptions of clinical guidelines, external influences on prescribing meeting parents' expectations, comfort with prescribing practice	Small sample size although valuable insight into perspectives of prescribers treating children with otitis media	14

11	Rowbotham, Chisholm, Moschogianis, Chew-Graham, Cordingley, Wearden & Peters UK region Manchester	2012	1.SSI -F2F 2.Focus group x3	1. NP (n=12) Another prescriber (n=2) 2. NP (n=19) PP (n=1) Physio prescriber (n=1)	Themes - reasons patients present with RTI, challenges faced by NPs when dealing with patients with RTI, strategies for managing RTI Confidence key Caution of new prescribers, protocol guidelines used to support practice, benefits of peer support seen Reported numerous challenges	Subjective decision-making processes Focused on patients presenting with respiratory tract infections and the decision as to treat of not	20

Literature review study characteristics: Admin, administrator; AHP, allied health professional; CPD, continued professional development; DMP, designated medical practitioner; F2F, face to face; GP, General practitioner; IP, independent prescriber, NIP, nurse independent prescriber,; NMP, non-medical prescribing; NP, nurse prescriber; PP, pharmacist prescriber; SSI ,semi structured interview; SP, supplementary prescriber; UK, United Kingdom.

Appendix 6 Literature review - emerging themes

	Subthemes and frequency															
Paper no.	Author	Decision making and risk	Relationships and support	Boundaries clinical governance	Self-restriction	Confidence	Knowledge and skills	Influences	Guidelines and protocols	Patient safety	Competence	Culture/ attitude	Pressure to prescribe	CPD	Formulary	experience	Education
1	Abuzour, et al (2018)	x	x			X	x				x					x	
2	Adigwe (2012)		x		x		x	x				x		x	x	x	
3	Bowskill et al (2012)		x	x	x						x				x		
4	Downer & Shepherd (2010)		x			x	x	X					x	x			x
5	Herklots et al (2015)		x		x	x	x			x	x		x	x	x		x

6	Latham & Nyatanga (2018) part 1 +2		x				x						x				
7	Latter et al (2007)	x					x				x						
8	Maddox et al (2016)	x	x	x	x	x				x	x	x	x				
9	Offredy et al (2008)	x		x	x	x	x	x			x						
10	Philip & Winfield (2010)					x		x	x	x			x			x	
11	Rowbotham et al (2012)	x	x				x		x	x			x				
	TOTAL	3	6	3	4	6	6	4	2	2	5	1	3	2	3	3	2

Appendix 7 Van Manen methodological guide for researchers

A. Turning to the Nature of Lived Experience

1. Orienting to the phenomenon

2. Formulating the phenomenological question

3. Explicating assumptions and preunderstandings

B. Existential Investigation

4. Exploring the phenomenon: generating “data”

4.1 Using personal experience as a starting point

4.2 Tracing etymological sources

4.3 Searching idiomatic phrases

4.4 Obtaining experiential descriptions from subjects

4.5 Locating experiential descriptions in literature, art, etc.

5. Consulting phenomenological literature

C. Phenomenological Reflection

6. Conducting thematic analysis

6.1.1 Uncovering thematic aspects in lifeworld descriptions

6.1.2 Isolating thematic statements

6.1.3 Composing linguistic transformations

6.2 Gleaning thematic descriptions from artistic sources

7. Determining essential themes

D. Phenomenological Writing

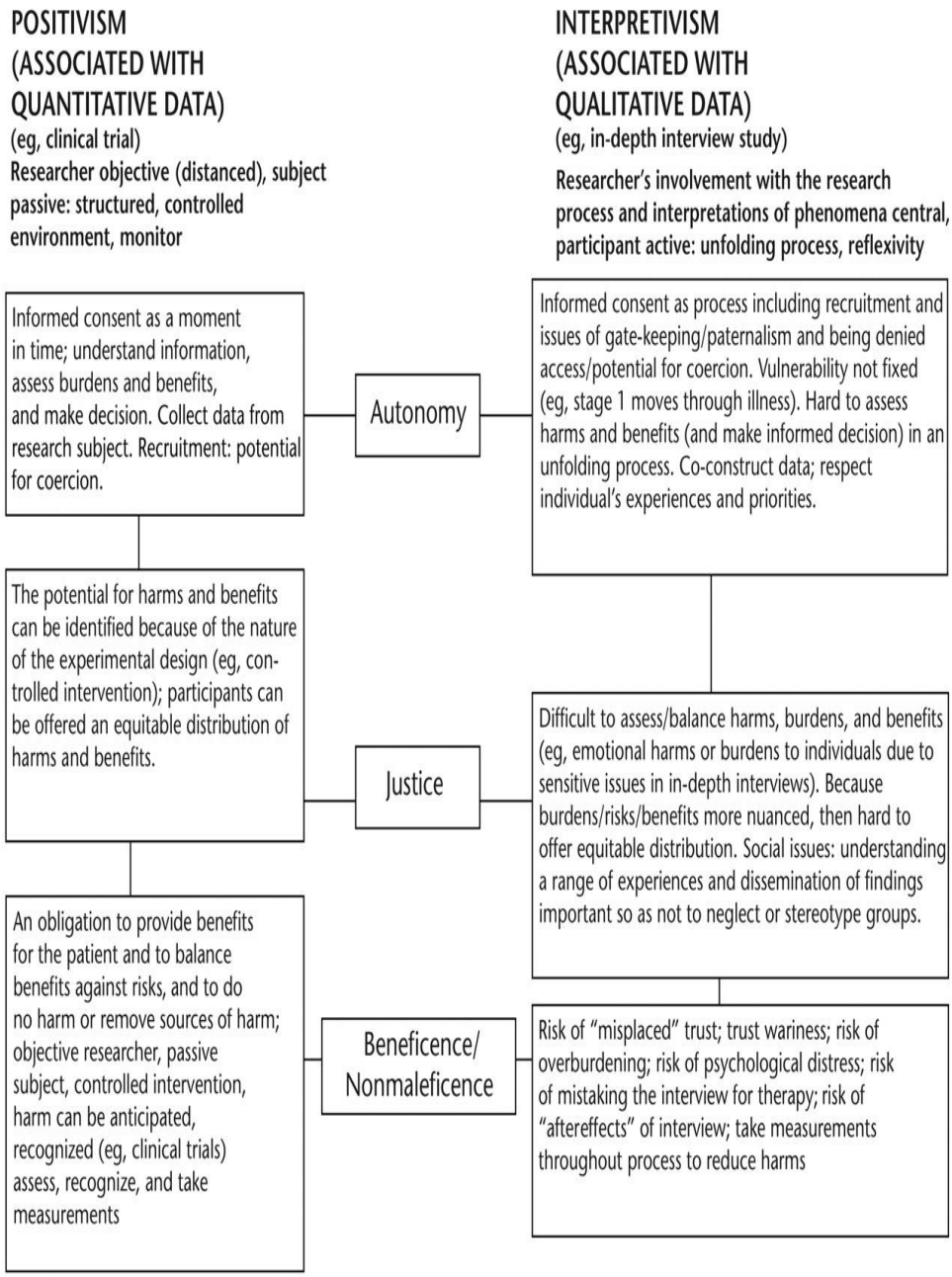
8. Attending to the speaking of language

9. Varying the examples 10. Writing

11. Rewriting: (A) to (D), etc.

(Van Manen 1984)

Appendix 8 Theoretical Approaches



Model illustrating theoretical approaches in research and associated ethical issues. *Physical Therapy*, Volume 90, Issue 4, 1 April 2010, Pages 615–628, https://doi.org/10.2522/ptj.20080388

Appendix 9 Trustworthiness criteria based on Guba's (1981)

Quality Criterion	Provision made by the researcher
Credibility	Adoption of appropriate, well recognised research methods (4.6) Development of early familiarity with culture of participating organisations (1.1) Sampling of individuals with knowledge and practice related to prescribing serving as informants (5.2.1) Triangulation via use of different methods, different types of informants and different sites (5.2.1) Tactics to help ensure honesty in informants (5.2.4 Debriefing sessions between researcher and superiors (Supervision records) Peer scrutiny of project (4.8.6,) Description of background, qualifications and experience of the researcher (1.1, 4.8.3) Member checks of data collected, and interpretations/theories formed (4.8.4) Thick description of phenomenon under scrutiny (Chapter 1) Examination of previous research to frame findings (Chapter 3)
Transferability	Provision of background data to establish context of study and detailed (1.5-1.8) Description of phenomenon in question to allow comparisons to be made (Chapter 1)
Dependability	Employment of "overlapping methods" (4.6.1, 4.6.2) In-depth methodological description to allow study to be repeated (chapter 5)
Confirmability	Triangulation to reduce effect of investigator bias (4.8.3) Admission of researcher's beliefs and assumptions (1.1) Recognition of shortcomings in study's method (7.4) In-depth methodological description to allow integrity of research results to be scrutinised (4.2)

Appendix 10 IPR approval letter

INDEPENDENT PEER REVIEW APPROVAL FEEDBACK

Date: 07/04/2017

To whom it may concern

Application for Independent Peer Review Approval

Researcher: **Sarah Woolley**

Study Title: **What influence does scope of practice have on prescribing decision making in a predetermined clinical situation?**

I can confirm that Staffordshire University supports this research project proposal being put forward by the above research project applicant, and that the University is willing to act as sponsor of the project if it received LREC approval.

Our support for this project takes account of the outcome of an independent peer review of its scientific merit undertaking within the University.

I can also confirm that the University has generic indemnity/insurance arrangements in place as stated on the attachment to this letter, that arrangements will be in place before the study starts for the research team to access resources and support to deliver the research as proposed, that arrangements to allocate responsibilities for the management, monitoring and reporting of the research will be in place before the research starts and that the duties of sponsors set out in the NHS Research Governance Framework for Health and Social Care will be undertaken in relation to this research.

Appendix 11 HRA approval

NHS
Health Research Authority

Mrs Sarah A Woolley
School of Health and Social Care
Blackheath Lane
Stafford
ST18 0YG

Email: hra.approval@nhs.net

10 July 2017

Dear Mrs Woolley,

Letter of HRA Approval

Study title:	**What influence does scope of practice have on prescribing decision making in a predetermined clinical situation**
IRAS project ID:	**218064**
REC reference:	**18/HRA/0110**
Sponsor	**Staffordshire University**

I am pleased to confirm that **HRA Approval** has been given for the above referenced study, on the basis described in the application form, protocol, supporting documentation and any clarifications noted in this letter.

Participation of NHS Organisations in England

The sponsor should now provide a copy of this letter to all participating NHS organisations in England.

Appendix B provides important information for sponsors and participating NHS organisations in England for arranging and confirming capacity and capability. **Please read *Appendix B* carefully**, in particular the following sections:

- *Participating NHS organisations in England* – this clarifies the types of participating organisations in the study and whether or not all organisations will be undertaking the same activities
- *Confirmation of capacity and capability* - this confirms whether or not each type of participating NHS organisation in England is expected to give formal confirmation of capacity and capability. Where formal confirmation is not expected, the section also provides details on the time limit given to participating organisations to opt out of the study, or request additional time, before their participation is assumed.
- *Allocation of responsibilities and rights are agreed and documented (4.1 of HRA assessment criteria)* - this provides detail on the form of agreement to be used in the study to confirm capacity and capability, where applicable.

Further information on funding, HR processes, and compliance with HRA criteria and standards is also provided.

It is critical that you involve both the research management function (e.g. R&D office) supporting each organisation and the local research team (where there is one) in setting up your study. Contact details

and further information about working with the research management function for each organisation can be accessed from www.hra.nhs.uk/hra-approval.

Appendices

The HRA Approval letter contains the following appendices:

- A – List of documents reviewed during HRA assessment
- B – Summary of HRA assessment

After HRA Approval

The attached document *"After HRA Approval – guidance for sponsors and investigators"* gives detailed guidance on reporting expectations for studies with HRA Approval, including:

- Working with organisations hosting the research
- Registration of Research
- Notifying amendments
- Notifying the end of the study

The HRA website also provides guidance on these topics and is updated in the light of changes in reporting expectations or procedures

Scope

HRA Approval provides an approval for research involving patients or staff in NHS organisations in England.

If your study involves NHS organisations in other countries in the UK, please contact the relevant national coordinating functions for support and advice. Further information can be found at http://www.hra.nhs.uk/resources/applying-for-reviews/nhs-hsc-rd-review/.

If there are participating non-NHS organisations, local agreement should be obtained in accordance with the procedures of the local participating non-NHS organisation.

User Feedback

The Health Research Authority is continually striving to provide a high quality service to all applicants and sponsors. You are invited to give your view of the service you have received and the application procedure. If you wish to make your views known please use the feedback form available on the HRA website: http://www.hra.nhs.uk/about-the-hra/governance/quality-assurance/.

HRA Training

We are pleased to welcome researchers and research management staff at our training days – see details at http://www.hra.nhs.uk/hra-training/

Your IRAS project ID is **218064**. Please quote this on all correspondence.

Appendix 12 Information sheet

What influence does scope of practice have on prescribing decision making in a predetermined clinical situation?

Information Sheet for Trust Prescribing lead

Independent/supplementary (IP) Nurse Prescribers are being invited to take part in a research study, undertaken by Sarah Woolley at Staffordshire University. Your assistance is requested to facilitate the delivery of details of this study to all IP Nurse Prescribers within your area who are actively prescribing and are employed in any of the following roles- Nurse Practitioner, Advanced Nurse Practitioner, Night Nurse Practitioner, Surgical Nurse Practitioner, Medical Nurse Practitioner. It is important that you understand why the research is being undertaken and what it will involve. Please take a little time to read this information carefully and ask for more information about anything that is not clear.

Nurse prescribing is undertaken in a wide variety of nursing roles in primary, secondary and independent care settings. This research will invite independent/supplementary Nurse Prescribers working in an acute care setting to consider prescribing in a predetermined hypothetical scenario and reflect on their proposed prescribing practice and how this relates to their individual scope of practice. The intention is to interview Nurses with varying levels of prescribing expertise with the agreed roles. Findings from this study will enable me to describe the influences on individual prescribing practice and how nurses identify this with their scope of practice.

This will add to existing prescribing research and inform the educational preparation and professional development of prescribing nurses of the future.

Who have been chosen?

Participants will be required to be active Independent/supplementary Nurse Prescribers working within UHNM as Nurse Practitioners, Advanced Nurse

Practitioners, Night Nurse Practitioners, Surgical Nurse Practitioners, Medical Nurse Practitioners.

Those agreeing to take part

For those who choose to participate in this research they will be asked to review a hypothetical clinical scenario requiring a prescribing intervention and propose an appropriate course of action that they would take in their current role. They will then be asked to reflect on their decision making. The interviews should take no longer than one hour and will be recorded on audio tape. Those wishing to take part in the study will be asked to contact me by telephone on 01785 353828 or email s.a.woolley@staffs.ac.uk

In the unlikely event that poor or unsafe practice is identified or disclosed by the participant during the interview process, appropriate action will be taken. A staged response is proposed, and the researcher will always use professional judgement and as an Independent Supplementary Nurse Prescriber herself will be able to identify variations in poor practice.

Stage 1: Poor practice. The researcher will talk to the practitioner, identify the action considered as poor practice and discuss acceptable and appropriate prescribing practice.

Stage 2: Practice considered a potential risk to patients. The researcher will talk to the practitioner, identify the action considered as poor practice and discuss acceptable and appropriate prescribing practice. The researcher will discuss accountability for prescribing practice in relation to scope of practice and clinical competence and identify any training needs.

Stage 3: Actual and immediate risk to patients. The researcher will stop the interview and inform the participant of the concern. The participant will be told that the disclosure will need to be acted upon. The researcher will inform the participants' line manager of the disclosure.

Please note that neither the information obtained as a result of participation in this research nor the analysis from discussion of the case scenario (i.e. the

hypothetical case) is intended for training purpose and should not be used as a source of information for participants' practice. Any decision to change practice as a result of the participation in this study and exposure to a hypothetical scenario by the participants will be encouraged to be discussed with line managers in conjunction with the Code of Professional Conduct.

Many thanks for your support

Sarah Woolley

Appendix 13 Informed Consent Form

I, the undersigned, confirm that (please tick box as appropriate):

1.	I have read and understood the information about the project, as provided in the information sheet dated _____.	☐
2.	I have been given the opportunity to ask questions about the project and my participation.	☐
3.	I voluntarily agree to participate in the project.	☐
4.	I understand I can withdraw at any time during the interview or within two weeks of data collection without giving reasons and that I will not be penalised for withdrawing nor will I be questioned on why I have withdrawn.	☐
5.	The procedures regarding confidentiality have been clearly explained (e.g. use of names, pseudonyms, anonymisation of data, etc.) to me, as included in participant information sheet.	☐
6.	Interview and audio data collection arrangements have been explained to me.	☐
7.	The use of the data in research, publications, sharing and archiving has been explained to me.	☐
8.	I understand that other researchers will have access to this data only if they agree to preserve the confidentiality of the data and if they agree to the terms I have specified in this form.	☐
9.	Select only **one** of the following: • I would like my name used and understand what I have said or written as part of this study will be used in reports, publications and other research outputs so that anything I have contributed to this project can be recognised. • I do not want my name used in this project.	☐ ☐
10.	I, along with the Researcher, agree to sign and date this informed consent form.	☐

Participant:

_____ _____ _____

Name of Participant Signature Date

Researcher:

_____ _____ _____

Name of Researcher Signature Date

Appendix 14 HRA amendments

New Site Amendment, Implementation Information

Dear Mrs Woolley

IRAS Project ID:	218064
Short Study Title:	Decision making strategies employed by nurse prescribers
Date complete amendment submission received:	09/07/2018
Sponsor Amendment Reference Number:	NSA 1
Sponsor Amendment Date:	09 July 2018
Amendment Type:	Non-substantial
For new sites in Northern Ireland and/or Scotland:	Please start to set up your new sites. Sites may not open until NHS management permission is in place.
For new sites in England and/or Wales:	For studies which already have HRA and HCRW Approval: **This email also constitutes HRA and HCRW Approval for the amendment, and you should not expect anything further**. Please start to set up your new sites. Sites may not open until the site has confirmed capacity and capability (where applicable). For studies which do not yet have HRA and HCRW Approval: **HRA and HCRW Approval for the initial application is pending**. You can start the process of setting up the new site but cannot open the study at the site until HRA and HCRW Approval is in place and the site has confirmed capacity and capability (where applicable). For studies with HRA Approval adding Welsh NHS organisations for the first time. Please take this email to confirm your **original HRA Approval letter is now extended to cover NHS organisations in Wales. You now have HRA and HCRW Approval.** Please start to set up your new sites. Sites may not open until the site has confirmed capacity and capability (where applicable).

Thank you for submitting an amendment to add one or more new sites to your project. This amendment relates solely to the addition of **new sites**.

What should I do next?

Please set up the new site(s) as per the guidance found within IRAS. **Please note** that processes change from time to time so please use the most up to date guidance about site set up.

If your study is supported by a research network, please contact the network as early as possible to help support set up of the new site(s).

If you have listed new sites in any other UK nations **we will** forward the information to the national coordinating function(s) for nations where the new site(s) are being added. In

Appendix 15 Participant information and Letter

Sarah Woolley
Staffordshire University
Blackheath Lane, Stafford
email:s.a.woolley@staffs.ac.uk
tele:01785 353828

Participant Letter

What influence does scope of practice have on prescribing decision making in a predetermined clinical situation?

Dear prescriber,

You are invited to take part in a Nurse prescribing research study to be undertaken by Sarah Woolley from Staffordshire University. The research is part of an academic award and will be conducted under the supervision of Professor Peter Kevern from the School of Health and Social Care.

The research aims to- explore the decision-making strategies employed by Independent/supplementary Nurse prescribers, working within an acute care hospital or community setting in an autonomous role, in a given hypothetical case scenario requiring a prescribing intervention.

Further details can be found on the participant information sheet attached. This information sheet explains why the research is being undertaken and what it involves.

Please take a little time to read this information carefully. If you have any questions or would like further clarification, please contact me by telephone or email.

Participation is entirely voluntary and you can withdraw at any time during the interview or within two weeks of data collection. If you are willing to be interviewed, please reply by email or telephone

Email: s.a.woolley@staffs.ac.uk

Tele: 01785 353828

Kind regards,

Sarah Woolley

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Participant Information Sheet

You are being invited to take part in a research study. Before you decide whether to participate it is important that you understand why the research is being undertaken and what it will involve. Please take a little time to read this information carefully and ask for more information about anything that is not clear.

Nurse prescribing is undertaken in a wide variety of nursing roles in primary, secondary and independent care settings. This research will invite you as an Independent/Supplementary Nurse Prescriber working in an acute care setting to consider your prescribing practice related to a pre-determined hypothetical clinical scenario and how this relates to your individual scope of practice. The intention is to interview Nurses with varying levels of prescribing expertise with agreed defined roles.

Findings from this study will enable me to describe the influences on individual prescribing practice and how nurses identify this with their scope of practice.

This will add to existing prescribing research and inform the educational preparation and professional development of prescribing nurses.

Why have I been chosen?

You are an active Independent/supplementary Nurse Prescriber working in a role title such as Nurse Practitioner, Advanced Nurse Practitioner, Night Nurse Practitioner, Surgical Nurse Practitioner or Medical Nurse Practitioner.

What do I have to do?

If you choose to participate in this research you will be asked to talk about your experience of prescribing in your practice area and explore potential prescribing

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options to a given hypothetical scenario. The interviews should take no longer than one hour. Recordings will be taken during the interview using a digital portable recording device to collect detailed and accurate records. The content of the recordings will be manually transcribed verbatim to represent accuracy of content and will not be edited in any way. Transcripts and themed data from the recordings will be stored within a secure university password protected computer file and will utilise a system of anonymised names for ethical reasons and to maintain confidentiality. Details of responders and consent forms will be kept and will be separate from the stored data.

Participants will be identifiable by an anonymised ID number. All data will be stored for 10 years and then destroyed as specified in the University policy on data storage. Confidentiality will be maintained by removal of names, and use of pseudonyms, with complete anonymisation of data. The data from the research, will be used with a Professional Doctorate and future publications. All data will be anonymised in preparation for publication. Other researchers will have access to this data having agreed to preserve the confidentiality of the data.

In the unlikely event that poor or unsafe practice is identified or disclosed by the participant during the interview process, appropriate action will be taken. A staged response is proposed and the researcher will use professional judgement at all times and as an Independent Supplementary Nurse Prescriber herself will be in a positon to identify variations in poor practice.

Stage 1: Poor practice. The researcher will talk to the practitioner, identify the action considered as poor practice and discuss acceptable and appropriate prescribing practice.

Stage 2: Practice considered a potential risk to patients. The researcher will talk to the practitioner, identify the action considered as poor practice and discuss

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acceptable and appropriate prescribing practice. The researcher will discuss accountability for prescribing practice in relation to scope of practice and clinical competence and identify any training needs.

Stage 3: Actual and immediate risk to patients. The researcher will stop the interview and inform the participant of the concern. The participant will be told that the disclosure will need to be acted upon. The researcher will inform the participants' line manager of the disclosure.

Please note that neither the information obtained as a result of participation in this research nor the analysis from discussion of the case scenario (i.e. the hypothetical case) are intended for training purpose and should not be used as a source of information for you in your practice. Any decision to change practice as a result of the participation in this study should be discussed with your line manager in conjunction with your Code of professional Conduct.

If you wish to take part in the study please contact me by telephone on 01785 353828 or email s.a.woolley@staffs.ac.uk

Many thanks

Sarah

Appendix 16 Interview Questions

Interview questions (probes-why, tell me more, really)

1. Can you tell me about your training to become a non-medical prescriber?

- Prompts: Where did you study? When did you study? Why did you select this HEI? What are your memories of the course? Was the course what you had expected? If not, why? Do you feel this prepared you for your role? Was this a requirement for your role?

2. Do you remember the initial focus of your prescribing remit? - Was there a particular area you focused on or a specific number of drugs within your formulary? Why did you select these drugs or formulary?

3. Was this choice related to a specific role or specialism?

4. Can you explain what you understand by the term used by the NMC 'prescribing within competence'?

5. Have you ever prescribed drugs knowingly outside of your competency? Tell me more?

6. Can you describe in as much detail as possible when and why, if ever, you have deviated from your initial prescribing intention? Why did this change occur?

7. Can you describe your prescribing remit currently and how this relates to your role?

8. Are there any organisational influences that you see relevant to your prescribing role?

- Prompts: do you have prescribing lead, do you have a PDR related to prescribing role, have you been pressured to prescribe by colleagues or patients? What do you understand by 'prescribing by proxy' have you done this?

Questions specifically related to the vignette

9. Tell me about the scenario you were presented with is this a situation you are familiar with within your role?

10. Can you explain how you would respond to this situation if you were in practice?

11. Can you tell me what influences your decision within this scenario?

12. Why did you make the decisions you made? What were those decisions based on, what supportive information did you draw from?

13. If this scenario was presented again would you do anything differently in future?

Appendix 17 Interview details - timeline

Participant Name (Pseudonym)	Trust type	Role	Gender	Year of registration as nurse	Year registered as a prescriber	Date of interview	Interview duration
1 Alan	Acute	Arrythmia Nurse Specialist	M	1989	2013	7/8/17	69 mins
2 Beth	Acute	Advanced Nurse Practitioner-Elderly Care	F	1996	2017	18/9/17	64 mins
3 Carl	Community	District Nurse-Charge Nurse	M	1994	2006	16/3/18	45 mins
4 Diane	Community	District Nurse- Sister	F	1993	2005	8/5/18	76 mins
5 Erica	Acute	Advanced Paediatric Nurse Practitioner	F	2007	2013	6/18	67 mins
6 Fern	Community	Community Matron	F	1984	2008	3/7/18	54 mins
7 Gail	Acute	MS Specialist Nurse	F	2006	2015	20/11/18	54 mins
8 Harry	Acute	Ambulatory Nurse Specialist	M	1991	2014	23/11/18	65 mins
9 Ian	Community	Community Matron	M	1993	2012	28/11/18	62 mins

Appendix 18 Vignette

An elderly lady presents to your area for assessment c/o a 2/7 h/o shortness of breath, talking in sentences no cyanosis or distress temperature 37.9, respiration rate 20, Oxygen Sats 98% on air, BP 150/78 cap refill < 2sec

DOB: 13.1.1944 Age 72

PMH: COPD diagnosed 2010, Type 2 diabetes diagnosed 2003,

Medication: metformin 1g BD, gliclazide 40mgs daily, simvastatin 20mgs daily, inhalers one blue, one brown

Allergies: penicillin - rash

Social: lives alone, retired factory worker, ex-smoker 20 per day from age 17 but stopped 10 years ago, no alcohol

An examination suggests an exacerbation of COPD

Appendix 19 Example of coding- interview 1

Assump-tion admission risk	OK so if she doesn't need admitting – that's my first thought with my patients – do we need to admit this patient to hospital or are they safe to be treated on an out-patient basis? She doesn't sound like she is someone that needs to be admitted and can be treated as an out-patient. So she is a bit pyrexial, exacerbation of COPD; so she might need some antibiotics. You are going to want to try and get a sample first and if she could cough up a sputum sample and send it off to MC&S. I mean you are going to examine them – mentioning examining and that I would have thought. Assessment	Decision Making Safety Tests Collecting information information
I	There has been an examination.	
P	OK. So I would still examine them anyway if somebody else has examined them or if that means I have examined them I am not sure but - examine them and see if everything is tied up with what we think it is. We are not on steroids are we? So they have probably got a steroid inhaler there. They might need steroids – probably not at this stage. Resps are up a bit but that's OK. Blood pressure is up a touch. They are not known to be hypertensive but that could be just be a one off. Perhaps see if they have got a blood pressure machine at home to see what home readings they can get or potentially a 24 hour BP. Prescribing wise – well, if you are going to give them some antibiotics you wouldn't be giving them now but you have got to take into account if they are allergic to penicillin and I don't prescribe antibiotics; you would want to see what the culture and sensitivity came back like and perhaps then choose an antibiotic based on that. It sounds like they have got a steroid inhaler. It sounds like they have got a preventer and their own reliever but you could ideally..... I mean you say you have got a blue one and a brown one so they are telling you they have got a blue one and a brown one. If they don't bring the list of medications..... I mean she hasn't brought them with her – she has a brown one and a blue one.	Reconfirm Finding Assumption About Treatment Interpretatic of findings Allergy Assessmen Limited Assumption About medication
I	That's correct.	
P	So if they don't know I usually give the GP a ring or check if they have got any recent letters on the system. They could potentially have more inhalers – it depends on the doses of them as well.	Checks Concurrent medication

Appendix 20 Word cloud

Appendix 21 Categorisation of themes

Theme	Subthemes	Interpretations
The context of knowledge acquisition	Preparation for the role 1,2,3,6,9*	Expectations of the course were variable Role of DMP important Pharmacology preparation required
	Motivation for role development 1,2,3,4,5,6,7,8,9	A variety of motivational factors identified specifically prescribing by proxy
	Assessment and diagnostics 1,2,3,4,5,6,7,8,9	Physical assessment preparation is often an underpinning, but diagnostics is lacking
	Expanding Prescribing opportunities 3,4,6	Lack of regard for community practitioner prescribing
	Rationale for role development 1,2,3,6	Career development important Professional development affects job prospects
	CPD 9	Ongoing education is seen as important but variable
Perception of competence	Understanding of competence	Competency is linked to experience, confidence and knowledge
	The effects of Confidence 2,3,4,5,	Confidence is seen to affect competence Lack of confidence can be a consequence of lack of support Delay in accessing prescriptions affects confidence
	Defining scope of practice 1,2,3,4,5,6,7,8,9	Scope of practice is hugely different between individuals
	Prescribing by proxy 3,4,6,7.8	Prescribing recognised as reducing the need for prescribing by proxy
	Referral pathways 7,9	Prescribers use a variety of referral options to seek reassurance or information
External influence in prescribing	Organisational impact 2,4,5,7,9,	The perceived influence on practice from organisation governance Governance variation between organisations
	Pressure to prescribe 2,3,7,8	Pressure from peers and patients to prescribe Patients request repeat prescriptions Lack of understanding of scope of practice by some colleagues
	Formulary self-restricted or organisationally imposed 1,2,3,4,5,6,7,8,9	The variability in formulary development Scope of formulary clearly defined to specialist roles Formulary vast in general roles
	Guidelines and protocols 1,2,4,5,7,8,9	The perception that guidelines and protocols are both supportive and restrictive
	Factors influencing the transfer of theory to practice2,7,9	Decisions are based on safety of the patients
	The value of support 2,4,5,9	Support for prescribers is variable DMP support is vital Working in a team of prescribers is beneficial
*1,2,3,4,5,6,7,8,9, Refers to the participants in order of interview		

Appendix 22 Examples identifying interpretation of transcript

Segments of transcripts	Interpretation	Category/Theme
No, it was something I wanted to do, it wasn't part of my role at the time, but I had just changed jobs and I had gone out into the community to do immediate response to try and keep people in their own home and an awful lot of that fell outside of GPs' normal working hours and it became fairly evident while I was doing it that sometimes we could have done a more timely intervention with people, if I could have prescribed, rather than waiting for the on-call person to actually come and set up everything and then prescribe whatever we needed.	**Recognition role could benefit patients**	Prescribing in context
? Right, I trained to be a prescriber in 2005/6 I think, and in that time I had already got a prescribing qualification and it is strange because I didn't consider it a prescribing qualification - I did the V100 District Nursing and I think to myself I wasn't a prescriber until I did the V300 – it is odd, but that is the way I considered it and the V300 qualification:	**Desire to extend prescribing remit**	
So for example, my team really do not prescribe IV Antibiotics, we tend to leave that to the hospital with the doctors, even though we really want to because it can speed things up a little bit more, so whether you can have a specific little module, couple of study days, on prescribing within your specialty or prescribing in an area that you want to know a bit more about. You know I think that would be quite beneficial to a lot of teams,	**Requirement for CPD**	
Yeah OK so I wanted to be a prescriber because I had come into the nurse specialist role and prior to doing the prescribing course I was making suggestions for medications to GPs, for them to prescribe the medication, which I didn't feel myself was the best practice, because the GPs then weren't assessing the patient properly	**Recognition that prescribing by proxy was unsafe**	

Segments of transcripts	Interpretation	Category/Theme
'That means to me that actually if I choose to prescribe something that I am legally accountable for that and so I really need to have really good decision making behind that to ensure that if I was to get into sticky waters, if you like, that I've got the background,	**Competency is linked to legal regulations**	Perception of competence
'I think it is you prescribe what you're confident to do. ……..I can't think you know everything; you know you know the total in and out to the -n-th degree but as long as you're confident with what you're prescribing is right…,' (Interviewee 9)	**Competency is linked to confidence**	
Oh gosh, I think competence is really difficult. I, for me personally, I have always been very – not hard on myself – but I have always, I will always say what my limitations are. I have got no problem with holding up my hand and saying, 'sorry I don't know enough about that', or 'I am not happy to do that'. (Interviewee 5)	**Competency is difficult to explain**	
Oh right – OK. Competence is vaporous because I couldn't… I don't know what I don't know, so I could consider myself competent in something, but I don't know a lot about that thing – well if I don't know? Do you understand what I am saying? What I am trying to say….' (Interviewee 3)	**Competency is not fixed and is personally defined**	

Appendix 23 Participant comment frequency

Name	Alan	Beth	Carl	Diane	Erica	Fern	Gail	Harry	Ian
Interview narrative									
Page No.	122	121	121	122	123	125	128	126	123
	134	125	124	129	126	129	130	129	128
	135	132	128	130	127	131	132	134	129
	137	137	131	139	139	137	143	138	130
	143	140	133	142	141	149	145	141	132
	148	148	136	146	143	145	149	142	135
	149	151	137	147	145	150	156	144	136
		158	138	154	147	152	158	149	138
		159	140	159	148	153	159		142
			142		151	154			153
			146		154	155			155
			150		159	157			157
			152			159			
			157						
Vignette responses									
Page No.	163	163	165	165	162	169	162	163	164
	164	168	167	168	164	171	166	164	166
	165	170	169	172	165	173	169	171	168
	171	176	170	174	167	174	170	172	169
	176		171	175	169		173		175
	177			177	170		176		178
					176		177		
					178				

Appendix 24 Medical model of history taking (Fishman & Fishman 2010)

- PC- Presenting complaint,
- HPC- History of presenting complaint- including additional information and symptoms
- PMH-past medical history
- DHx-Drug History- current medication, concordance, allergies
- FHx – Family history
- SHx- Social history -smoking alcohol, drug abuse, sexual health, exercise, overseas travel, animals, home circumstances, home assistance, finances, mobility, contact with illness.
- SE- systemic enquiry- general health, cardiology, respiratory, gastroenterology, neurology, genitourinary, skin, endocrinology, gynaecology.

Appendix 25 History taking examples

Participant number: 2 Beth				
Consultation	Examples of appropriate lines of questioning	Explored	Partially explored	Not explored
Presenting complaint		x		
History of presenting complaint	Onset duration, recurrence, treatment, exacerbating factors		x	
Symptoms related to complaint	*Cough*- type, frequency duration *Breathlessness*, MRC score, related to activity *Sputum* colour, amount, consistency *Orthopnoea*- number of pillows		x x	
Current health status	General health/ minor ailments /height weight loss or gain			x
Past medical history	Including long term conditions / operations/ childhood illnesses		x	
Drug history	Prescribed OTC Herbal/alternative Illicit drugs Borrowed Concordance Inhaler technique		x	
Allergy status	Food/medication/ topical		x	
Social history	Immunisations status Employment/finance Home circumstances Exercise/ diet Drug use /Smoking/alcohol Pets			x
Family history	PMH related to family			x
Examination	Observations BP, temperature pulse respirations, observe general colour and conjunctiva, perfusion, - signs cyanosis respiratory effort, talking in sentences, JVP, clubbing hands, nicotine staining, percussion auscultation		x	
Investigations	Bloods/ CXR/ECG/ Spirometry/peak flow/ pulse oximetry		x	
Patient expectations	Treatment/ admission/ referral			x
Differential diagnosis	Chest infection/ pneumonia Exacerbation of COPD Heart failure CA lung PE Anaemia Sepsis			x

Participant number: 6 Fern				
Consultation	Examples of appropriate lines of questioning	Explored	Partially explored	Not explored
Presenting complaint		x		
History of presenting complaint	Onset duration, recurrence, treatment, exacerbating factors	x		
Symptoms related to complaint	*Cough*- type, frequency duration *Breathlessness*, MRC score, related to activity, *Sputum* colour, amount, consistency *Orthopnoea*- number of pillows	x		
Current health status	General health/ minor ailments /height weight loss or gain		x	
Past medical history	Including long term conditions / operations/ childhood illnesses		x	
Drug history	Prescribed/OTC Herbal/alternative Illicit drugs Borrowed Concordance Inhaler technique		x	
Allergy status	Food/medication/ topical		x	
Social history	Immunisations status Employment/finance Home circumstances PMH related to family Exercise, Diet Drug use/smoking/ alcohol Pets		x	
Patient expectations	Treatment/ admission/ referral	x		
Differential diagnosis	Chest infection/ pneumonia Exacerbation of COPD Heart failure CA lung PE Anaemia Sepsis	x		
Examination	Observations BP, temperature, pulse, respirations, observe general colour and conjunctiva, perfusion, signs cyanosis, respiratory effort, talking in sentences, JVP, clubbing hands, nicotine staining, percussion and auscultation		x	
Investigations	Bloods/ CXR/ECG/ spirometry/ peak flow/ pulse oximetry		x	
Referral	GP/ community matron/ paramedic/consultant	x		
Action	Treatment/ referral/ watch and await	x		

Appendix 26 Scoring system for responses

- A score of 3 indicated that the nurse had correctly identified all the issues and proposed a correct solution to the problem
- A score of 2 indicated that the nurse had identified more than half the issues involved and managed to propose an acceptable solution to the problem.
- A score of 1 indicated that the nurse had identified less than half of the issues but failed to propose an acceptable solution to the patient's problem
- A score of 0 was awarded where the nurse had not been able to identify the issues involved and had failed to propose an acceptable solution to the problem.

Appendix 27 Vignette responses following medical model of assessment (Fisherman & Fisherman 2012)

No	PC	HPC	PMH	SHx	Dx	Fx	SE	DD	Tests	Ref	Score
1	x	x	x		x					x	1
2	x	x	x		x				x	x	2
3	x	x	x	x	x		x			x	2
4	x	x	x	x	x			x			2
5	x	x	x	x	x	x			x	x	2
6	x	x	x	x	x	x	x	x	x	x	3
7	x								x	x	0
8										x	0
9	x	x	x	x	x	x	x	x	x	x	3

PC - presenting complaint, HPC - history of presenting complaint, PMH - past medical history, SHx - social history, FH – family history, Dx – drug history, systemic enquiry, DD differential diagnosis, Tests - investigations, Ref - referral

Vignette scoring based on the one used by Sodha et al (2002:311)

Appendix 28 Assessment of diagnostic competencies observed

No.	Item	yes (%)	No (%)	Total (%)
3)	Identifies chief complaint	77 (n=7)	22 (n=2)	100 (n=9)
4)	Explored current symptoms	77 (n=7)	22 (n=2)	100 (n=9)
5)	Defines history of presenting complaint	45 (n=4)	55 (n=5)	100 (n=9)
6)	Explores past medical history	77 (n=7)	22 (n=2)	100 (n=9)
7)	Explores current medication prescribed	77 (n=7)	22 (n=2)	100 (n=9)
8)	Explores current medication OTC/herbal	45 (n=4)	55 (n=5)	100 (n=9)
9)	Checks allergy status and nature	77 (n=7)	22 (n=2)	100 (n=9)
10)	Social history including alcohol and smoking	45 (n=4)	55 (n=5)	100 (n=9)
11)	Family history	12 (n=1)	88 (n=8)	100 (n=9)
12)	Examination	45 (n=4)	55 (n=5)	100 (n=9)
13)	Request/ advices tests or investigation	0 (n=0)	100 (n=9)	100 (n=9)
14)	Offers diagnosis	45 (n=4)	55 (n=5)	100 (n=9)

55% (n=5) participants reported this as outside of their competence
22% (n=2) participants offered no suggestion to appropriate history or assessment

Appendix 29 Clinical Reasoning Process worked example

Clinical reasoning process interviewee number …2…Beth…		
Process	Description	Example quotes
Consider the patient	**Describe** the facts, contexts objects of people	*"I think she's got COPD she may have as it says she has an exacerbation of that so my key thing would be to question a bit more about breathing try to get to the bottom of what these inhalers are"*
Collect cues/ information	**Review** current information e.g. patient history, charts results, of investigations, previous assessments	*"…blue and Brown you might be thinking straight away salbutamol in a steroid inhaler more salient information like early warning scores blood results and symptoms they are telling you before you make a decision"*
	Gather new information e.g. undertake assessment	*"Right a full examination takes place it would be the usual questions like colour of sputum have you had a cough how long have you had the fever and then from all that information would basically directly into whether I would describe some antibiotics is she wheezy or anything in the chest that it could obviously give some nebulization"*
	Recall knowledge e.g. pathophysiology physiology pharmacology therapeutics ethics law etc	*"Possibly put on steroids because if it's an exacerbating of COPD that is probably what she's going to need to bring down inflammation of the lungs"* *"If she is particularly purulent with her sputum it may be that she needs an anti-mucolytic or something along those lines in a 72-year-old specially the fact that she's got diabetes there was possibly going to be an element of CKD"*
Process information	**Interpret**: data to come to understanding of signs and symptoms compare normal to abnormal	*"she's got a fever 37.9 she doesn't look like she needs oxygen at the present time that's fine and arrests are OK If she was particularly queasy in her chest then you might give your guidance would say give them some IV hydrocortisone initially and then put them on steroids in about 24 hours when the wheeze has diminished with the tablet form of steroids we can have dispersible or tablet form"*
	Discriminate: distinguish relevant information recognise inconsistency narrow down information recognise gaps in cues	*"All those blood markers will influence what you do because if you haven't got a full picture and you start prescribing nephrotoxic drugs or you give an antibiotic at full dose when actually the person needs a renal dose then yes you are going to come unstuck"*
	Relate: discover new relationships or patterns cluster cues together	*"The older person you know they have got a long-term chronic problem and they are more likely to become unwell far quicker than someone who is younger. You are treating older person slightly differently because the other thing you've got to think about is concomitant disease as well like diabetes The other thing you would need to consider with this particular lady is the fact that she's diabetic so putting her on steroids is going to elevate her blood sugars it's a bit of a balancing game"*
	Infer: make deduction or form opinions that	*"I would be thinking about something like chest X Ray to exclude an underlying infection going on in the chest*

	are logical by interpreting subjective and objective data	*I wouldn't treat it as an infected COPD until I got more evidence"*
	Match: current situation to past situations or current patient to past patients	*"In situations like this we would even though there is a fever at the time we might just hold off and wait for a few hours check the temperature again listen further crepitations in the chest or anything like that We do tend to prefer enteric coated medications for a fair few older. People because they have usually got a bit of GI tract disturbance"*
	Predict: an outcome	Not undertaken
Identify problem/issue	Synthesise facts and inferences to make a definitive diagnosis	*"With older people particularly with those that might have problems with dexterity is the reason they exacerbate in their COPD is because actually their inhaler technique is really bad. An older person with a fever could be up for a number of reasons not just because of bacteria there may be some localised inflammation somewhere that's making them feel a bit warm"*
Establish goals	Describe what you want to happen a desired outcome time frame	*"You want to settle the exacerbation of COPD and make the breathing better for her so you would give the steroids but then you have just got to be aware that she may need an altered insulin requirement during that time"*
Take action	Select a course of action between alternative	*"Paracetamol would be another to bring her fever down a bit and see if it helps You could involve diabetic specialist nurses"*
Evaluate	Evaluate the effectiveness of outcomes and actions	No completed
Reflect on process and new learning	Contemplate what you have learnt from this process and what you could have done differently	Not completed

Adapted from Hoffman (2007) Alfaro-LeFevre (2009) Andersen (1991)