An Examination of the Nurse/Midwife Prescribing Programme in Ireland: Confidence, Accuracy, Seeking Advice and working within the Scope of Practice

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Glossary of Terms

Community Based Care	Clinical site which are based in the community and may consist of primary care centres, day hospitals, outpatient clinics, the patient's own home, general practitioner premises, schools, crisis centres.
Hospital Based Care	Clinical sites which consist of inpatient care and include acute general hospitals, rehabilitation units and older person care.
Patient	For the purpose of this research project the word patient will be used to describe persons in receipt of a health care service with the exception of persons with mental health issues who will be known as a service user and a person with an intellectual disability who will be known as a resident.
Medicine	A licensed medicinal product which has a therapeutic effect on the person.
Midwife	A midwife is a legally qualified and registered person who cares for women and their babies in pregnancy. Their registration may be checked on the Nursing and Midwifery Board of Ireland's web site.
Nurse	A nurse is a legally qualified and registered person who provides care to patients. Their registration may be checked on the Nursing and Midwifery Board of Ireland's web site.
Resident	A person with an intellectual disability under the care of the intellectual disability service.
Service User	A person in receipt of either hospital based or community-based care that is experiencing a mental health difficulty.

Abbreviations

ADON	Assistant Director of Nursing
ANP	Advanced Nurse Practitioner
BMA	British Medical Association
BNF	British National Formulary
CNM1	Clinical Nurse Manager 1
CNM2	Clinical Nurse Manager 2
CNS	Clinical Nurse Specialist
CMM2	Clinical Midwife Manager 2
CPA	Collaborative Practice Agreement
CPD	Continued Professional Development
DTC	Drugs and Therapeutics Committee
GP	General Practitioner
HEI	Higher Educational Institution
HSE	Health Service Executive
IMB	Irish Medicine Board
MCQs	Multiple Choice Questionnaires
MRSA	Methicillin-Resistant Staphylococcus Aureus
NFQ	National Framework Qualifications
NMBI	Nursing and Midwifery Board of Ireland
NMIC	National Medicines Information Centre
NMPU	Nursing and Midwifery Planning and Development Unit
ONMDS	Office of Nursing and Midwifery Services Director
OSCEs	Objective Structured Clinical Examinations
OSLERs	Objective Structures Long Examination Record
PIN	Personal Identification Number
RNP	Registered Nurse Prescriber
RMP	Registered Midwife Prescriber
SN	Staff Nurse
SM	Staff Midwife

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Abstract

The purpose of this study is to explore the impact of the nurse/midwife prescribing programme on nurse/midwife prescribers and measuring the confidence, accuracy, advice seeking behaviour and scope of practice of the participants. A concurrent mixed method approach was used. Data were gathered from 28 qualified nurses and midwives in Ireland, 14 of whom were registered nurse/midwife prescribers and 14 of whom were undertaking the prescribing programme, using semi- structured interviews, and testing the participants with validated clinical scenarios. Relevant literature was also reviewed which revealed tensions between views of medicine and nursing, issues of power and knowledge, and differences between positivist and post-positivist views of research methodology.

The qualitative analysis of the data using MAX QDA to manage the data resulted in the identification of themes including, aspects of the programme which were more useful to the nurse/midwife prescribers; the effect the nurse/midwife prescribing programme had on their clinical practice and their thinking; how has the programme influenced or changed their view of prescribing practices; how they used the nurse/midwife prescribing decision making framework developed by An Bord Altranais; how did the nurse/midwife prescribing programme prepare them for their role as a nurse/midwife prescriber in Ireland and the changes that are required to the nurse/midwife prescribing programme in Ireland. The quantitative element of the study found high levels of confidence and accuracy among nurse/midwife prescribers, a willingness to seek advice from medical and nursing colleagues and it emerged that participants had good awareness of the limits of their scope of practice.

The study found that nurse/midwife prescribing was perceived by the participants to have changed their practice in terms of caring for the whole patient and their awareness of potential dangers in prescribing such as polypharmacy. Also, the study found that the prescribing programme was effective in preparing the nurse/midwife prescribers, and that being a nurse/midwife prescriber produced efficiencies in patient care as well as quality enhancement in that care. The study revealed frustrations with the governance system particularly the monitoring system that seemed to incentivize prescriptions. Finally, the study highlighted the pedagogical implications of this study for nurse/midwife prescribing education and how real-world learning through simulation, cooperative learning, and interdisciplinary education, could enhance learning, increase safety, and ultimately lead to better patient outcomes.

Chapter One: Background to the Study

1.0 Introduction

Nurse and midwife prescribing commenced in Ireland in 2007, based on the recommendations in the Review of Nurses and Midwives in the Prescribing and Administration of Medicinal Products (An Bord Altranais and the National Council 2005). Nurse/midwife prescribing was legalized in many countries around the world, including the United States of America in the late 1960's. In Ireland, the extension of the role of nurses and midwives to include prescribing of medicines and medicinal products is a comparatively late addition (Kroezen *et al.* 2014a; 2014b; 2014c; 2012; Creedon *et al.* 2009). This study examines nurse/midwife prescribing through an interrogation of the educational programme by examining confidence, accuracy, seeking advice and working within the scope of practice of a cohort of nurse/midwife prescribers. It also seeks to explore the importance of nurse/midwife prescribing within the context of the health service in Ireland today. It will explore the tensions within nursing/midwifery concerning the role, status, and recognition of its practitioners, which has impacts on the care of patients. In addition, this highlights important issues for nurse education to take cognizance of these different types of knowledge and competencies now utilised in nurse education, and the question of how education responds to this.

1.1 Developments in Nursing and Midwifery in Ireland

Nursing and Midwifery in Ireland has undergone substantial change since the foundation of the state in 1922. Prior to 1922, the organization and delivery of care by nurses and midwives mirrored the model in the UK, as Ireland was part of the British Empire. Nurse/ Midwife prescribing is one of a long series of

initiatives, which have shaped the practice, and professionalism of nursing and midwifery in Ireland today. One document, which has changed nursing and midwifery more than others, is the Commission on Nursing-Blueprint for the future (Department of Health 1998). This document set out how nursing would evolve in terms of, nurse education entering university for undergraduates and qualified practitioners and developing a clear clinical pathway for the development of Advanced Nurse Practitioners (ANP) and Clinical Nurse Specialists (CNS). It also highlighted the need for nurses to have a framework in which to practice safely known as the scope of practice. Finally, the Commission tasked An Bord Altranais to explore the possibilities of extending prescriptive authority to nurses and midwives in Ireland (Department of Health 1998). Since the publication of that document, the recommendations have been implemented and nurse/midwife prescribing was introduced in 2007. The development of the Advanced Nurse Practitioners (ANP) and Clinical Nurse Specialists (CNS) roles coupled with the devising of the scope of practice framework along with the An Bord Altranais and National Council recommendations for the introduction of nurse midwife prescribing and the resultant requisite legal changes established nurse/midwife prescribing. The central concept of Nursing and Midwifery is caring, caring for the patient and nurse and midwives do this in a holistic manner looking at the entire person. This presents a tension for nurse/midwife prescribing as the prescribers are not becoming medical practitioners but are nurses and midwives who possess the legal authority to prescribe but do so in the holistic and caring mode, central to their core beliefs as a caring professional. Medicine as May and Fleming (1997) would argue is very different to nursing, rooted in the biopsychosocial model with the disease or illness at the centre of this focus. The traditional view of the nursing role from the perspective of medical practitioners has been their assistant. This extract from the Irish Nurses Gazette in 1930, describes the idea of a good nurse; "A doctor would consider a good nurse one who carried out his orders with efficiency, skill and loyalty, and a patient would consider a good nurse one who carried the doctor's orders out in a true manner by sympathy, kindness, patience, and cheerfulness'

(Irish Nursing Gazette 1930, p. 2 cited in Fealy 2004). McCarthy (1990) observed that this view of nurses as inferior to doctors persisted well into the 20th century. More discussion pertaining to nurses expanding their scope to include prescribing is in chapter two. Prescribing is not an activity where one system is targeted, it is an activity, which needs to encompass the assessment of the whole person including their ability to understand instructions, their psychosocial factors and their beliefs about medication, hence the ideal positioning of the nurse/midwife to undertake this activity. The next section examines what is known about nurse/midwife prescribing in Ireland.

1.2 Nurse/Midwife Prescribing in Ireland

There have been a number of robust studies and literature reviews, which have examined nurse prescribing from a number of stakeholder perspectives including patients, nurse/midwife prescribers and the wider nurse/midwife community in Ireland. In a survey of existing literature, Creedon and Weathers (2011) found indications that certain patient groups benefit from nurse prescribing. They argue this is achieved through improved symptom management and care that is more efficient. Drennan *et al*. (2009) discovered through an extensive study evaluating prescribing, incorporating the views of all the various stakeholders, revealed that prescribing was perceived as a beneficial practice. The benefits included increased patient satisfaction, comprehensive medication education and reduced waiting times (Naughton *et al.* 2013). Because of nurse/midwife prescribing, patients' intent to comply with medication increased, and importantly the number of health care professionals the patients had to interact with during an episode of care was reduced and this reduces the potential for conflicting advice.

They examined the prescribing from a variety of perspectives including documentary analysis, interviews, and focus groups and survey (Drennan *et al.* 2009). The study examined patient satisfaction with nurse prescribers and

revealed that patients were satisfied having their medication prescribed for them by nurses/midwives. This paper was published utilizing data from the original 2009 study and concluded that nurses undertaking prescribing afforded the patient more opportunities to have health issues addressed, which in turn positively impacts on health outcomes and improves medication adherence rates.

The introduction of nurse/midwife prescribing was not always positively received. Wells *et al*. (2009) in a survey of 103 mental health nurses, found some ambivalence to prescribing because of its impact on professional relationships. However, it is also noteworthy that Wells *et al*. (2008) conducted this survey in 2007-8 when nurse prescribing was in its initial phase of introduction with very few mental health nurses having completed the nurse/midwife programme. Lockwood and Fealy (2008) examined the attitudes of Clinical Nurse Specialists (CNS) to nurse prescribing and the barriers to nurse prescribing using survey method, while their findings were positive in terms of the attitudes of the CNS, the CNS fears of litigation and the need for support from their managers were identified as barriers to Clinical Nurse Specialists becoming prescribers. O Connell *et al.* (2009) and Creedon *et al.* (2009) in a two-part extensive literature review, examined how nurse prescribing developed internationally.

These studies of Irish nurse/midwife prescribing have examined the practice of prescribing and suggested that there are benefits in improved symptom management and patient care, particularly for patient with chronic health issues. This current study examines different aspects of nurse/midwife prescribing, and is focused on confidence, accuracy seeking advice and working within their scope of practice and their perceptions of their training.

1.3 Justification for the study

Prescribing medication and medicinal products is a precise activity, which requires the prescriber to be confident and accurate, to be able to work within their scope of practice and be able to seek assistance if needed (Offredy *et al.* 2008). The consequences of the inability of the prescriber to prescribe precisely may potentially have catastrophic effects on the patient in terms of their health outcomes (Cahir *et al.* 2014; Likic and Maxwell 2009). Therefore, an examination of confidence, accuracy, seeking advice and working within the scope of practice of nurse/midwife prescribers was seen as a worthwhile exercise.

In addition, due to the requirement to reduce the working hours of junior medical doctors as direct consequence of the implementation of the European Working Time Directive, a medical staffing crisis is developing in the health service in Ireland. One of the suggested solutions for this staffing crisis was to expand the role of the nurse/midwife to include prescribing. The required consequential expansion of the role of the nurse/midwife was implemented, to ensure the continued delivery of a high standard of care to patients throughout the country as recommended in the Hanly Report (Department of Health and Children 2003). The Review of Nurses and Midwives in the Prescribing and Administration of Medicinal Products, examined this expansion of the role of the nurse/midwife prescriber in terms of, the effect prescribing has had on their practice, thinking and view of medication management practices (An Bord Altranais and the National Council 2005) . In addition, how these changes are significant in terms of role, status and relationships between nursing and medicine, and the consequent implications for the recognition and teaching of such knowledge and competences in nurse/midwife education during the period 2013 to 2014.

1.4 Research Problem and Aim

The research conducted by Drennan *et al.* (2009) was extensive and sought the views of the multiplicity of stakeholders involved in nurse/midwife prescribing, from examining research from the UK, confidence and accuracy were viewed to

be important variables in prescribing (Ramaswamy *et al.* 2011; Offredy *et al.* 2008; Sodha *et al.* 2002a; Sodha *et al.* 2002b).

The aim of this research study is to assess the level of confidence, accuracy of nurse/midwife prescribers, from whom the nurse/midwife seeks advice and working within their scope of practice from an objective perspective using paper-based clinical scenarios and thereby attempt to consider the extent to which the prescribing programme effectively prepares the nurse/midwife prescriber to prescribe.

The outcome of this study intends to provide insights and inform national policy in relation to the education standards for nurse/midwife prescribers. In addition, it aims to inform the work of the programme providers, the Nursing and Midwifery Board of Ireland (NMBI) who regulate this programme and the Health Service Executive (HSE) and private clinical partners who support and implement this programme. Finally, it aims to explore the impact on practice ensuring the continued safe practice of nurse/midwife prescribing for patients throughout Ireland, as well as developing insights about the nature of learning and knowledge in nurse/midwifery education.

1.5 The Research Question

The primary research question for this study is how confident and accurate are nurse/midwife prescribers in Ireland? Who do they seek assistance from in making prescribing decisions and do they recognize when they are working within their scope of practice?

The secondary research question examines the nurse/midwife prescribers' view of their training and their perception of its impact on their clinical practices. Some of these areas explored during the study were:

1. The motivation for undertaking the prescribing programme
2. The aspects of the programme which were more useful to the nurse/midwife prescribers
3. The effect the nurse/midwife prescribing programme had on their clinical practice and their thinking
4. How the programme has influenced or changed their view of prescribing practices?
5. How the nurse/midwife prescribing decision-making framework developed by An Bord Altranais is utilized?
6. How the nurse/midwife prescribing programme prepares nurses/midwives for their role as a nurse/midwife prescriber in Ireland?
7. What changes, if any, are required to the nurse/midwife prescribing programme in Ireland?

1.6 Structure of the Thesis

1.6.1 Chapter Two

Chapter two is an overview of relevant literature. An overview of the health services in Ireland will be presented together with an exploration of the role of nurses and midwives in this system. The national and international condition of nurse/midwife prescribing and the context within which nurse/midwife prescribing was introduced into Ireland in 2007 will be reviewed. An in-depth exploration into how nurse/midwife prescribing is implemented including the prescribing model, the collaborative practice agreement and the barriers to nurse prescribing in Ireland is explored. Finally, an examination of confidence, accuracy, prescribing within the scope of practice and seeking assistance within the context of nurse/midwife prescribing will be outlined.

1.6.2 Chapter Three

Chapter three is a reflective piece on how undertaking the educational doctorate influences the researcher, encouraging awareness of the tacit and experiential knowledge, how her professional background was key to her decision to undertake this programme and an outline on the epistemological stance of the study.

1.6.3 Chapter Four

Chapter four describes the methodology and methods used to undertake the study. The chapter provides justification for the choice of methodology, the development of the research instruments and the rationale for this instrument, the pilot study and the ethical considerations. The data was collected through the administration of an instrument measuring confidence, accuracy, seeking assistance when appropriate and prescribing within the scope of practice using validated paper based clinical scenarios in addition to conducting semi-structured interviews.

1.6.4 Chapter Five

Chapter five presents the findings from the measurement of confidence, accuracy, seeking advice and working within the scope of practice, using the validated paper-based clinical scenarios, and analysed using SPSS version 20. The findings, which will be presented in this chapter, include the sample characteristics; levels of confidence of the participants, how accurate were the participants on the clinical scenarios and from whom they would seek advice regarding prescribing decisions. Finally, this chapter seeks explore whether the

participants would proceed any differently with real patients working within their scope of practice, than they had on the paper clinical scenarios?

1.6.5 Chapter Six

Chapter six presents the findings from the qualitative data and are presented in seven themes all pertaining to nurse/midwife prescribing and were analysed using content analysis undergoing the normal convention of coding, concepts, categories, connections, and conclusions. These themes include aspects of the programme which were more useful to the nurse/midwife prescribers; the effect the nurse/midwife prescribing programme had on their clinical practice and their thinking; how has the programme influenced or changed their view of prescribing practices; how they used the nurse/midwife prescribing decision making framework developed by An Bord Altranais; how did nurse/midwife prescribing programme prepare them for their role as a nurse/midwife prescriber in Ireland and the changes that were required to the nurse/midwife prescribing programme in Ireland.

1.6.5 Chapter Seven

Chapter seven presents the discussion of the findings and implications from this research study. The findings include confirmation of the accuracy, safety and cautious behaviour of nurse/midwife prescribers. In addition, the high degree of certainty of specialist grades of nurse/midwife prescribers to the limits of their scope of practice, versus the non-specialist nurse/midwife prescribers and the preference by the participants to seek advice on medication from medical colleagues. Additional findings detail the need for greater collaboration between the candidate prescribers and the HSE to ensure a smooth transition to commencing prescribing on completion of the programme. The pedagogical implications of the study include, given the high-risk nature of prescribing, learning using simulation through real-world examples, the need for cooperative

learning as nursing and midwifery are not solitary activities, using interdisciplinary learning to increase the awareness of the different prescribing health professional groups' scope of practice and encourage interdisciplinary advice seeking behaviour. The chapter concludes with the identification of several areas for further study, including developing and evaluating national prescribing competencies for all prescribing health care professionals in Ireland.

1.7 Summary

In this chapter, a brief background to the study was presented which will be further elaborated on in the literature review. The justification for the study and the research questions were provided. Finally, an overview of the study was outlined. In the following chapter, Chapter two, a literature review will be presented.

Chapter Two: Context - the Available Evidence

2.0 Introduction

Traditionally, the prescribing of medicines and medicinal products to humans has been the preserve of registered medical and dental practitioners and it is only in recent times that legal provision to prescribe was extended to nurses and midwives in Ireland. This chapter examines current studies which have been conducted in Ireland and internationally concerning nurse/midwife prescribing. It will examine nurse/midwife prescribing in terms of the hierarchical system within the health service, the introduction and evolution of nurse and midwife prescribing set against the backdrop of the implementation of the working time directive for doctors and a recruitment embargo due to the recession. It will explore the pedagogical context of prescribing, consider the impact of competency-based education and problem-based learning, on learning which occurs in nurse/midwife prescribing. In addition, the prescribing model used, the collaborative practice agreement, the barriers and motivations to prescribe, confidence and accuracy of nurse/midwife prescribers, whom they seek advice pertaining to prescribing from, the scope of practice of the nurse/midwife and the prescribing minimum data set is explored.

2.1 The Hierarchy within the Health System in Ireland

The health system in Ireland today in which nurse and midwifery prescribing activity occurs, is based in a system built on a legacy of religious patronage in providing health care in terms of the provision of buildings and staff to administer and operate hospitals (Brick *et al.* 2012; Harding-Clarke 2006; Barrington 1987). With the foundation of the Irish state in 1922, the establishment of health provision by the government of the fledgling state, began to fund and organize services. However, it was not until the 1970's that the government sought to

organize the Irish health service into a manageable service operationalized by the local government department or county councils with the Health Act, 1970 (Health Act 1970). Primarily due to the imprecise management of the Irish health service, a hierarchical model of management which existed throughout the service, was permitted to be maintained (O'Shea 2008). The religious organizations which managed the health care services expressed deference to the medical profession which set the medical doctors above any of the other health care professionals or employees including nurses and midwives.

Since the establishment of the state, there was inconsistent funding of the health service, with funding streams drawn from charitable donations, grants from the government and a hugely popular lottery 'the Irish Sweeps Stake' which all ultimately never appropriately financed the service (Wren et al. 2019; Barrington 1987). In the 1980's recession, health budgets were cut, and hospitals closed, reducing overall bed numbers nationally, which then swung back to human and capital investment in the health services in the 1990's. Therefore, development and planning of the health service has been piecemeal at best (Wiley 2005). These difficulties in the public system, combined with the growth in personal income since the 1990's has motivated more than half the population of Ireland to maintain private health insurance which permits them access to health care more rapidly than people reliant on public health care (Wren *et al.* 2019; Schneider and Devitt 2018).

The Catholic church in Ireland, largely held control of the health services from the foundation of the state in 1922 and indeed were given an explicit role in the Irish constitution in 1937 (Wren *et al.* 2019). This control promoted supported and encouraged a paternalistic, medical and largely male dominated view of health and its use of health as a form of social control, particularly over women with the connivance of the Irish government (Calkin and Kaminska 2020; Kissanne 2003, Government of Ireland 2021). Garvin (2005) argues that in this unique situation, the Catholic church was able to shape the health service by

vetoing any policies which it saw as morally unacceptable. The deference, to the medical profession expressed by the religious organizations managing the health care services, was crystallised in the case of the Lourdes Hospital Enquiry (Harding-Clarke 2006). This exposed a work culture where nurse and midwives could be transferred if they questioned the decisions made by doctors and this culture of deference the enquiry found was not unique to one hospital (Harding Clarke 2006). This view of health care systems being hierarchical with doctors positioned above nurses in the system is very pervasive across cultures and age groups and is not unique to Ireland. A study undertaken by Holyoake (1999) in the UK, found that children believed there was a hierarchy in the hospital and that doctors made the decisions, nurses had no decision-making power, and nurses were subordinate to the doctors (Holyoake 1999).

Given the hierarchical nature of the health service, in which nurses and midwives were invisible in the organisational decision making (Scott *et al.* 2003) and the deference with which the medical doctors were held, there have been huge difficulties in attempting structural reforms to transform and provide a health service for all. Successive Ministers for Health have implemented laws such as the Health (Eastern Regional Health Authority) Act 1999, the Health Act (2004) which was the establishment of the Health Service Executive (HSE) and which was supposed to enable this overhaul, however ultimately it resulted in little tangible improvements for patients. Most notably in the agenda for health service reform was the renegotiating of hospital consultants' contracts in the 2000s. This task took over six years to complete with those existing consultants not affected by the new change to their contracts opposing the changes. The Minster for health at this time, Minister Harney, in press releases, barely concealed her frustration with the lack of reform she could achieve (Department of Health 2007). The changes to this new Consultants' contract included increased access to consultants for public patients, changes in their working week to include the weekend to facilitate weekend discharges and thereby

increase the number of patients through the hospital system as well as permitting the use of operating theatres and specialist departments on a seven-day basis rather than the traditional five-day week arrangement. This resistance to implement change with this one professional group within the health services, was in contrasted with the speed at which legislative and policy changes occurred to introduce nurse and midwife prescribing by this same Minister, which was initiated with no opposition from the professional regulator or the Nursing and Midwifery Unions. Expansion of the scope of practice of nurse and midwives through prescribing was embraced by the nursing and midwifery profession with little negative public discourse evident. However, it could be argued that the low numbers in the uptake of the prescribing courses in contrast to the expectation by the Department that ten thousand nurse and midwife prescribers would be in practice by 2017, reveals that this acceptance of this new initiative was not borne out. However, the economic crash from 2009 onwards may well have contributed to the low uptake. In 2021 the number of registered nurse and midwife prescribers was recorded as being 1700, just over 17% of the expected number of nurse and midwife prescribers (as stated in personal communication from Anne-Marie Ryan on the 29th of March 2021).

These perceptions about the different roles and status of nurses/midwives and doctors were also evident in studies amongst patients. Scott *et al.* (2003) examined Irish nurses' and midwives' experience of empowerment, with some of the participants describing how patients did not view nurses and midwives as having any decision-making role in their care, which was held only by doctors and other health professionals. Nurses and midwives in this study stated that during their nurse and midwife training, they had been taught not to question doctors' decisions and this then had resulted in a legacy of being passive. This widespread perceived lack of power in decision making by nurses and midwives is also evident at a statutory level, where the first chief nurse was only appointed to the Department of Health in Ireland in 2013 (Department of Health 2013). In the UK a chief nurse role in the Department of health has been established since 2005 with the acknowledgement that nurses and midwives need to be involved

in decision making at the highest level about the organisation and delivery of health care (O'Shea 2008). It is within this context of stymied health service reform, coupled with legacy of deference to medicine and the hierarchical nature of the health system that nurse/midwife prescribers practice in Ireland.

2.2 Social and Political Drivers of Nurse Prescribing in Ireland

Nurse Prescribing has a longer history internationally; it was introduced in the United States of America (USA) in 1969 and in the United Kingdom (UK) in 1998 see Figure 2.1. However, it is a relatively new occurrence in Ireland, having only been introduced in 2007 (Connor and McHugh 2019; Drennan *et al.* 2009; Creedon *et al.* 2009; Wells *et al.* 2008; An Bord Altranais 2007a).

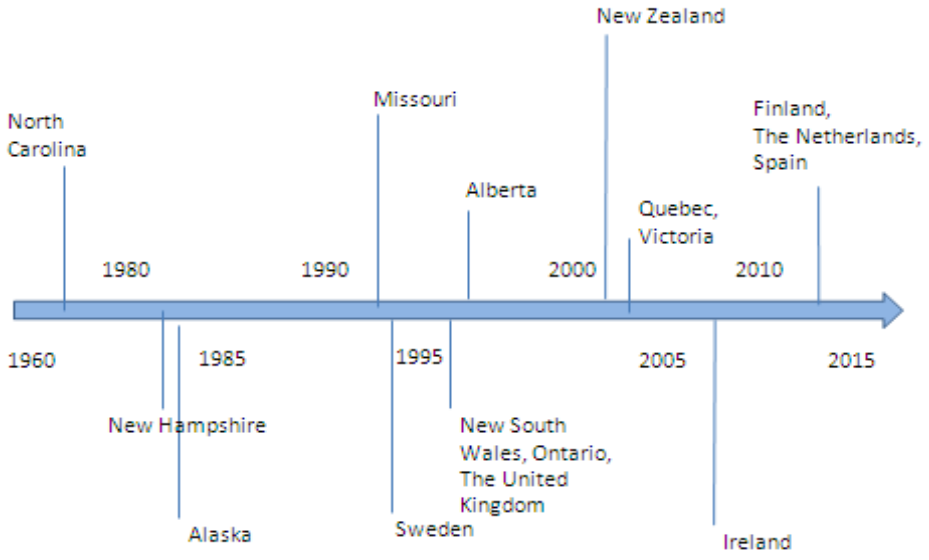

Figure 2.1 Timeline of the Introduction of Nurse/Midwife Prescribing (from Kroenzen *et al.* 2012)

In Ireland, the path to nurse prescribing was similar to the UK in terms of the identification of the need for nurses and midwives to prescribe. In the UK, nurse prescribing was introduced as a result of two key reports namely the Cumberlege Report (Department of Health and Social Security 1986) and the Crown 1 Report (Department of Health 1989). In Ireland, the two key reports that identified the need to introduce nurse and midwife prescribing were the Commission on Nursing: A Blueprint for the Future (Department of Health 1998) and the Review of the Scope of Practice for Nursing and Midwifery: Final Report (An Bord Altranais 2000a). The introduction of Nurse prescribing in Ireland has not been without objectors. In 2005 Condron, wrote a piece for Irish Health.com about the proposed introduction of Nurse prescribing in Ireland, while there were a number of positive comments about the change to prescribing, there was also some negativity expressed. Individuals who were a mix of anonymous and named people posted these comments. A number of the comments supported nurse prescribing asserting the view that it would make care more efficient, that nurses/midwives were more familiar with their patients than doctors were. However, many more of the comments viewed this change to nursing practice as being a negative development. Several comments deriding nurses'/midwives' knowledge of medication, and not having the appropriate education were expressed (Condron 2005).

However, the decisive change was the sanctioning of the necessary changes in legislation, including the Misuse of Drugs (Amendment) Regulations 2007, Medicinal Products (Prescription and Control of Supply) (Amendment) Regulations 2007, The Irish Medicines Board (Miscellaneous Provisions) Act 2006, and a change to the Nurses Rules (2007). In addition, the Minster for Health tasked the then An Bord Altranais, now the Nursing and Midwifery Board of Ireland (NMBI) and the Health Service Executive with producing all the supporting documentation, frameworks and educational requirements in a relatively short period which occurred during 2006-2007 (An Bord Altranais 2007a, 2007b, 2007c, 2007d, 2007e). Furthermore, the Minister also allocated

dedicated funding for the nurse/midwife education programmes. The number of nurses and midwives undertaking the programme initially was approximately 150 per year until 2011 when it dropped to approximately 117 per year (ONMDS 2017). The initial increase year on year bucked the trend of the number of nurses and midwives undertaking other postgraduate programmes at the same time, possibly due to the dedicated allocated funding for the prescribing programmes. One of the explanations for the significant drop in the numbers applying to undertake the programme was the delay experienced by nurses and midwives in becoming registered. Once nurses and midwives completed the programme, they had to register with An Bord Altranais however prior to applying to register they had to have their Collaborative Practice Agreement (CPA) approved by the Drug and Therapeutic Committee (DTC). Some of the delays were reported as difficulties with the DTC either not meeting regularly enough, not having a quorum, or not approving the CPA, thereby delaying registration (NMBI and ONMDS 2015). Anecdotally, several clinical sites had no applicants because colleagues who had undertaken the prescribing programme could not get registered as a nurse prescriber and therefore nurses were not prepared to undertake a programme if they then could not register as a nurse prescriber. The situation improved with the publication of a review of the prescribing processes and systems (NMBI and ONMDS 2015) in which recommendations to change the terms of reference of the DTC. This change was to advise rather than to approve CPAs in 2015, coupled with the removal of the requirement for mandatory inputting of each prescription in the online data collection system in 2016 and the resumption of promotion opportunities in 2015, generated higher application numbers to the nurse and midwife prescribing programme numbers from 2016 onwards.

However, by the summer of 2017, there was an increase again in the number undertaking the programme, as the Department of Health launched funding for 120 ANP posts a year for four years to target areas within the health service with long waiting times (Department of Health 2017). Student numbers on the

programme for 2018 rose again to 135 for 2017-18 year with increased opportunities for nurses to develop their career (ONMDS 2018).

Year	NUIG	RCSI/WIT	RCSI	TCD	UCC	UCD	UL	Totals
2007	0	0	63	0	41	0	0	104
2008	0	0	86	0	32	0	0	118
2009	0	0	122	0	42	0	0	164
2010	0	0	149	0	38	0	0	187
2011	18	0	109	0	25	18	12	182
2012	26	0	66	6	13	15	0	126
2013	15	5	64	5	10	26	7	132
2014	33	3	40	8	7	19	0	110
2015	20	0	19	5	23	24	0	91
2016	25	0	47	6	23	19	0	120
2017	25	0	51	15	13	21	0	125
2018	36	0	44	16	34	78	7	215
2019	37	0	39	15	11	53	14	169
TOTALS	**236**	**8**	**898**	**76**	**312**	**273**	**40**	**1843**

Figure 2.2 Breakdown of the number of Nurses/Midwives undertaking the prescribing programme funded by the HSE per HEI (ONMDS HSE 2020)

Unfortunately, by the spring of 2018, pressure on spending with the health service saw the number of places on the ANP programme drop from 120 to 30. As of the summer of 2019, 1843 had undertaken the programme (ONMDS 2019), and by March 2021, 1726 had registered as a nurse or midwife prescriber, a far cry from the 10,000 originally planned in 2007 (NMBI 2021). However, the failure to achieve the target went unnoticed. For a more complete list of policy documents, reports and legislation related to the introduction of nurse and midwife prescribing (see Appendix A).

Concurrent to this rapid change in the role of nurses and midwives was the European Union requirement that Ireland would have to implement the working time directive for junior doctors, which when implemented would result in a

shortfall in the numbers of doctors available to patients (Department of Health 2003).

It can be argued that at this time, Irish Nurses and Midwives sought to develop nursing and midwifery to be on a par with their contemporaries in the UK and elsewhere (Gerrish *et al.* 2003). The Advanced Nurse/Midwife Practitioner roles (ANP/AMP) and the Clinical Nurse/Midwife Specialist role (CNS/CMS) established a more expanded scope in assessing the patients, formulating a plan of care and carrying out that plan of care. For example, a patient who attended an emergency department for instance with a sprained ankle would be assessed by the ANP. The ANP would have diagnosed the sprained ankle and have formulated the treatment plan which usually included some form of analgesia; however, the ANP would have to get one of the doctors to then assess the patient again to have the analgesia prescribed. Waiting for the doctor to complete this prescription invariably takes a long time, as patients are seen by the doctor in order of need. This delay in providing the patient with the prescription highlighted the gap in care and hence the need for the ANP to prescribe. The benefits of the prescribing aspect of the CNS and ANP roles are well recognized (Begley *et al.* 2010).

The original intention was that once the appropriate guidance was in place any nurse or midwife who was eligible to undertake the nurse/midwife prescribing programme and successfully registered as an RNP/RMP could prescribe medicines and medicinal products. For an explanation of the different grades within nursing and midwifery and Ireland to illustrate the types of responsibilities and the academic level required to practice at that grade (see Appendix B).

An Bord Altranais and the National Council for the Professional Development of Nursing and Midwifery embarked upon a national review of the need for prescribing by nurses and midwives, through a number of surveys. These reviews concluded that indeed prescribing could be expanded to include nurses and midwives (An Bord Altranais and the National Council 2005), during this

review a nurse/midwife prescribing pilot programme was developed and undertaken by a small number of nurses and midwives on a pilot basis.

Arguably, one of the key decisions endorsed by the then Minister for Health was to include all qualified nurses and midwives as being eligible to undertake the prescribing programme, which was offered at National Framework Qualifications (NFQ) level 8 see Figure 2.3. In effect, this decision sanctioned far more nurse and midwives to prescribe, than if the decision to have the programme at NFQ level 9 would have allowed. It would in effect have resulted in nurses and midwives at level 8 not being able to prescribe and they would have needed to complete another level 9 programme such as a masters or graduate diploma programme, which would have delayed them undertaking the nurse/prescribing programme by 1-2 years. There appears to have been little opposition to this and once the requirements and standards for the programme were published, the Higher Education Institutes (HEIs) developed nurse/midwife prescribing programmes at level 8 and these commenced in April 2007. In addition, the health service was under extreme pressure at this time, and this may have informed the choice of a lower entry criteria. In the national evaluation of nurse/midwife prescribing in 2009 (Drennan *et al.* 2009) the decision to have the programme at level 8 was endorsed and is maintained in the latest version of the standards and requirements for nurse/midwife prescribing programmes (NMBI 2015a).

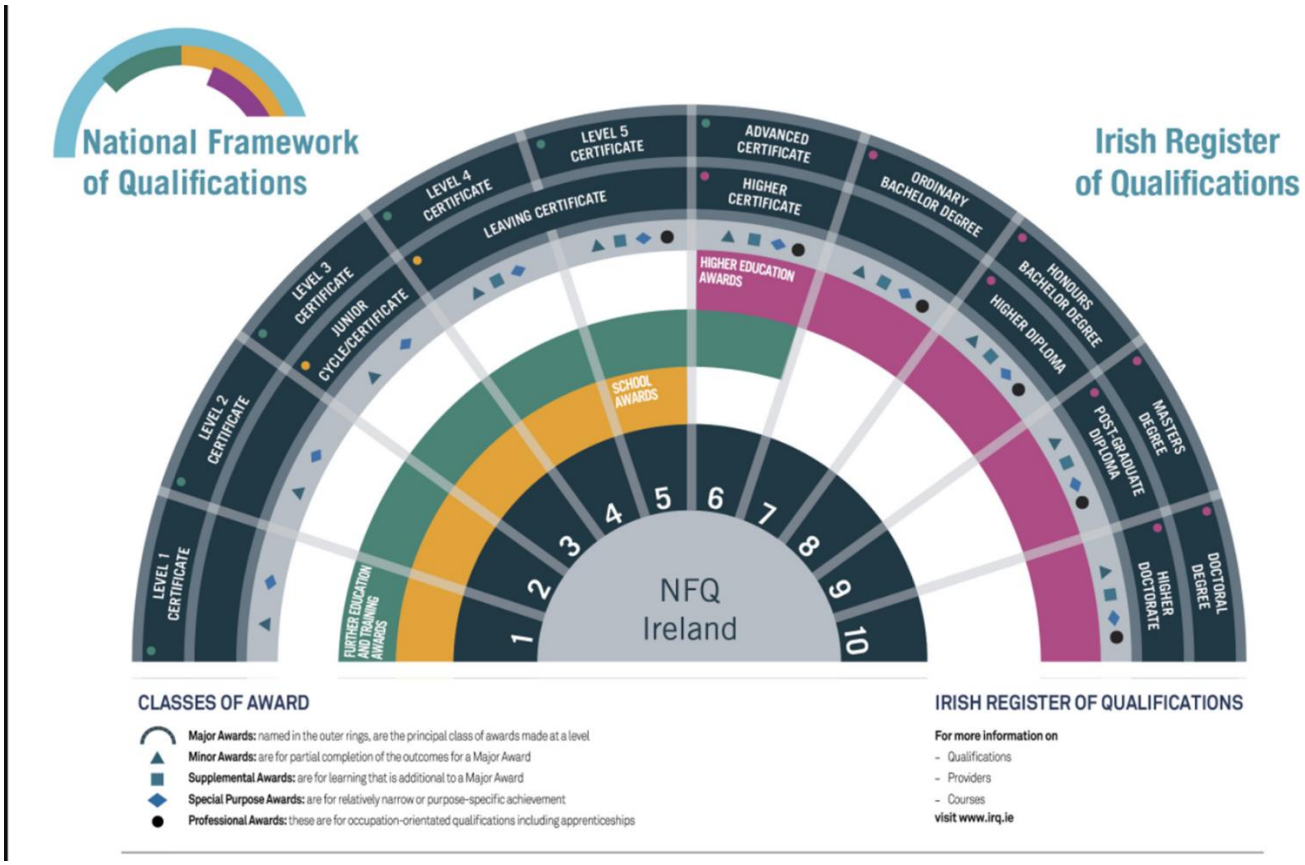

Figure 2.3 National Framework Qualifications (Quality and Qualifications Ireland 2021)

2.3 The Pedagogy of Nurse/Midwife Prescribing

According to Alexander 'Pedagogy encompasses the performance of teaching together with the theories, beliefs, policies and controversies that inform and shape it' (Alexander 2008 pp.4). It is the theory and practice of education and the process presenting or creating the learning environment in a way, which best suits the student learners. Since 2002, nurse/midwife education in Ireland has

moved completely to competency-based training and education (NMBI 2015a, An Bord Altranais, 2002, 2005, 2007a, 2008, 2010). Competence-based education has moved on from its early development by Tyler in the 1920's and more recently by Klieme and Hartig (Glaesser 2019), it can be defined as 'what an individual knows and can do in a subject area however that knowledge and skill is acquired, whether through instruction or experience or whatever' (Messick 1984 p. 217). The move from the hospital-based apprenticeship model to all graduate profession of nursing and midwifery fundamentally changed the practice of nurse/midwife education. However, this move to a graduate profession has not diluted the clinical learning component of Nursing and Midwifery programmes with all undergraduate and the majority of postgraduate programmes having a substantial number of clinical hours embedded in those programmes (NMBI 2015a; NMBI 2015b). Prescribing is a multidimensional activity that requires teaching and learning strategies that permit the learner to achieve the competencies for prescribing. When the requirements and standards for nurse/midwife prescribing were published in 2007 by the then An Bord Altranais it was entirely based on a competency framework (An Bord Altranais 2007b). Indeed, in 2012, the UK National Prescribing Centre also published a competency-based framework for all non-medical prescribers and Nazar *et al.* (2015) reports that there is an attempt to map this competency-based framework to the General Medical Council's prescribing standards for UK doctors. These competencies-based frameworks ensure that all prescribers are taught best practice in prescribing, for example in prescribing antibiotics (Courtenay and Chater 2021). It could be argued that a national competency framework exerts undue standardization on the curricula of individual programmes and HEIs. However, in matters of health care education safety is paramount (Nazar *et al.* 2015; Ironside 2015). Several studies have raised concerns about the use of competency-based frameworks that they focus on individual capacities in a way, which breaks them down into individual units, and focuses on skills instead of focusing on a holistic approach to learning which, many feel would be more

useful for a profession like nursing or midwifery where you focus on the holistic care of the person (Boyd *et al.* 2018; Klamen *et al.* 2016; Hawkins *et al.* 2015).

Nurse/midwife prescribing education operates within a conventional pedagogy utilizing competencies to shape the teaching and learning to pre-specified aspects of learning (Ironside 2015). Conventional pedagogy known also as either outcomes based, or competency based or problem-based learning and is quite often situated within 'positivistic thought or scientism; mastery of acontextual knowledge and behaviourism and male-dominated, technical, 'rational' and authoritarian practices' (Ironside 2015 p. 74). However, while this pedagogy has recognised limitations as mentioned earlier, in terms of the deconstructing of a phenomenon into parts rather than attending to the holistic care of a person, as in nursing (Diekelmann 1995; Ironside 2001). This is a tension similar to the tension between positivism and post- positivism (Clarke 2006). Nursing is not just concerned with learning about the pure sciences such as pharmacology; it is also concerned with how an experience makes a person feel and recognising the person as an individual and caring for them. Prescribing then becomes the location of this tension: on the one hand there is the scientific aspect of dosages, action, adverse reactions, and efficacy, and on the other hand there is the consequent impact on the person, their life, their coping, and the resultant caring. Therefore, the pedagogy of prescribing must take this tension into account otherwise the very essence of nursing/midwifery is lost, and it becomes a medical activity, why can't it be both, utilising a hybrid nursing and medical model of care?

Nurses and midwives were trained under the apprenticeship model up to the late 1990's and this training very much relied on experiential learning and learning from practice. The move to a graduate profession from 2002 created a tension with the learning in practice, experiential learning and the learning in college studying the pure sciences while attempting to hold on to the essence of nursing, caring. This tension is explored again in the reflective chapter. However, the very criticism of conventional pedagogy that the learning is rational, orderly, and

sequential does speak to the precise requirements that prescribing necessitates. Undoubtedly, one of the main drivers behind the decision to use conventional pedagogy is the fact that the prescribing programme is a registration programme with standards and requirements developed by the NMBI underpinned by demonstration of competencies (NMBI 2015a). The approval process by NMBI for nurse and midwife prescribing programmes, involves ensuring that the predetermined content for the programme is covered and the assessment of the theoretical and clinical components 'which will enable nurse/midwives develop knowledge and competence in prescribing' (NMBI 2015a p. 11). One of the main learning strategies which can be utilised, to perhaps counter the criticism of conventional pedagogy while satisfying the regulatory component of the prescribing programmes is simulation (Ironside 2015).

Ironside (2015) points out that multiple pedagogies may address the deficits that using only one pedagogy alone exposes. Ironside (2015) asserts the view that utilising a narrative pedagogy can enhance a conventional pedagogy, as narrative pedagogy has its roots in phenomenology and was developed through the experience of how nursing teachers really teach and how students learn how to nurse patients. Narrative pedagogy can be defined as a pedagogy in which 'teaching should focus on interpreting the experiences of people and exploring their shared meaning and understandings' (Walsh 2011 pp.216). For a prescribing programme, narrative pedagogy could offer a method for students to deal with the evolving health care environment and those students develop new ways of thinking to examine clinical situations from multiple perspectives (Ironside 2015). This would certainly assist the nurse/midwife prescriber who must consider and assess many components when engaged in a prescribing decision. However, while nursing and midwifery has moved to an all-graduate profession, the legacy of the power difference between nursing and medicine persists. Prescribing is an area of practice, which directly challenges the authority of doctors, as legislation now confers prescriptive authority on nurses/midwives in Ireland.

2.4 Real-world Learning

The obligation of accuracy required for prescribing activity permits some comparisons to be drawn between the different professionals such as the training of pilots and the training of the nurse and midwife prescribers (Bolt et al. 2014, Naidoo *et al.* 2014). Ausink and Markin (2005) and Casner *et al.* (2012) cited by Naidoo *et al*. (2014), stress the importance of the transfer of simulated or theoretical learning to the real-life experience, to avoid poor or flawed judgement, resulting in mistakes being made, and that in effect a theory-practice gap can contribute to errors. In order to prepare pilots for the real word of flying, the learning takes place in simulators, which attempt to give as close to the example of real flying as is possible in a safe environment, which is critical for passengers and crew (Naidoo *et al*. 2014; Pasztor 2009). The similarities between the need for safety in prescribing and flying activity therefore points to perhaps the need for similarities in the pedagogies of learning. While flight simulators have proven effective in pilot training (Naidoo et al. 2014), case-based learning through vignettes or scenarios and simulation may indeed improve the theory practice gap and decrease the risk of mistakes which could be harmful to patients and have an adverse effect on the nurse/ midwife (Crowley 2014). The competencies-based framework, which forms the basis for prescribing standards for nurse/midwife prescribing students, requires a pedagogy that simulates the real-world experience. It has been long reported that there are high number of prescribing errors among medical prescribers (Gordon *et al.* 2013) and an acknowledgement of an active rather than passive learning experience of prescribing was required to decrease error rate.

Problem-based learning (PBL) was seen as a pedagogy that could bridge the gap between the theory and real-world experience (Nazar *et al*. 2014). The WHO, in

their *Teaching Guide to Good Prescribing* (Scordo 2014), endorsed this utilization of PBL in the learning of prescribing. While Drennan *et al.* (2009), surveyed nurse and midwife prescribers to evaluate their preparation to prescribe, the survey did not question them about the pedagogy used in their preparation to prescribe. There is, however, mention of the assessment strategies, such as the use of case studies, Objective Structured Long Examination Records (OSLERs), reflective portfolio, written and multiple-choice questionnaires (MCQs) examinations for pharmacology. Neither did Drennan *et al.* (2009) question the HEIs, about the pedagogy of the programmes, due in part to the remit of the evaluation, which focused on the success of the prescribing initiative and its impact on the health service and on patients. For all HEIs offering nurse and midwife prescribing programmes in Ireland, the curriculum is approved by NMBI. However, a particular pedagogy is not recommended once the curriculum can demonstrate that the learning outcomes for the programme and the competencies can be attained for prescribing the pedagogy can be determined by the HEI themselves (NMBI 2015a). Problem based learning, as an active learning methodology is not incompatible with competency-based education (Consul-Giribert et al. 2014; Paranhos & Mendes 2010).

From examination of the literature, there are pedagogies, which facilitates real-world learning and bridges the theory practice gap such as experiential learning, peer teaching, cooperative learning and simulation learning (Labrague et al. 2019). These would be most appropriate for nurse and midwife prescribing programmes to increase the safety for patients who are on the receiving end of prescribing decisions by these practitioners (Labrague *et al.* 2019; Rutherford-Hemming and Alfes 2017; Lymn *et al.* 2008). When a student has an opportunity to learn a new skill using real-world events such as experiential or simulation learning the student has an opportunity to attempt the skill as close to possible to reality but with the with security of a safe learning environment (Rutherford-Hemming and Alfes 2017). Simulation according to Abrandt *et al.* (2016) influences future work performance, reduces error, and increases patient safety.

Fenwick in her 2001 monograph, discusses experiential learning from the theoretical perspectives underpinning it and explores the participation/situative orientation to experiential learning, that permits learners to become more immersed in their learning, when provided with the authentic conditions for that learning experience (Fenwick 2001).

2.5 Preparation for Prescribing

While the pedagogical approach may have emphasized competency-based approaches and experience-based learning, policy imperative continues to dominate developments in the field. The aspiration of the former Minster for Health was to have over 10,000 registered nurse/midwife prescribers in Ireland within 10 years. However, in 2007, when nurse/midwife prescribing was introduced, although difficult to verify the precise numbers, there were still a considerable number of nurses and midwives who had not undertaken the top up degree to bring their educational qualifications up to level 8 and were legally practicing with either a certificate or diploma in nursing /midwifery. In anticipation of all newly qualified nurses/midwives being educated to degree level from 2002 onwards, many of the Schools of Nursing and Midwifery in HEIs in Ireland offered a one-year nursing degree, which permitted the qualified nurses and midwives who had no nursing degree obtain a degree in order to be educated to NFQ level 8. The prescribing programme was offered at NFQ level 8 which is the degree level, however the certificate and diploma were only offered at NFQ level 6 and 7, the implications of this has been that nurses/midwives whose competencies are at level 6 or 7 have to prove their level 8 competencies through accreditation of prior experience.

The national review of prescribing conducted by Drennan *et al.* (2009), recommended the minimum entry requirement remain at NFQ level 8, however at the time of that review, virtually all of the nurses/midwives who had

undertaken the programme possessed a third level qualification and over half of these were educated to master's level. Since the initial commencement of the prescribing programmes in 2007, more nurses and midwives who are undertaking prescribing would not have had qualifications at NQF level 8, and more nurse and midwives who are not in clinical specialist posts namely CNS/CMS and ANP/AMP. The nurse/midwives who do not have NQF level 8 qualifications are all at least 15 years qualified in the case of the certificate nurses/midwives and at least 9 years qualified in the case of the diploma nurses/midwives. As mentioned already, Drennan *et al.* (2009), recommended keeping the entry level at QQI level 8, they did recommend a need for debate regarding the introduction of the prescribing programme into the undergraduate nursing and midwifery degree.

Interestingly in 2012, as a result of the need to recruit more registered nurses and midwives in Ireland, owing to a shortage of nurses and midwives which was a consequence of an embargo on recruitment for financial reasons, the then Minister of Health and Children announced a Post Qualification Nursing and Midwifery Graduate Initiative. This initiative targeted newly qualified nurses and midwives with a contract for two years including access to undertaking the nurse/midwife prescribing programmes (HSE 2012). Unfortunately, the salary for these nurses/midwives was far less than the former contracts offered to nurses/midwives. However, the noteworthy point about this recruitment strategy was that discussions began to explore the changing of the entry criteria for nurse/midwife prescribing programme from 3 years post qualification experience to 1 years' experience, these discussions directly undermine the recommendations of the Drennan *et al.* (2009) report, which argued to leave the entry criteria as it existed. As the Post Qualification Nursing and Midwifery Graduate Initiative was implemented the offer to permit these new graduates to nurse/ prescribing programme was withdrawn, possibly acknowledging the need for greater experience and competence prior to undertaking this expansion of the nurse/midwife role.

One of the debates about the programme content, is the extent and depth of the pharmacological knowledge required. This is an issue which has been reported by many authors (Luker *et al.* 1998; Sodha et al. 2002a ; Sodha et al. 2002b and Bradley *et al.* 2006) and according to McHugh *et al.* (2020) and Drennan *et al.* (2009) the pharmacology was the one area identified by nurse/midwife prescribers in which they required continued professional development.

In Ireland, a generic nurse/midwife prescribing programme is offered which nurses/midwives from any clinical setting can undertake. The areas of knowledge required by a nurse/midwife are included (see Appendix C).

However, in the evaluation conducted by Drennan *et al.* (2009), this difference between generic and specialist was reported, and a number of the respondents stated that the specialist clinical areas could be reflected in specialist focused assessments and some specialist lectures/tutorials. Against this, the syllabus for the prescribing programme is focused on a systematic knowledge of prescribing rather than a specialist focus (NMBI 2015a); it may be logistically difficult to offer specific disciplines prescribing programmes. Furthermore, the person is a whole person, not just one system to prescribe for; the active ingredients in medications affect the whole body. In reality, patients rarely present with uncomplicated histories, mental health service users have physical ailments, pregnant women may have other pathologies, so it is not realistic to regard nurse/midwife prescribing activity as having limited effect in one system only.

2.6 Decision Making Framework for Nurse and Midwife Prescribing

As part of the suite of supporting documentation for nurse/midwife prescribing, the Nursing and Midwifery Board of Ireland (NMBI) formerly, An Bord Altranais published the '*Decision Making framework for Nurse and Midwife Prescribing'* in 2007 (See Appendix D)(An Bord Altranais 2007c). The framework/algorithm acts as a guide for the nurse/midwife prescriber to follow, as they engaged in the

prescribing process. Presented in the form of a decision analysis tree, it safely directs the actions and decisions of the prescriber. Decision-making frameworks are not new to nursing/midwifery (NMBI 2015c; Enck 2014; Jefford *et al.* 2011; Hyde *et al.* 2009; Wueste 2005; An Bord Altranais 2000a). Clinical decision-making is a vital element of nursing and midwifery practice (Hyde *et al.* 2009; Arries 2006). However, Enck (2014) argues, that clinical decisions cannot be reduced to a determinate answer all the time; nevertheless, decision-making frameworks can guide practitioners through the decision-making process. Hypothetico-Deductive theory is the dominant paradigm behind the nurse prescribing decision-making framework, which is the systematic approach to diagnosing what the patient is presenting with and the prescribed treatment, however, the decisions made by nurses and midwives would also be associated with the Intuitive-Humanistic Theory. Benner (1984), in her seminal work on clinical decision making, found that the inexperienced (novice) nurse/midwife, used more hypo-deductive reasoning and the more experienced nurse/midwife (expert) used more intuitive in their clinical reasoning. While so many aspects of nurse/midwife prescribing in Ireland were explored in the national evaluation conducted by Drennan *et al.* (2009), this decision-making framework was mentioned as being one of the documents produced, however there is no mention if nurses/midwives use the framework or how it is used. This is an aspect of nurse/midwife prescribing in Ireland, which may warrant examination. In the next section, prescribing models are examined.

2.7 Prescribing Models

In terms of prescribing models, three exist internationally namely, independent prescribing, supplementary prescribing and community practitioner nurse prescribing which were adopted support nurse/midwife prescribing (Kroezen *et al.* 2012).

In the first model- independent prescribing operates through the nurse prescriber independently assessing, diagnosing and devising a plan of treatment which may include prescription. These nurse prescribers generally operate from a limited formulary or indeed an open formulary. Countries that operate this model include Ireland, United Kingdom, New Zealand, the Netherlands, Finland, Swede, and several states in Australia, Canada and the United States of America (Kroezen *et al.* 2012, 2014a, 2014b, 2014c).

While Ireland utilized the independent prescribing model, it operates a limited formulary using a document called a collaborative practice agreement (CPA) which states clearly what medications and medicinal products the nurse/midwife can prescribe. It is widely accepted that operating a number of prescribing models within the one jurisdiction can be problematic in term of providing an appropriate education programme (Bradley *et al.* 2006). The choice of the independent prescribing model was decided as a result of the review conducted by An Bord Altranais and the National Council in 2005 (An Bord Altranais and National Council 2005). The purpose of the review was not to have participants pick a model but rather to identify their prescribing needs. However, as the review progressed, participants themselves identified that independent prescribing in collaboration with a medical practitioner was preferred. The purpose of the National Independent Evaluation of the Nurse and Midwife Prescribing Initiative undertaken by Drennan *et al*. (2009) was to evaluate the model of prescribing, which Ireland was utilizing, with regard to communication, patient safety, quality and patient satisfaction; the evaluation reported that this model of independent nurse midwife prescribing should continue.

The supplementary model of prescribing is operated by the United Kingdom, Spain, Finland, the Netherlands, a number of states in Australia and the United States of America (Kroezen et *al.* 2012). How this model of prescribing differs from independent prescribing, is that it a partnership between a doctor who is the independent prescriber and a nurse/midwife, where the doctor completes the assessment and diagnosis, but then the nurse/midwife can then prescribe

from a limited or open formulary (Courtenay *et al.* 2007). This model in comparison to the independent prescribing, appears to expose the nurse prescriber to greater error in the prescribing process as they are not the primary assessor of the patient, but they then can prescribe medicine (Kroezen *et al.* 2012).

Finally, the third model of prescribing community practitioner nurse prescribing which, only operates in the United Kingdom and is solely utilized by community practitioner nurses with a limited formulary specific to their scope of practice (Kroezen *et al.* 2012).

While, in Ireland the model used is independent nurse/midwife prescribing, the key component to legally permit the nurse/midwife prescriber to prescribe, was the collaborative practice agreement dealt with in the next section.

2.8 Collaborative Practice Agreement

In order for a registered nurse/ midwife to prescribe in Ireland, an active Collaborative Practice Agreement (CPA) must be used (An Bord Altranais 2012). This document gives them the legal authority to prescribe medicines and medicinal products for their patients. For an example of a CPA (see Appendix E and F). However, the CPA may be one of the significant barriers to independent nurse/midwife prescribing progressing and being implemented, to the large number of nurse/prescribers envisaged in 2007 (Drennan *et al.* 2009).

The purpose of the CPA is to define the area of prescribing, the medicines, and medicinal products to be prescribed and finally to articulate the procedures to ensure the safe operation of the nurse/midwife prescriber, through oversight by the Drugs and Therapeutics Committee (DTC), in the clinical area in which the nurse/midwife is prescribing (An Bord Altranais 2012). If a drug is not named on the CPA, the nurse/midwife prescriber cannot prescribe it and would be in breach of the conditions of the CPA to prescribe outside of the defined list, resulting in a possible charge of professional misconduct.

Nevertheless, even after just two years of nurse midwife prescribing, one of the key recommendations from Drennan *et al.* (2009) was for An Bord Altranais to phase out the CPA in time, due to the administrative obligation to both the nurse/midwife prescriber and the DTC. Also, at this point over one thousand eight hundred nurses/midwives have successfully completed the nurse/midwife prescribing programme there remains a significant percentage of those who still have not been able to register as a nurse/ midwife prescriber, as they have not completed the CPA or had it accepted by their DTC. Drennan *et al.* (2009) found that 40% of the nurse/midwife prescribers were delayed in registering as a RNP/RMP, due to the difficulties with DTC accepting the CPA. While not mentioned, in the recommendations of Drennan *et al.* (2009), the fact that the CPA development is not an outcome of the nurse/midwife prescribing programmes, does leave the development of this key document very much in the hands of the novice nurse/ midwife prescriber.

Two attempts were made by HSE in 2011 and 2013 to make the development of the CPA an outcome of the nurse/midwife prescribing programme through negotiations with the HEIs, to mixed results (Health Service Executive 2011, 2013). The second attempt, a service level agreement, was focused on ensuring any nurse/midwives who undertook the programme, completed the programme in a timely manner with a near to finished draft of the CPA, in order to speed up registration. Nevertheless, even with this push by the HSE to have nurses/midwives ready to register, the DTC then became the major obstacle to progressing the students and for the HEIs this obstacle was one that only the HSE could surmount.

An examination of any of the implementation reports from the Office of the Nursing and Midwifery Service Director, reveals a distinctive difference between nurses/midwives who have completed the prescribing programme from the private health care organizations in Ireland, versus those working in the HSE, in that the majority of those from the private sector are registered and prescribing. It is also worth noting that the fees for the nurses/midwives working in the

private health care organizations come from their budget, as opposed to the payment for the HSE nurse/midwives coming from exchequer funding. There have been no studies conducted yet into the differences between the completion times, to registration by public versus private nurse/midwife; nonetheless, it may be investigated at some point in the future. Figure 2.2 outlines the steps in becoming a registered nurse/midwife prescriber in Ireland.

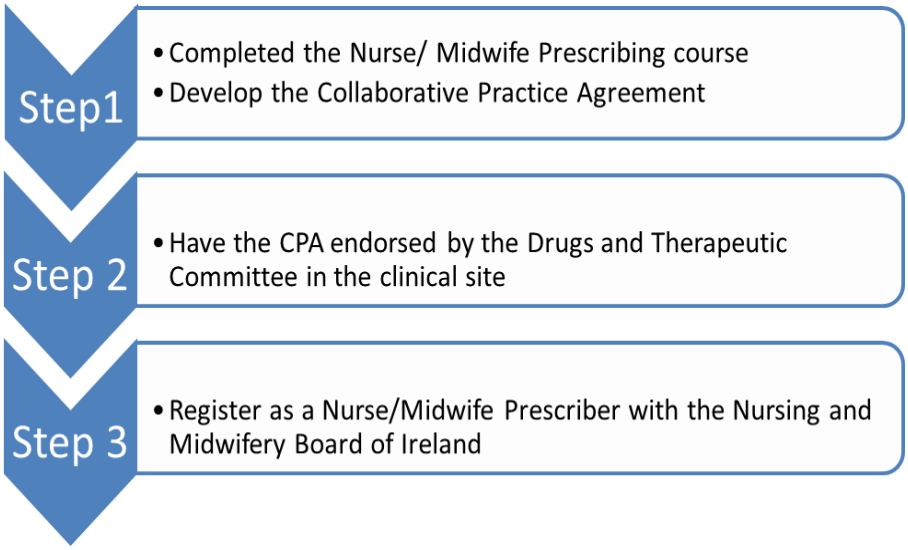

Figure 2.4 Steps to becoming a Nurse/Midwife Prescriber in Ireland

A difficulty with the CPA development is only one facet in delaying the registration of the nurse/midwife prescriber (Drennan *et al.* 2009), many of these factors are outside the scope of the HEI to solve. In the next section, the nurse/midwife prescribing minimum data set will be explored.

2.9 The Nurse/Midwife Prescribing Data Collection System

The HSE as part of the auditing process of nurse/midwife prescribing, established a prescribing data collection system with the aim of recording prescriptions nurse and midwives were writing (Adams *et al.* 2010). While this system will not be examined in this study, its importance is in respect of the governance of

nurse/midwife prescribing in Ireland. This online data set records a number of variables concerning the prescription the nurse/midwife may write as can be seen in Figure 2.5.

Minimum Data Set: Thirteen Data Items	
1. Clinical Site	Name of Hospital
2. NMBI pin Number	Each Nurse/Midwife has this number
3. Clinical Area	i.e. Midwifery
4. Date	
5. Shift	i.e. long day
6. Medical Record Number	Each patient has one of these number in a particular site but as there are no national medical record numbers one patient can have multiple numbers
7. Prescription Mode	Kardex, Pad, Electronic
8. Prescription Type	*(inpatient, non- General Medical card patients , General Medical card patients, Long Term Illness, High-Tech, HAA)*
9. Clinical Indication	*(Treatment, Prophylaxis, Diagnosis)*
10. Medicinal Product	Generic Name

11.	Dose	
12.	Frequency	OD, BD, TDS, QDS, Tarde, Nocte
13.	Route	PO, PR, PV, Topical, IM, SC, IV

Figure 2.5 HSE Prescribing Minimum Data Set

However, there are a number of limitations with this online system. Firstly, this system is only accessible by nurses/midwives employed by the HSE, therefore the prescribing activity of nurse/midwife prescribers employed in the private sector is not recorded. Secondly, if nurse/midwife prescribers who engage in an episode of care with a patient and the outcome is not a prescription, this activity is not recorded, however this episode of care may have meant that a patient received the correct care. For an example of the report generated through this system (see Appendix G). Rumours persist that report may be incomplete because, many nurse/midwife prescribers do not enter each prescription they write, due to time constraints.

The original purpose of the minimum data set to monitor the activity of nurse/midwife prescribing in Ireland, does not actually record this activity accurately. Some nurse/midwives have reported their reluctance to start prescribing because of the time required to input each prescription. The national evaluation by Drennan *et al.* (2009), did highlight the difficulties of the prescribing data collection system only recording prescriptions and not recording decisions where a prescription is not issued. Drennan *et al.* (2009) did recommend the system continue. However, an independent review of the data collection system by Creedon *et al.* (2014) found again some of the concerns expressed in the Drennan *et al.* (2009) study, which on balance found benefits including, gathering information regarding patient care and safety. In their recommendations, they proposed a review, rather than elimination of the data collection system (Creedon *et al.* 2014). The Office of Nursing and Midwifery Services Director in 2014, undertook a review of the prescribing data collection system. The only significant changes as a result of this review were to reduce the number of data entry fields; to increase awareness of the systems; include

a discontinuation of medication field and to assist users become more familiar with all the capabilities of the system (Office of Nursing and Midwifery Services Director 2014a). The next section will examine confidence in prescribing.

2.10 Confidence in Prescribing

Confidence can be defined as belief in oneself and one's powers or abilities. However, confidence can also be viewed as being context specific to a particular task, which allows for the fact that, people can have a different level of confidence depending on the task or experience or the different role they have (Perry 2011). If confidence is viewed as being on a continuum, one extreme is lack of, or little confidence and the other is overconfidence. Overconfidence is problematic particularly if the person has no experience or knowledge (Perry 2011).

One of the key components in the ability to prescribe medicines is confidence in prescribing. Lack of confidence was found to be a factor in the prescribing practices of doctors (Sandilands *et al.* 2011) and (Ramaswamy *et al.* 2011). A number of authors have examined lack of confidence as a factor, which deters nurses and midwives from prescribing (Drennan *et al*. 2009; Courtenay *et al.* 2007; Latter *et al.* 2005, 2007; Luker *et al.* 1998). Increased levels of confidence regarding prescribing in nurses is due to experience and lower levels of confidence are typically seen in newly qualified prescribers or those who do not prescribe often (Latter *et al.* 2005, 2007).

Cashin *et al*. (2014) in examining ANP nurse prescribers, identified that confidence in prescribing was linked to the number of years of experience therefore the longer the ANP was qualified as a prescriber, the greater their level of confidence. However, in their online survey of 209 Australian ANPs they identified that reported confidence in stopping or decreasing medication prescribed by other health professional was lower (Cashin *et al.* 2014). This is supported by Perry (2011) who asserts the view that confidence is lower when

the loci of control is external to the person, as in the case of Cashin *et al.* (2014), the participants level of confidence decreased when they had to change a prescription initiated by someone else.

Confidence to prescribe was measured by Drennan *et al.* (2009) who found that nurse/midwives gained significantly in self-confidence to prescribe because of completing the nurse-prescribing programme. The increase in confidence was measured using the *Prescribing Course Outcomes Evaluation Questionnaire* (PCOEQ) (Drennan *et al.* 2009).

Lack of confidence was found to be a factor in the prescribing practices of doctors (Sandilands *et al.* 2011). A study conducted by Sodha *et al.* (2002a) revealed that among community nurses, that the knowledge of these nurse prescribers was not confirmed relative to their high level of confidence when they worked through paper based clinical scenarios in comparison with non-nurse prescribers. Factors which contribute to confidence in prescribing, were pharmacological knowledge, the amount of time spent on medication related care, the number of years qualified, and the nurse/midwife prescribing programme undertaken. McHugh *et al.* (2020) in their qualitative study undertaken in Ireland, reported that nurse prescribers were confident in their own expertise, their decision-making ability and collaborating with medical colleagues on prescribing decisions. The next section deals with accuracy in prescribing.

2.11 Accuracy in Prescribing

Nurse/midwife prescribing is an exact activity in which there is no room for error or guesswork. Consequently, the accuracy of the nurse/midwife prescriber is crucial to being able to make an informed decision about what the patient may need in their care and treatment (Bolt *et al.* 2014). The consequences of prescribing inaccuracies for patients may incur serious consequences including adverse events morbidity and mortality and suboptimal treatment (Khoo and

Lim 2003). Unfortunately, approximately 7% of patients admitted into the acute care settings are due to inaccuracies in prescribing (Tamblyn *et al.* 2012; Bates *et al.* 1995).

A number of tools exist to measure accuracy in prescribing including the Medication Appropriateness Index (Hanlon and Schmader 2013; Drennan *et al.* 2009; Barber *et al.* 2005). Accuracy is measured by examining patient charts, so therefore the prescribing decision has already occurred, and the patient has received the treatment. The development of these tools was in response to the dangers of polypharmacy in older people (Rankin *et al*. 2018; Patterson *et al.* 2014; Hanlon and Schmader 2013). Latter *et al.* (2005) established in their study of 128 nurses' prescriptions that these prescriptions were safe. In their 2020 study of medical prescriptions, Ragaven and Nkera-Gutabara (2020) found, that only 38% of prescriptions achieved a global accuracy score between 80% and 100% and identified discrepancies in patient and prescriber identifiers, as well as abbreviations and use of decimal places.

A number of strategies for improvements in accuracy while writing prescriptions are available such as electronic prescribing systems (Eguale *et al.* 2008), a prescribing wheel (Hixson *et al.* 2009), smart phones apps (Flannigan and McAloon 2011), auditing kardexs (Hojaili et al. 2013), double checking of calculations (Jatoi *et al.* 2010) and use of online resources (Prajapati and Ganguly 2013). However, against this evidence of how accuracy can be improved, several prescribing practices are still employed by prescribers which have a likelihood of inaccuracy such as, spoken medication orders (Lambert *et al.* 2010). Nkera-Gutabara and Ragaven (2020) suggest that accuracy could be improved with a prescription-writing quality improvement framework, including low tech solutions such as pre-printed patient labels and that long term e-prescribing might offer a solution. Finally, Drennan *et al.* (2009) assert the view that as nurse/midwife prescribing becomes more established in Ireland that the responsibility to improve the accuracy and safety of prescribing should be led by the nurse/midwife prescribers through continued education, collaborative audit,

and detailed review of their practice. The next section explores seeking advice about prescribing.

2.12 Seeking Advice about Prescribing

Nurses and midwives do not prescribe in isolation; they seek advice from a variety of sources such as medical colleagues, reference text and online resources. Seeking advice in relation to prescribing decisions was seen by Lum *at al.* (2013) and Likic and Maxwell (2009) as one of the principles to guide prescribers, to avoid prescribing errors in all prescribers including nurse/midwife prescribers.

In their study, Chan *et al.* (2012) recommended, that prescribing practice nurses always seek advice from obstetricians when prescribing for pregnant women, to avoid adverse effects on the developing foetus. The importance of seeking advice from medical colleagues about prescribing decisions reinforces the fact that prescribing does not occur in isolation (Cooper *et al.* 2012; Barlow *et al.* 2008).

The British National Formulary (BNF) was found to be the most accurate medication reference text commonly available in the UK (Cox *et al.* 2010). Using the BNF as a source of advice regarding prescribing according to Wagle (2011) and Robinson (2009), will reduce prescribing errors for all prescribers including nurse/midwife prescribers.

In their study to elicit which sources of medication information were used most frequently, Ndosi and Newell (2010) in their survey (n=48) identified that the BNF was the most referenced source at 95%, pharmacist at 57%, nursing colleagues 31%, doctors at 24% and patient information leaflets 24%. However, when the categories were re-classified as either a text resource or human the BNF was the most cited resource closely followed by humans. This study was conducted on nurses; however, there is no mention of whether any of the nurses

were nurse prescribers. One criticism of the BNF by Ndosi and Newell (2010) was that the information is presented for doctors and not nurses/midwives, however they do go on to state that the medication information needs of the nurse/midwife prescribers are different from non-prescribing nurses/midwives.

In studies conducted by Cogdill (2003) and Murphy *et al.* (2006), found that nurse prescribers did use medication reference material, equivalent to those sources utilized by doctors. Murphy *et al.* (2006) found in their small study in Canada, that an online medication resource was the least preferred resource for nurses and doctors after print versions and human sources. While nurse/ midwife prescribers seek advice regarding prescribing decisions, the literature would suggest that the BNF is the most popular method for accessing this advice. Creswick and Westbrook in their study in 2015, which examined social network patterns in respect of from whom medical doctors and nurses asked medication advice. They found that the pharmacist was the primary health professional they networked with, followed by junior doctors and experienced nurses, but significantly consultant doctors were the group least likely asked for advice, as the study found they were poorly integrated into medication advice networks (Creswick and Westbrook 2015). The next section will explore the scope of practice.

2.13 Scope of Practice

In Ireland nurses/midwives both registered and student nurses/midwives, all work within their scope of practice in their practice setting. Scope of Practice is defined as

> 'the range of roles, functions, responsibilities and activities, which a registered nurse or a registered midwife is educated, competent, and has the authority to perform' (NMBI 2015c p. 3).

This framework aims to support evidence-based practice, which is delivered in a safe and timely manner to patients (see Appendix H). However, the framework does permit the nurse midwife to determine their scope thereby allowing the flexibility, which is frequently required when working in a dynamically changing clinical environment. The key factors which need to be considered when determining the scope of practice of the nurse or midwife are, competence, accountability, autonomy, continued professional development (CPD), support for professional nursing and midwifery practice, delegation, and emergency situations.

Nurse/ Midwife prescribing has expanded the scope of practice of the nurse/midwife, however, some of the key factors just mentioned have been strengthened even further by this expansion of role through the prescribing competencies required to register as a nurse/midwife prescriber. Many of the prescribing competencies have competence, accountability, and autonomy and continued professional development (CPD) woven through them and in addition to this the new Nurse and Midwives Act 2011 focuses on protecting the public through the maintenance of competence and evidence of engaging in CPD. This was not explicit in the previous legislation 1985 Nurse Act in which there was no requirement for CPD (Nurses and Midwives Act 2011).

The scope of practice has indeed influenced this new legislation and brought it more in line with regulation of nurses and midwives internationally. When talking with nurse/midwives about their scope of practice, the one noticeable thing is the phrase 'am I covered' to determine whether they are permitted to engage in some aspect of clinical practice, and nurse/midwife operate within these parameters often unconsciously knowing the limitations. McHugh *et al.* (2020) in their qualitative study found that certainty of the nurses' scope resulted in prescribing only within that scope of practice, even when on occasion pressured to prescribe by patients and other colleagues. In terms of this study, the participants will be asked to examine their scope of practice in relation to several

clinical scenarios. The next section deals with the barriers to becoming a nurse/midwife prescriber.

2.14 Barriers to becoming a Nurse/Midwife Prescriber

As discussed in a previous section, there are a significant number of nurse/midwives that have completed the nurse/midwife prescribing programme and have never registered with An Bord Altranais. Additionally, a small number who have registered, but have never actually prescribed medication for their patients. While difficulties with the CPA have been explored, there is evidence of other barriers to becoming a nurse/midwife prescriber, such as the effect on the therapeutic nurse/midwife patient relationship in mental health nursing, fear of litigation, other health care professional (Ross and Kettles, 2012) and difficulties with the Drugs and Therapeutic Committee (Drennan *et al.* 2009).

While in their study, Ross and Kettles (2012) examined specifically the area of nurse prescribing within the clinical area of mental health, they acknowledge that the barriers to nurse prescribing could be applicable to all areas of nurse/midwife prescribing. Ross and Kettles (2012) argue a reason for the lower uptake in the UK by mental health nurses to prescribe is due to the philosophy of care adopted by the mental health services which has been one of recovery focused care (Ross and Kettles 2012). It has been argued by Bradley *et al.* (2008); Castledine (2000); Cornwell and Chiverton (1997) that this shift of mental health nurses prescribing medication is a move back to the medical model and has been identified as one of the reasons for this poor uptake.

The notion of mental health nurses prescribing in Ireland can be viewed as contrary to the philosophy of care currently within the Irish mental health services, with the emphasis on the Recovery model and a move away from the paternalistic medical model with its focus on medication as a primary treatment. This approach stands in opposition to the recovery model, with the emphasis on

the empowerment of the person and the person as expert in their difficulties (Department of Health and Children 2006, 2020). However, a counter argument that can reasonably made is, that by prescribing and tailoring medication requirements with patients, nurses within mental health can actively support recovery in terms of assisting patients with responsible risk taking and collaborative decision making.

Wells *et al.* (2008) points to a degree of ambivalence by community mental health nurses to the introduction of nurse prescribing in Ireland (Wells *et al.* 2009). However, this study must be examined in the context in which it was conducted, which was just prior to the introduction of nurse prescribing in Ireland. The bulk of the nurse/midwife prescribing studies published in Ireland which have commented on barriers to nurse/midwife prescribing, have engaged with registered nurse/midwife prescribers rather than nurses and midwives who have completed prescribing programmes and have not subsequently gone on to complete registration, so it is difficult to establish what barriers to registration still exist.

In many countries/states where nurse/midwife prescribing has been introduced, mental health nurses have been usually the last discipline of nursing to embrace nurse prescribing as they believed it interfered with the therapeutic nurse patient relationship (Snowden 2010) and the mental health nurses' role as a patient advocate (Rungapadiachy *et al.* 2004). However, in Ireland the nurse/midwife prescribing programme was developed as a generic programme for all disciplines of nurses/midwives to undertake. Notwithstanding this ambivalence by the mental health nurses towards nurse prescribing from Wells *et al.* (2009) study, mental health nurses now are among the three largest groups of nurses prescribing in Ireland along with nurses working in the emergency department and in older person care.

The anxieties and reservations expressed in the Wells *et al.* (2009) study now appear to have receded, judging the numbers of mental health nurses who have

begun to prescribe. The numbers of registered mental health nurse prescribers are similar in fact to the number of registered midwife prescribers in Ireland according to the implementation reports published by the Office of Nursing and Midwifery Service Director (ONMSD 2020) (see Appendix G).

2.14.1 Fear of Litigation

Fear of litigation was one of the barriers to nurse/ midwife prescribing identified by Lockwood and Fealy (2008) in their survey, which examined the views of Clinical Nurse Specialist. However, this study was undertaken just prior to commencement of implementation of nurse/midwife prescribing. With that said these findings did concur with those of another study by Luker *et al.* (1997a). One of the recommendations of Lockwood and Fealy (2008) was to recommend that robust legislation be enacted in Ireland to protect both the nurse and the patient. Again Luker *et al.* (1997a) in their study found that once the nurses began prescribing that their awareness of the legal implications of prescribing increased and consequently, they became more cautious in their practice. Drennan *et al.* (2009) reported 51% (n=45) of the nurse/midwife prescriber participants agreed with the statement 'I fear litigation'. However, it was not identified as a barrier to prescribing by the participants but considered as part of the safety aspect of their role as a nurse/midwife prescriber. Fear of litigation was expressed by medical practitioners in Australia, when acting as 'supervisors' of Advanced Nurse practitioners which included prescribing. Therefore, expansion of the nurse's role to include prescribing and the consequent fear of litigation is not just a concern for nurses, but also the medical practitioners who supervise them (Chiarella *et al.* 2020).

2.14.2 The Drugs and Therapeutic Committee

As reported by Drennan *et al.* (2009), one of the significant barriers to nurses/midwives becoming registered as a nurse/midwife prescriber in Ireland was difficulties with the Drugs and Therapeutic Committee (DTC). This committee present in every hospital, oversees the use of medications and medicinal products in the hospital, as well as the policies and procedures in relation to their use. Some of the difficulties encountered by nurse/midwife prescribers in dealing with the DTC were 1) not being able to agree upon the CPA with the nurse/midwife, 2) the infrequency of meetings, 3) the difficulty in expediting the process of accepting the CPA, and the differences in the requirements with the CPA from different DTCs. As mentioned previously, the HSE requested the Higher Education Institutions (HEIs) to include the development of the CPA as one of the outcomes of the nurse/midwife prescribing programme. Notwithstanding this request, the numbers of nurse/midwives who, have completed the nurse/midwife prescribing programme, and are still not registered still points to difficulties with the DTC. Connor and McHugh (2019) in their qualitative study, found that participants expressed dissatisfaction in having the DTC still review their list of medications, unlike the medical doctors who have no scrutiny pertaining to the medications they prescribe.

2.14.3 Other Health Professionals

In the UK, initially the British Medical Association (BMA) was opposed to granting prescribing right to nurses/midwives and pharmacists (Drennan *et al.* 2009, Avery and Pringle 2005). The BMA questioned the clinical ability of the nurse/midwives to prescribe (Drennan *et al.* 2009). However in 2005, Duffin reported there was support by medical doctors in the UK for the extension of the BNF across nurse prescribing (Duffin 2005a). McGavock raised the concerns about the safety of nurse/midwife prescribers, in 2007; however, this was only an opinion piece, which only discussed the potential for adverse events rather than presenting evidence of adverse events (McGavock 2007). In the wake of the Shipman murders, there were questions about the extending prescriptive

authority to nurses and midwives in the UK even though it was in operation since 1998 and Shipman was a doctor not a nurse (Duffin 2005b, 2004). A number of studies conducted in Sweden, Australia, Spain, and America identified similar opposition to nurse/midwife prescribing by the professional medical bodies (Cooper *et al.* 2012; Ball 2009; Snow 2008; Plonczynski *et al.* 2003; Wilhelmsson and Foldevi 2003; McCann and Baker 2002; Wilhelmsson *et al.* 2001; Nilsson 1994; Jones 1999). In addition, several members of the Royal Pharmaceutical Society of Great Britain expressed the view that pharmacists were better placed to prescribe medicines than nurses/midwives (Drennan *et al.* 2009). Again, in a study conducted by Cooper *et al.* (2008) where pharmacists were surveyed about their view on extending prescribing rights to nurses/midwives, the majority of participants expressed a negative view of this development.

One of the arguments as to why pharmaceutical and medical bodies have opposed the expansion of prescribing rights to nurses/midwives is due to the blurring of professional boundaries which are central to professional identify and power (Bechky 2003; Allen 1996). For nurse prescribing to be successful it is vital that the allied health professionals support it (Nolan and Bradley 2008) and the lack of support of these groups becomes a barrier to nurse prescribing being successfully implemented (Courtenay and Carey 2008).

Contrary the views of the professional medical and pharmaceutical bodies, there are a number of studies which identify doctors who do support nurse prescribing in clinical practice (Carr *et al.* 2002; Rodden 2001). The national study completed in Ireland in 2009 found that 86% of the nurse/midwife prescribers felt supported by their medical mentor and non-consultant hospital doctors in their role as a nurse/midwife prescriber (Drennan *et al.* 2009). More recently, a large-scale study, which measured the views of nurses and doctors in respect to nurse prescribing, found neutral to moderately positive views of nurse prescribing in the Netherlands (Kroezen *et al.* 2014). One of the consequences of nurse and midwives prescribing is the change in the power dynamic of the

medical doctor nurse/midwife relationship. Doctors are still unsure of what nurse prescribers can do and that; this lack of clarity could be eliminated with interdisciplinary training (Pritchard 2017). Connor and McHugh (2019) found that nurses who did not prescribe were unsure of the process and would expect the same flexibility of their nurse prescriber colleagues in prescribing for clients not in their care. Notwithstanding the barriers to nurse/midwife prescribing discussed in this section, nurses and midwives want to prescribe for their patients, the next section will examine what motivates them to prescribe.

2.15 Motivation to prescribe

A number of factors are likely to influence motivation to prescribe. From the outset of the introduction of nurse/midwifery prescribing, the rationale for its introduction was to improve the care delivered to patients in Ireland and the implementation of the working time directive for doctors and the shift from acute hospital care to community and primary care. While this was an opportunity to expand the role and scope of the nurse/midwife and making the service more efficient, it is interesting to examine the motivations for nurses/midwives to prescribe.

Currently, for nurses/midwives employed in the public health service prescribing programme fees are paid by the HSE. However, for those nurse/midwives employed within the private sector experience of having fees paid is variable. Nonetheless, for the public hospitals this is a great motivator to allow staff avail of the nurse/midwife prescribing programme as the money for the fees for this programme have been 'ring fenced' and therefore this does not impact on the educational budget of individual public hospitals. On completion of the nurse/midwife prescribing programme, this additional registration qualification did not afford the nurse/midwife prescriber an increase in salary.

Currently, within the HSE the recruitment and promotion of nurse/midwives is all but restricted due to the recessionary factors and along with the additional administrative responsibilities, and continued professional development commitments. Hence, it is difficult to see why against this background nurse/midwives would take up this additional work in Ireland. However, in a study conducted by the ONMSD (2014) among CNS/CMS prescribers in Ireland they reported improved patient care was identified as the most frequently selected motivating factor to become a nurse/midwife prescriber. In addition, service need and career enhancement were identified as being motivating factors to undertake a nurse/midwife prescribing role.

In comparison in the UK Scrafton *et al.* (2012) found that nurse/midwife prescribers were motivated to undertake this role, due to the availability of funding to undertake the programme. However, it may have been more a deciding factor for their manager than the individuals themselves. Many of the nurses reported the benefits for the patient in terms of the nurses increased ability to offer more holistic care to their patients and increased patient satisfaction. The results of Scrafton *et al.* (2012) study confirms findings from previous research (*Watterson et al*. 2009; Latter *et al.* 2005; Harris *et al.* 2004; Lewis-Evans and Jester 2004; While and Biggs 2004).

In addition, Scrafton *et al.* (2012) reported in their study that reservations were expressed by one of their participants that nurse/midwife prescribing could take over the doctors' role. However, once nurses began prescribing the benefits to patients and colleagues, these reservations were dispelled. Finally, if the nurse could prescribe, the queues to see the doctor were shorter; the service had increased efficiencies in terms of more patients being seen and with less waiting. In that study by Scrafton *et al*. (2012), none of the reasons why the nurses were motivated prescribed were for the direct benefit of the nurse alone, apart from possibly the availability of funding to undertake a course.

The emphasis on expanding the role of the nurse/midwife through prescribing was one of the messages being marketed to nurses and midwives to undertake the programme. One of the other pressures to get nurses and midwives to prescribe already alluded to, was the urgency by the Irish Government to have the working time directive introduced and the fastest and cheapest method of achieving this was to allow nurses and midwives to prescribe; in effect replacing doctors with less well-paid nurses/midwives. While medical practitioners viewed reduction of hours favourably, it has also been suggested that the legislation of nurse/midwife prescribing in the UK was a ploy by Government to shift the balance of power afforded to doctors in the health care system (McCartney *et al.* 1999).

Even though the motivation of the individual nurse/midwife to prescribe appears to be largely altruistic and therefore very much for the benefit for the patient, it is also reasonable to suggest that nurse/midwife prescribing is also an initiative of necessity for the health service rather than one expanding professional practice alone.

2.16 Conclusion

Nurse/midwife prescribing happens within a hierarchical health system in Ireland. Since its introduction in 2007 nurse/midwifery prescribing has resulted in several benefits to patients, the clinical service and to nurses and midwives in terms of expanding their scope of practice. While it was a world trend in nursing/midwifery practice, Ireland was one of the late adopters. The nurse/midwife prescribing programme is a generic course but combines with the scope of practice of the nurse/midwife. However, it has been controversial and there have been some barriers to prescribing. Previous evaluations of the programme have focused on the views of stakeholders and nurse/midwife prescribers. This chapter outlined some of the key developments in

nurse/midwife prescribing, the hierarchy of the Irish health system as well as a discussion on confidence, accuracy, seeking advice on prescribing, prescribing within the scope of practice, the motivation to prescribe, the barriers to nurse prescribing, the decision-making framework for prescribing, the HSE Prescribing Data Collection System and evidence-based practice. While this chapter has outlined the context of this research, chapter three shifts focus to the researcher, offering a reflective account of how the research process impacted on the researcher as the study evolved.

Chapter Three Reflection

3.0 Introduction: Reflection – my personal journey

This chapter begins with a brief reflection on my personal journey through this study and a discussion of my epistemological stance regarding this research. Reflection can be defined as 'an important human activity in which people recapture their experience, think about it, mull over and evaluate it' (Boud *et al.* 1985 p. 43). It is this working with experience that is important in learning. The reflective experience of the doctorate is not just the production of a thesis (Cunningham 2018; Dowling *et al*. 2012) but according to Cunningham (2018) it permits the doctoral student to understand their place within their profession. This section describes both the story of the research project, and how it supported me to reflect on my professional education and pathway and how they have impacted on me personally and professionally. On reflection of the whole experience of undertaking a doctorate, there are several observations to be explored, including changes in me, changes in the research question, my views on the research process and the implications of these reflections. Finally, for me the experience of this research to use a metaphor (Moje and Luke 2009) was like having another child, a being, which demanded my attention, and once I gave it that attention was wonderful to play with, but when I was away from it would cloud my mind with messages demanding to be engaged with again. By the end of the process the child had grown and gone out into the world in the form of this thesis independent of me the parent or author.

3.1 Personal and Professional Learning Changes

I started a taught doctorate in education primarily to get recognition of a qualification. As a full-time lecturer in a HEI, I hold a job, which would normally require a doctoral qualification at entry to the post. Like many of my colleagues in the nursing field, I came to the role through a different path, that of professional experience. My career pathway was one bridging the traditional hospital-based nurse training with the degree-qualified nurses/midwives who are university based. As discussed in the previous chapter, nurse education's transition into the academy in Ireland was against a background of debate about whether nurses need to be degree educated or remain in the apprenticeship model, which had served it well for over 100 years (Fealy and McNamara 2007). Hence, when I joined the academy, allowances were made for me and my colleagues' lack of doctoral education.

My nursing career commenced in St James Hospital in Dublin in 1988. The apprenticeship model as I experienced back then, was starting to break free from nursing based in custom and ritual and move towards evidence-based practice and reflection. I followed quite a purposeful direction from my second year there, with the focus of becoming a nurse tutor. A few of the ward sisters and senior nurses who assessed me during my training, informed me that I was able to explain and break down concepts to other students and to consider teaching as a career path within nursing. I was quite unusual in this choice with most of my colleagues coming to this career choice after years of experience as a staff nurse. Therefore, my experience of nursing was less experiential and more an academic reflection than most of my colleagues. The courses and clinical experiences I chose to undertake, all had the objective to get me on the tutor's course in University College Dublin. Having achieved this, on graduation in 1998 I was offered a nurse tutor post in a school of nursing in a psychiatric nursing school at a time of change, with the cessation of the Certificate programme and the commencement of the Diploma in Nursing. One of the reoccurring themes during my career has been change, the constant change in the nurse education to bring it towards a graduate profession. My career there might have been of

long duration but for the chance of timing. In 2002, nurse tutors in all the schools of nursing in Ireland were offered the chance to move into the third level sector once, they had completed masters' degrees or were in the process of completing one. As I had completed one in 2001, I was eligible for the transfer, but I still had to reflect on this move and its implications for me personally and professionally. However, when nurse education moved from the hospital-based school of nursing to a university-based setting I moved with it. On moving into the university, I noticed the ease and confidence of other lecturers with their role. Whereas their entry into the academy was usually on completion of doctoral education, nursing entered in a similar way to other public sector workers such as teachers or social workers having their own training colleges or professional streams fulfilling their own requirements. My own reflection on the perspective I had, was that student learning was like the holistic care for a patient. It is difficult not to think holistically about the student and their learning when the knowledge and capabilities you have as an educator are embedded in a philosophy of patient centred care, and this appeared to be at odds with the philosophy of the HEI. In addition, from my nursing experience, I had learnt not make assumptions concerning the type of care patients with common ailments required, but rather to see the person as an individual with individual needs and as a consequence this acknowledgment of individuality also spilled into how I had approached the planning of pedagogies with students. Hence, those trained within the academy seemed to be inculcated into the ways of working of the university, whereas those trained outside these structures in other ways of knowing and professional parameters did not have the same professional ease and confidence in this academic world. Again, nursing is a profession where nurses and midwives work collaboratively within teams and this collaboration was not as evident in the HEI. Moreover, the institutional requirements to hold doctoral level qualifications remained for career progression. For example, when the issue of being awarded tenure was offered, the need to undertake doctoral education was required.

These changes all occurred within a particular professional culture. The domain of nursing has traditionally had obedience at its core, in keeping with the hierarchical nature and power dynamic of the health services where nursing was subservient to the medical professionals (McNamara and Fealy 2010). Once nursing moved into the academy this obedience was transferred to the academy's requirement. There was existing stratification in terms of work activity in the academy, with a PhD as a marker of professional research activity. Those lacking doctoral education were streamed towards lecturing, with little expectation of engagement in research. Within the structures of the academy, this resulted in a two-tiered system, with those with a teaching only portfolio with very limited career progression, while those with a research portfolio have more extensive recognition, career progression and opportunities open to them (Lynch *et al.* 2012).

Prompted by these reasons, I began the traditional PhD a few years ago, but stopped for personal reasons. I found that process of learning and writing quite a lonely one. In 2010, once I had returned from maternity leave, I felt the need to undertake this programme of study again. Having experienced the solitary nature of the PhD, I explored a more structured programme of study with a group of people. Nursing practice is largely a team activity; you rarely work in isolation, so the notion of a collaborative community of learning with the educational doctorate naturally appealed to me. I was also prompted by several other personal reasons to persevere with this educational path. I was the first in my family to undertake this programme, so the progress of my research, was watched by my family, in the similar manner as grandparents follow the raising of grandchildren. It was in this context of collaborative care, support and expectation that I re-engaged with learning.

After looking at a number of programmes in both Ireland and the UK I chose the educational doctorate in Maynooth University. The modules, the lecturing staff,

and the taught element appealed to me. However, while I undertook this programme of study to gain a qualification, this is not all I received. I learned how to become a researcher, to look at my professional practice through the lens of a researcher, asking questions and critically reflecting on my working practices, cultures, and structure. I became inculcated into the ways of being of an academic researcher. A doctorate is quite a self-reflective activity, as I focused on myself and my learning in a more engaged and deeper way than other programmes. As I concentrated on a research question, which became my obsession, I had to manage my learning; otherwise, the process of answering that question could have consumed my time to the detriment of other aspects of my life. This could cause tensions and dilemmas for me both at home and professionally. In particular, I had to learn to manage the teaching and research parts of my lecturer role. Superficially, the doctorate is a qualification, however it fundamentally changed my thinking and once that change occurred in my thinking, I could never hit the undo button, akin to opening a Pandora's Box, it involved the process of becoming a scholar. For me my thinking changed in a number of ways, I humbly realized once I completed the thesis and the viva, that the more I learnt the less I knew and that it is a vanity to think you are accomplished. As an academic, I now need to continually push myself beyond my area of comfort in order for me to be an effective educator with my students. For me completing the educational doctorate has made me more curious and realize that the world is full of questions and that my mind is now open to broader ideas, and that I want to change the world or parts of it, rather than be content to be an accepting cog in a wheel.

As a practitioner coming from this collaborative field of nursing, I was also struck by the isolated nature of this research training. Doctoral research is unusual in that it is a major research project undertaken independently (even in structured doctoral programme). In most post-doctoral work, research involves a team and is done collaboratively especially in nursing. It makes more sense to work in teams and therefore there is an artificial dimension to the doctoral work, given

that it is individual and unfunded, generally removed to some extent from the collaborative and team structures of the nursing workplace.

There was also great personal learning for me in this process. I discovered that I am tenacious, disciplined and capable of very hard work over a period of time. I also engaged with a level of critical reflection about my practice as a researcher, practitioner and learner which has become an important part of my personal growth, but hard to do. These lessons have already started to serve me well in my personal and work life, as well as informing my research as evidenced throughout this thesis. Where I came from professionally has influenced how I have learnt, in that I always worked as part of a team and the choice of an educational doctorate was really predetermined for me and perhaps why I did not enjoy the isolation of the traditional PhD journey. Prior to discussing the changes, which occurred during the research, the epistemological position is next explored.

3.2 Epistemological Position

Prescribing has been previously described as a precise activity (Dey et al. 2019; Bolt et al 2014; Hojaili *et al.* 2013) where inaccurate prescribing can have serious consequences for the patient (Roulston and Davies 2021; Royal Pharmaceutical Society 2019; HIQA 2015; Odukoya et al. 2014; Khoo and Lim 2003). Therefore, in order for this study to measure the confidence, accuracy, seeking advice and working within the scope of practice, the preferred philosophical underpinning was positivism, the traditional scientific approach based on the statistical analysis of measurable data, which is observable using some form of instrument. For exploration of the opinions of the participants in relation to the programme and the impact of prescribing on their practice, a post-positivist qualitative descriptive methodology was chosen, to understand the nuances and patterns

lying more deeply behind the manifestations of the observable reality and acknowledges the different ways of perceiving and interpreting our world. Post-positivism from a nursing perspective, can be regarded as 'belief in observables; recognition that the results of scientific strategies can be corroborated but not verified; the inseparability of facts from theories; acknowledgement that observation and experience are theory laden; and lastly, the context of discovery is not differentiated from justification in scientific work' (Gortner 1994; Philips 1992; Gortner 1993, cited in Forbes *et al.* 1999 p.372). Ultimately, the nature of the research question decided the methodology. The research question does not neatly have one philosophical underpinning, but a combination of two namely, positivist and post-positivist approaches, which are in tension with each other. The focus for the researcher was to establish if the nurses/midwives could prescribe accurately (using a positivist approach) and the impact of this new activity in their clinical practice (using a post positivist approach). For me the question of accuracy is fundamentally a quantitative research question the answer is either right or wrong. It is not a qualitative question where a number of people can hold different opinions, as I was not exploring the phenomena of accuracy, and I was exploring through clinical scenarios what was the correct response to the clinical scenarios to determine the participants' accuracy. The choice of quantitatively measuring the other elements of the question i.e. confidence, seeking advice and working within the scope of practice made sense to me these are very easily measured using a Likert scale and closed questions. The secondary research question, was exploring how prescribing has changed the participants' practice and their view on the prescribing programme, which again for me required a qualitative approach to understand their opinions.

Nursing/midwifery has sought to prove itself as a profession with both academic and practice elements and for the researcher a positivist and post-positivist approach blends both elements and of ways of knowing. One of the difficulties for me as a both a nurse and an academic is sometimes the apparent dichotomy of both activities at the heart of nursing which is rooted in caring. As a nurse, I

see the person in terms of holistic caring, looking at the individual, and while in education we have lately come to the student-centred learning, the education focus is still not a holistic approach. A number of academics have written about this tension for nurses/midwives who have moved into the academy in Ireland (Hackett 2015; Fealy and McNamara 2008). Prescribing as a learning experience suffers from this tension with a medical model rooted in signs, symptoms, and cure with statistical evidence for the efficacy of treatments, while simultaneously having to acknowledge the patient being an individual with their own behavioural, psychosocial cultural and personal experiences, which effect treatment. Therefore, nurse/midwife prescribers have taken both the scientific and experiential perspectives on board in order to have a holistic approach to prescribing. Hence, the prescribing programme has the requirement to hold and satisfy both types of knowledge claims. Nursing has different ways of knowing to medicine, through its emphasis on reflection on experience (Thorne 2020; Carper 1978) yet, prescribing a core medical activity is now a part of nursing/midwifery and therefore, the dilemma for nurses and midwives is to embrace the positivist knowing of prescribing without losing the holistic ways of knowing in rooted in nursing. It is reminiscent of the phrase coined by Castledine in 1995 with respect to the nurse practitioner and by Griffiths again in 2020 that nurse/midwife prescribers are not a mini doctor but a maxi nurse (Griffiths 2020; Castledine 1995).

For a considerable period, the dominant paradigm within nursing was that of an abridged medical knowledge embedded in positivism. This was identified as sufficient for nurses and midwives to practice and it has been argued that this undermined the discipline's opportunity to be considered as a profession in its own right (Fealy and McNamara 2007). Currently in Nursing and Midwifery, the trend is to utilize positivist models of evidence-based practice (Esteban-Sepúlveda *et al.* 2021). As a profession, nursing often seems to embrace new theoretical and philosophical trends that are not developed within the discipline (Mackay 2009). Arguably, this is because the profession has always trusted

knowledge from other disciplines. The embracing of this positivist paradigm has caused tensions between the clinical nurses and the nurse academics , primarily due to the belief of the clinical nurses with their tacit knowledge that is based on the experience of caring for patients and as such is an experience drawing on post-positivist ways of knowing (Zarshenas *et al.* 2014; Whitehead 2005).

While positivist or quantitative research methodologies have been acceptable to medicine, lately sole reliance on these philosophies and methodologies has been viewed with scepticism as they reduce care and treatment to being either effective or not and do not take cognizance of the holistic being and experience of the patient (Berkowitz 2016; Manary *et al.* 2013; Clark 1998). Evidence based practice is a desirable concept in health management as it produces efficient, quick and safe care (Esteban-Sepúlveda *et al.* 2021; Nolan and Bradley 2008). However, the literature has questioned whether the one size fits all model of evidence based practice is appropriate, as it removes aspects of the personal relationship and choice of the nurse/midwife with the patient (Bonell 1999). Patients are very much individuals with their own set of beliefs and values, which sometimes are at odds with the evidence. In mental health for example electro convulsive therapy is an evidence-based therapy for drug resistant depression and or suicidal behaviour, however many patients do not want to give their consent for the treatment due to fear (Chiu *et al.* 2014). Consequently, in some cases invoking the law to apply this treatment to the patient (Mental Health Act 2001) which can affect their ongoing trust in the health professionals, as the health care professional carry out the treatment in conjunction with the law but against the wishes of the patient. Again, with cancer some patients refuse the treatment even though it is judged the best option (Aizer *et al.* 2014; Radley and Payne 2009). However, it could be argued that this rejection of evidence-based practice, can break down the communication between the patient and the health care professional (Huijer and van Leeuwen 2000). Through positivism, we judge the best option as the one to take, based on current evidence; from a

post-positivist perspective, 'best' is relative to who knows and how they approach and situate it.

Some nurses feel constrained by evidence-based practice, contending that they should be able to make decisions based on empirical knowledge and knowledge gained through experience, as well as the patient's wishes. They contend that decisions need to be based on the context of care and acknowledging the uniqueness of people (Nolan and Bradley 2008). Particularly in the discipline of mental health nursing, evidence-based practice or a positivist paradigm reduces the importance of the personhood of service users and the vital component of the therapeutic relationship (Hewitt 2009).

The need to be seen to embrace a positivist paradigm of care is set against the context of nursing care having a very limited research base, while the medical profession forged ahead with studies largely within the positivist paradigm. For years, Nurses in practice engaged in activities, which were handed down with little or no scientific basis or examination of any evidence for their effectiveness. Ritualistic practice was the norm. One of the more unusual rituals in nursing/midwifery practice up until the 1980's was turning the open end of the pillowcase away from the door of the ward; the rationale was it has always been done that way. But the reason for doing this emanated from Nightingale's time, due to her experience in the Crimea where tents were used to house patients, an open-ended pillow facing the tent door could fill with sand which blew in every time the tent door was opened. Therefore, there was a practical reason originally for the placing of the pillows, however over the years the ritual of placing the pillow was maintained even though we had moved away from tents, however it took investigation into the distant past to explain a practice that existed in the 1980s without question. The remarkable fact is that Nightingale herself proposed that nurses should operate from a positivist paradigm. She generated her own research for example, to show how improvements in hygiene decreased mortality rates in hospital, however this emphasis on situated-based evidence

through research was lost almost as soon as it started and was not resurrected until nurses started undertaking academic courses from the 1970's onwards.

Some of the difficulties and tensions between positivism and post positivism are due to the lack of an examination of the philosophies underpinning the paradigms (Crossan 2003). Crossan (2003) asserts the view that while post-positivist research and the knowledge generated from this research does recognize the experience of patients or nurses as being valid and important, it is variable. The methodologies used, owing to the close involvement of the researcher's collection of data through interview or focus group for example, may point to different results if a different researcher is used. He also points to possible lack of generalization of findings from qualitative data due to the small sample sizes. Nursing knowledge cannot be generated through positivist models alone, the very experience of nursing and being nursed has relevance for generating knowledge in post-positivist approaches. Anecdotally, it has been reported, that when nurses present research proposals before Ethics Committees, the methodologies used mainly the post-positivism ones such as phenomenology are examined very thoroughly by the committee and often require more information as these committees have been more familiar with randomized controlled trials for new drugs.

The nature of nursing knowledge is constantly changing as it is revised and re interpreted. However, does this mean our fundamental belief about the theoretical basis has to change as well? Medical doctors for example are certain of the biomedical model that they wear like a well-fitting coat. While research changes the regime they may use in particular diseases, the fundamental belief in their appropriateness of what they do does not change. What possibly has changed in nursing is utilizing reflective practice as a method to question why nurses can act before thinking, the skilful nurse can act in this way but reflection gives the nurse the opportunity to question themselves and their actions in a conscious way as opposed to the unconscious ways in which the expert nurse acts. It gives a process, which reveals how tacit and intuitive knowledge works.

Carper (1978) bridges the opposing views of empirical and tacit knowledge in nursing through her analysis of the knowledge of nursing as being empirical, ethical, aesthetic and personal knowing. Carper's (1978) work has been validated by many of the nursing scholars since including Nagel and Mitchell (1991) Chinn and Cramer (1999) and more recently Upshur and Van Den Kerkhof (2001) and Thorne (2020). Hence, nursing knowledge is a mix of empirical based or tacit based knowledge, and the use of reflective practice can perhaps explain the fusion of the two types of knowledge in order that the nurse can care for the patient (Fawcett *et al*. 2001).

3.3 Changes throughout the Research Process

Initially I applied to begin the doctorate with the intention of examining online learning for nurse prescribers. I had some experience of developing e-learning content and was interested in this area. However, during the first year of the course, my thinking changed. I wrote a position paper concerning my epistemological stance on Nurse Education in Ireland which brought me to question some of my assumptions about nursing knowledge. As a result, I became more interested in the nurse/midwife prescribing programme as a whole rather than one specific aspect. Also, my approach linking methodology and my view of knowledge and research changed, shifting from a positivist view to a greater appreciation of a post positivist approach.

This led me to consider assessing the achievement of learning outcomes of the programme due to my role as a programme coordinator; however, I started examining studies involving clinical scenario testing and finally decided this was the area I wanted to explore, the process of learning. When I was seeking ethical approval the research question I adopted was, 'How well does the Nurse/Midwife Prescribing Programme, prepare the prescriber for their role in Ireland', but once

the fieldwork commenced it became more focused on confidence, accuracy, seeking advice and working within the scope of practice.

This refining of the research question was an important process for me. This has to occur within the broader consideration of those points below. The eureka moment for me is when the research question becomes clear this was a gradual process of realization, its implications then become clear from;

- What is the research question?
- What is known about this already?
- How can I measure the answer?
- How can I analyze the answer?
- What does this analysis mean?
- What does this add to what is already known?
- What are the implications of this new knowledge?
- What does this mean for educating nurse/midwife prescribers specifically and education generally?

While these questions are very much set in a positivist approach when I drilled down into the question, I realised that this study would have to have a positivist and post-positivist approaches throughout the research process.
Once I looked beyond the learning outcomes and started to look at how can we examine if nurse prescribers can prescribe safety, then the idea of using the clinical scenarios occurred to me and from examination of the literature it was obvious that confidence was an important factor in nurses/midwives prescribing or not.

The methodology which I chose to research this question was a mixed method approach with the emphasis on the testing of the participants with the validated clinical scenarios. Mixed method as is utilized in this thesis is the fusing of qualitative and quantitative methods in this one study and chapter four will explore this issue on more depth (Hall 2020; Teddlie and Tashakkori 2009). However, as the field work began, the qualitative component became more

important and rather than simply giving context to the answers to the clinical scenario, the qualitative component of the study revealed a richness and depth to the study which would have been completely missed if the study had been a quantitative study alone. I became aware of this change of focus happening gradually, as I found that the qualitative interviews were revealing unexpected insights and depth. Therefore, the balance between the two components changed. Initially the study had been a quantitative study with a minor qualitative element, but as it progressed the qualitative element became more dominant. The change in direction was also driven by the interviewees. During the interviews, the participants began to raise issues, which were not part of the original research plan but provided these unexpected and vital insights. Becoming in tune with this evolving nature of the research question and methodological process was a key part of research experience and learning for me.

3.4 Reflections on the research process

During the doctoral programme, I spent a good deal of time in reflection and discussion about my personal epistemology as a researcher. I found this element quite challenging. I am working in a very positivist culture, and in an area where high reliability and accuracy are needed. Therefore, my initial orientation was towards the positivist approach. A considerable part of the doctoral programme asks students to engage with theories and critical reflection about our personal epistemology as researchers. My initial focus was very tightly on the research question, with far less emphasis on the theoretical framework. This reflective process of identifying and developing critical awareness of my own epistemological stance enable me to link my research question more clearly to the education field and orientation on which this professional doctorate focused.

This changed the way I approached aspects of the research process. For example, in terms of the ethics of sampling, I initially considered a different sampling strategy, recruiting directly from the candidate register held by the Nursing and Midwifery Board of Ireland. However, this method of recruitment potentially bypassed the duty of care in bringing to the attention of a specific programme coordinator any knowledge issues with participants enrolled on their programme so was discounted.

While I found the entire research process enjoyable, however the field work was the most enjoyable component for me. My recent experience of nurse/midwives outside of my education role was in the context of my involvement in fitness to practise where nurses/midwives have come to the attention of the professional regulator due to deficits in the care they provide to patients for various reasons. Meeting practitioners who were enthusiastic and safe during my research fieldwork was refreshing and an uplifting experience for me. I experienced a different type of conversation, a professional conversation with competent professionals, which was removed from the power dynamics and tensions of a fitness to practise context or a teaching and assessor role. As a programme coordinator, the student evaluates and gives feedback about the programmes I teach, but this professional conversation afforded me a broader evaluative view of the programme, which seldom occurs. Consequently, research and professional practice came together for me during this research process.

I was acutely aware that those individuals who participated in the study were enthusiastic about nurse prescribing and this may have incurred the risk of sample bias. However equally, the study could have recruited participants who were not interested in nurse/midwife prescribing and could have manipulated the study to promote their own agenda, to cast doubt on the effectiveness of nurse /midwife prescribing. Ultimately, the reasons for participating in the study cannot be ascertained.

The location of the interviews was decided by the participants, some of the interviews occurred in the clinical site of the participants, in the ward or department where they practiced. For some of these, they stated at the outset they might have to interrupt the interview if their colleagues or patients required them, and this was to be expected. What I was surprised about was, some wanted to meet on their day off or at the end of a shift in a hotel, some respondents needed to separate themselves from the work environment. I was surprised at the generosity of the participants who were willing to meet me in their off-duty time.

3.5 Research Analysis: Learning surprises for me

Researching and analysing the findings brought a series of new learning and surprises for me and so was a key part of the research process for me.

This process has changed my perception of research, I started as positivist and focused on the technical aspects, but I have moved from positivist to a balanced view. Mixed methods came to life for me in much the same way as polypharmacy came to life for the participants once they became prescribers. Once you are engaged in the process of research rather than just examining it theoretically, the engagement component is where my learning and my change in thinking occurred.

By the conclusion of the research process, I became more concerned with the health system and the impact of nurse prescribing on it rather than just being concerned about the effectiveness of the nurse-prescribing programme. In addition, I became more aware of prescribing not just being examined in terms of competencies but in addition the issues of power and control throughout the health service. Rather than just filling a gap in a rota, prescribing was changing the therapeutic relationship with the patient. I moved from a technical view of

prescribing to a broader systemic and holistic view (de Oliveira and Shoemaker 2006). My thinking had changed from seeing just the piece in the jigsaw to being able to see the entire picture it was a part of, which is a significant and vital shift for research.

It was important in terms of its implications for me as a practitioner researcher. The challenge I risk as a lecturer, is to lose touch with nurses/ midwives and just see them in them in context of my academic environment; however, the fieldwork allowed me to engage with professionals, recognizing the need to close the loop regularly. Evaluation of the programmes we teach requires us as educators to examine the impact of our programmes in the student's clinical environment, and that by examining the impact of the programme; we judge the effectiveness of our teaching, programme.

I started with quite an a-theoretical position; however, now I have become more interested in the theory in terms of the power within a system, but I still want to retain a very pragmatic view, in that prescribing is an accurate activity, which can determine the safety of patients in our health service. I also want to examine why is the study of pharmacology such an issue for nurses and midwives? Why are medical students more confident in pharmacology, given that they study it at the same level as nursing and midwifery students? Is it something about the automatic right they have to prescriptive authority that results in medical students and doctors feeling more confident about pharmacology?

Nurses and midwives are clear on roles in prescribing, dispensing, administering but there is less clarity on the role in monitoring. There is a medication management cycle, but is it only when nurses prescribe, are they more aware of it and the consequent risk of polypharmacy. There is an opportunity to improve education and practice in this area.

3.6 Conclusion

The development of this research project was for me akin to the metaphor of having a child. In the initial phase of planning, you decided what you would examine and were you capable of undertaking the research. In many ways, it is similar to planning to have a baby, the anxieties about whether you could be a parent. In the antenatal period you question what values and beliefs you want the child to have, this process of reflection challenges your own values and beliefs, in a similar way to your epistemological stance. You waver from your experience of being parented to new theories. Once the question and methodology were decided upon and ethical approval obtained, the fieldwork started and gained an enjoyable momentum of its own, similar to the momentum of a pregnancy once it starts, it hopefully continues for forty weeks, but you have little control over how it develops. The analysis and discussion of the research are like the labour and birth of the child, you work hard to create this thesis. Once finished you must send out your research into the world to disseminate its message, just as your child interacts with the world. The important aspect of the metaphor of the child is that, like creating a child who you influence and influences you as a parent, the research has been influenced by me in terms of the question being one I was interested in and how I have been influenced by the research process in terms of my thinking and academic abilities. My research will live independently in physical form and electronic form in Maynooth University Library, just in the same way as a parent I hope my child will become the independent person, capable of finding their place in life. This experience of working with this research has influenced me and hopefully my research will affect how nurse and midwife prescribing is perceived and continues to be implemented. Chapter four will deal with the methodology for the study.

Chapter Four Methodology

4.0 Introduction

The purpose of this study is to examine the confidence, accuracy, advice seeking and recognition of scope of practice of nurse/midwife prescribers through the administration of validated clinical scenarios and to examine the nurse/midwife prescribers' attitudes to their training and their perception of its impact on their clinical practice. It is timely to explore this question as the relative newness of this clinical development and its effectiveness requires investigation to ensure the safety of patients. The chapter will discuss the justification for the methodology chosen for the study over other methodologies. The chapter will also outline the development and validation of the clinical scenarios, the participant sample, the data collection methodology, the ethical considerations, and the data analysis.

The research was conducted in 2013, using semi structured interviews (n=28) and measuring participants' confidence, accuracy, who they seek prescribing advice from and working with their scope of practice of participants using validated paper based clinical scenarios developed specifically for this study. Participants were geographically spread throughout Ireland and comprised of two groups, one group were qualified nurse/midwife prescribers recruited through a random sample generated by the Nursing and Midwifery Board of Ireland and the second group were recruited through the HEIs. Pilot interviews were conducted, to test the research instruments and to gauge the length of time the interviews approximately. The data generated from the semi-structured interview was managed using Max QDA and analysed using conventional content analysis, thematic analysis and memos recorded after the interviews. The quantitative data was analysed using SPPS version 20.

4.1 Research Question and Aims of the Research

The change in prescribing practice in Ireland resulting from the introduction of nurses and midwives prescribing in 2007, the growing number of registered nurse/ midwife prescribers, and the high-risk nature of prescribing pointed to the fact that this was identified as an area requiring investigation. A clear research question was in the early stages harder to determine as described in the previous chapter 3, however eventually, two research questions were considered for this thesis, which were

1. The primary research question for this study was to examine the confidence, accuracy of nurse/midwife prescribers in Ireland, who they seek assistance from in making prescribing decisions and their recognition when they are working within their scope of practice.
2. The secondary research question examined the nurse/midwife prescribers' attitude to their training and their perception of its impact on their clinical practices.

There are multiple aspects to prescribing, that are of interest. For the purpose of this study the focus was on confidence, accuracy, advice seeking and working within scope of practice. The decision to examine these particular aspects of prescribing acknowledged that the resources were not available to permit large scale testing. It also gave an opportunity to interview participants in order to gain more of a qualitative understanding of their responses.

Once the research question was established, this permitted an examination of how the question could be answered with respect to the research design and methods. The author could then focus on what type of data was required to answer the research question and how was that data to be obtained.

4.2 Research Method

An exploratory research approach using concurrent mixed method design was undertaken to explore these questions (Hall 2020; Teddlie and Tashakkori 2009). Namely, to examine the confidence, accuracy of nurse/midwife prescribers in Ireland, who they seek assistance from in making prescribing decisions and their recognition of when they are working within their scope of practice, and to examine the nurse/midwife prescribers' attitude to their training and their perception of its impact on their clinical practices. Using a concurrent method permits expansion of a research question and allows extension of the breadth and depth of that enquiry (Hall 2020; Irvine *et al*. 2020; Green 2007; Green *et al.* 1989). As this research area is relatively new, this research is exploratory in approach. Exploratory research can be described as a method which can 'shed new light on manifestations of a phenomenon; identify factors causing phenomena; investigate the antecedents of phenomena; identify the effect of and the relationships between factors causing phenomena' (Hunter *et al.* 2019; Lash *et al*. 2011 p 40). The two strands of the study the quantitative and qualitative occurred simultaneously within one interview.

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4.3 Appropriateness of the research method

Two methods were utilized to conduct the research namely, the use of validated paper based clinical scenarios to test the nurse/midwife prescribers' confidence, accuracy, seeking advice and working within their scope of practice and a semi structured interview with the participants before and after the testing, to explore the opinions of participants of the prescribing programme. The clinical scenarios prompted the participant to make an assessment on the scenario and decide on a course of medication or how to progress the patient's care (see Appendix I).

Utilizing clinical scenarios with nurse and midwife prescribers partly replicates work completed previously by Sodha *et al.* (2002a), Sodha *et al.* (2002b) and Offredy (2008). The scoring system for the clinical scenarios for the study was the same as the one used in the aforementioned studies. The scoring system is outlined in Figure 4. 1

Numeric Score	Description of Score
3	A score of 3 indicated that the nurse had correctly identified all the issues and proposed a correct solution to the problem
2	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.
1	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.
0	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.

Figure 4.1 Scoring System for Clinical Scenarios taken from Sodha *et al.* (2002a,b)

4.4 Method

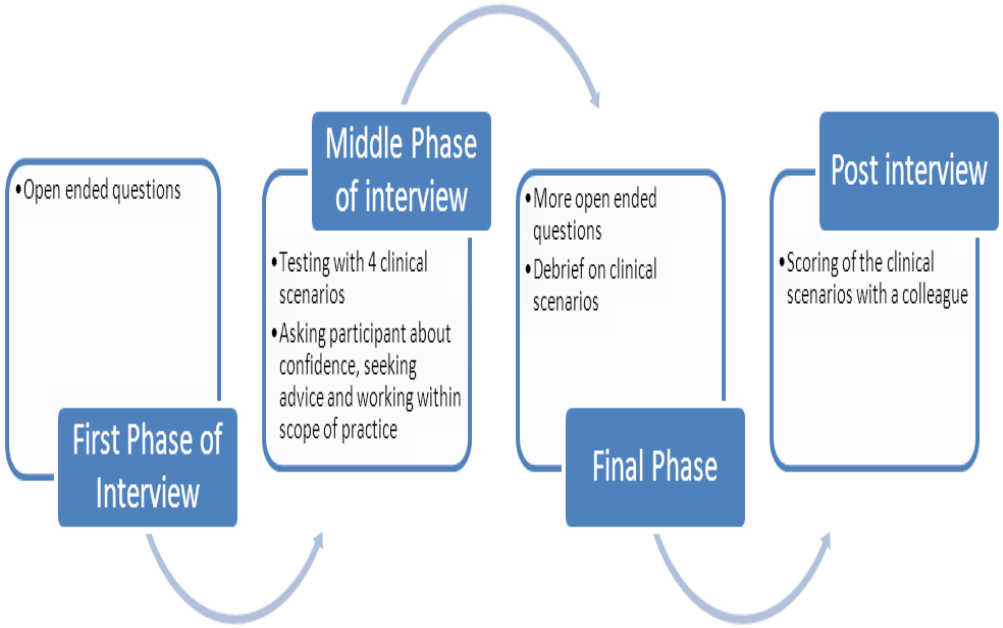


Figure 4.2 Process of conducting the interviews

Once nurses/midwives are qualified for a period of time they become competent in that clinical area and use more tacit knowledge to make decisions, sometimes in an automatic fashion, that is difficult to explain to another person (Thorne 2020; Carper 1978). Prescribing medicines and medicinal products is a cognitive process, which requires accurate precise actions, so therefore the methodology requires a tool that will measure accurate actions i.e. the correct diagnosis of the patient and the correct treatment of the patient. In order to measure this accurate action, the participants were asked to examine paper based clinical scenarios and determine the appropriate treatment the patient requires. This study did not propose evaluating the prescribing course in terms of how one

college versus another offer the course, the study merely attempted to discover if the overall learning outcomes and clinical competencies make the nurse/midwife prescriber fit for purpose.

Following an examination of the literature which revealed limited research from an Irish perspective, not surprisingly as this area of nursing and midwifery practice is relatively new to Ireland, having only being legalised in 2007 (An Bord Altranais 2007a) and this influenced the choice of a method which was innovative but challenging. The method was similar to the method used by Sodha *et al.* (2002a,b) and Offredy *et al*. (2009). Both studies used validated clinical scenarios to measure confidence and accuracy and the thinking processes involved in prescribing on paper based clinical scenarios. In both of these studies, the participants were qualified nurse prescribers. However, in one survey method was used and in the other interviews were utilised to administer the clinical scenarios. Both studies used the same clinical scenarios and the same scoring method.

Exploration of the research question could have been conducted by undertaking an observational study of nurse midwife prescribers as they dealt with prescribing decisions, however this would have been ethically difficult to proceed with involving access to clinical areas, patients and patients' records, also the patients would have been different in each case. The research could also have been conducted by examining patient records using a tool such as the medication appropriateness index (Hanlon and Schmader 2013). This would test for accuracy, however depending on how long ago the nurse/midwife prescriber made the prescribing decision their memory of the event may be limited and make confidence, advice seeking and working within their scope of practice difficult to assess. Again, additional difficulties of this method include the ethical challenges of accessing patient information and the differences in the patient cases. Finally, in the above-described approaches if errors in prescribing were discovered this would have implications for the nurse/midwife and patient concerned. In conducting the research, using clinical scenarios developed

specifically for this study ensures consistency with the clinical scenarios administered, and the researcher being present during the administration of the clinical scenarios controlled the conditions under which the scenarios were considered by the participants and avoided the ethical implications of utilizing real patients. As the research question necessitated both objective assessment and opinions, participants were therefore then interviewed. The type of research instrument is not in regular use, so the researcher, to fully understand how it works, administered the testing (see Appendix J and K).

This study was conducted on two groups (1) qualified and (2) candidate nurse/midwife prescribers. In addition to the administration of validated clinical scenarios, the interview afforded the researcher the opportunity to explore the participants' views on the programme. In order to understand the contribution of training and experience both qualified and candidate nurse/midwife prescribers were recruited. Finally, as one of the dimensions of the study was to explore the scope of practice in prescribing the qualified group were more likely to be from specialist groups of nurses/midwives, as this was the group that initially undertook the prescribing programme, as the numbers have increased more nurses/midwives from non-specialist groups have undertaken the programme.

Initially a large-scale survey had been considered, however the ability to control the conditions under which the survey might be completed may have been difficult and the costs and time to undertake a large-scale study would have been prohibitive.

The study was conducted by interviewing two different groups of nurse/midwife prescribers; one group was qualified nurse/midwife prescribers and had been prescribing medicines and medicinal products to patients. The second were a group of nurses and midwives undertaking the nurse-prescribing programme and they were interviewed towards the end of the nurse-prescribing programme. All the participants were asked about how well the nurse-prescribing course

prepared them for their role as a nurse/midwife prescriber. During the course of the interview, they all had their confidence, accuracy, advice seeking and working within their scope of practice tested through the utilization of paper based clinical scenarios developed by nurse/midwife prescribers and validated by a panel of experts. Each participant was asked to examine four clinical scenarios, two scenarios directly relevant to their area of clinical expertise and two from an area not directly related to their area of practice. In terms of the qualified group of nurse/midwife prescribers the interviews hoped to establish whether the interval since qualification was associated with a change in practice.

A Likert rating scale (Kent 2015) was utilised in order for all the participants to rate their confidence in their responses to the paper based clinical scenarios. At the conclusion of each interview, the participant was informed if they were correct with their assessment of the scenarios.

4.5 Clinical Scenarios

Testing confidence, accuracy, advice seeking and working within scope of practice can be difficult with real patients and potential consequences for the patients if mistakes are made. Paper based clinical scenarios offer a safe method to test without the immediate risks to patients or the practitioners in terms of professional misconduct. An important feature of paper based clinical scenarios is while the practitioner is only getting part of the presentation of the patient, the scenario must be realistic enough in order for the practitioner to be able to answer and attempt to replicate the real-life decision that a nurse/midwife may choose. One of the advantages of using clinical scenarios in either a learning or research environment is cost effectiveness (Brauer *et al.* 2009) and safety (Overby *et al.* 2015). This research into nurse/midwife prescribing using real patients would have been impractical; as a consequence, the development of the paper based clinical scenarios was a practical and ethical alternative.

While all the clinical scenarios developed for this study are (see Appendix I), an example of one all of the participants were administered is presented here;

> *A 45 year old woman with Down Syndrome and moderate degree of intellectual disability (ID) is accompanied to a clinic by her carer. Over recent months the carer describes odd behaviours such as the service user puts clean clothes in laundry bin, tea bags in the fridge and on occasion has dressed for work on a Sunday morning. Presently the service user is prescribed Eltroxin for hypothyroidism.*

As a nurse prescriber how would you proceed?

Throughout the study this was the clinical scenario which was used with every participant. This scenario is typical of the presentation a nurse from the Intellectual Disability services would be familiar with from practice.

Clinical scenarios can move the student through the 'doing' of care to the 'thinking' of care and how that care affects others (Girot 1995). Using clinical scenarios that students can identify with make them and think about the scenario and what action are they going to take (Bradley *et al.* 2010). Bradley *et al.* (2010) concludes in their study that case studies can encourage reflection and critical thinking. Among the many competencies the nurse and midwife prescriber must achieve is the ability to reflect and critically think (An Bord Altranais 2007b).

Regehr *et al*. (2010) used clinical scenarios to test risk assessment methods in social workers using actors in the case scenarios, they assessed social workers' confidence and judgment in making decisions about the scenarios based on assessment tools, they found while the scenarios were presented in exactly the same way the assessment tools were utilised differently. Prescribing on the other

hand is quite an exact science due to the action of the prescribed agent on the patient.

There are two types of clinical scenarios, storytelling method and factorial method (Brauer *et al.* 2009). The story telling method is usually contrived from the experience of a practitioner. The factorial method is based on a vignette developed with a number of predetermined factors, which can be selected or deselected depending on the operator; it increases the complexity of the vignette as opposed to the more illustrative story telling method, which can therefore be open to bias in their development.

Gratton (1996) found from his research into undergraduate radiography students that case studies could be successfully used to assist students' learning as well as assess that learning, however Gratton does argue that the validity of the method as an assessment tool could not be ensured. Wright and Neill (2001) in their study found that in using clinical scenarios they were able to explore the reasoning of advanced nurse practitioners in prescribing antibiotics. Waxman (2010) describes how to develop clinical scenarios for undergraduate students which can improve their knowledge psychomotor skills and critical thinking abilities. The study outlines the methodology used by the collaboration of several Nursing Schools in the Bay area of San Francisco to develop evidence based, safety focused, relevant scenarios. The commonest flaw Waxman (2010) argues is in relation to the lack of or unclear learning outcomes for the scenarios and the need to base the learning outcomes on the competencies need by the students once in clinical practice. Crannell (2012), in her article about maintaining the competence of nurses who administer chemotherapy, she proposes clinical scenarios as a method for assessing those nurses in the various competencies they require. Hansen *et al.* (2011) found in their study of (n=83) nurses working in an out of hours casualty clinics in Norway, where the nurses triaged patients over the phone, that using clinical scenarios to test the competence of the nurses was a valid method. In their study, Worster *et al*.

(2007) found that using live case scenarios versus paper-based case scenario showed no significant differences in a study they undertook, using case studies for Triaging patients in an Accident and Emergency Nurse Setting. The methodology used was multicentre, prospective, observational cohort, that was randomly selected over a four-month period. Cross *et al.* (2011) conducted a study using an online survey; the physical therapists were invited to participate in the study by assessment via case scenarios. The number of physical therapists invited to participate was over five thousand, however less than (n=500) participated and of that only 379 or 7.5% were appropriate for analysis. The low numbers were accounted for by the fact only 411 had a valid email address. This might suggest that the Sports Physical Therapy Section of The American Physical Therapy Association, had incomplete information on their members and possibly the research team had no other method of contacting the physical therapist, or the online case scenarios were not suitable for a paper-based exercise (Cross *et al.* 2011). Furthermore, the cost incurred by the research team would have increased by using a paper-based method.

Offredy *et al.* (2009) examined how and why nurses prescribed medication using clinical scenarios and the data was analysed using the Cognitive Continuum Theory. This study used participants who were qualified nurse prescribers and nurses undertaking the prescribing course in the UK. Purposeful sampling was selected, and the methods used were the case scenarios and interviewing. This is an unusual study as it tests the pharmacological knowledge of the nurse prescribers. Some of the participants were not able to identify the issues in the scenarios. However, Offredy *et al*. (2009) did suggest observing the participants at work, but this was deemed to be difficult as it may have compromised the participant confidentiality. This study used case scenarios developed for another study by Sodha *et al.* (2002a) and Sodha *et al*. (2002b), and the case scenarios were validated by a panel of experts prior to their use to assess their appropriateness. Cox *et al.* (2010) used validated clinical scenarios to measure the utility of commonly available resources for prescribing in the UK. They found

by using clinical scenarios that the commonly available resources such as the British National Formulary (BNF) did not provide sufficient support to practitioners in making prescribing decisions.

Hagadorn *et al.* (2011) tested the efficacy of diuretic use in Very Low Birth Weight Neonates (VLBWN) through administration of paper based clinical scenarios and found that the evidence for using diuretic in (VLBWN) was insufficient however the practice was widely established in spite of the paucity of evidence.

In a number of medical studies the use of paper scenarios versus real patients, have been shown to be a valid method of assessing clinical judgment (Kirkman *et al.* 2013; Park *et al.* 2013; Wilson *et al.* 2008; Kirwan *et al*. 1983), which examined doctors and their clinical decision making in rheumatoid arthritis and prostate cancer patients.

The above studies confirm that utilizing the paper based clinical scenarios as a reliable method for testing knowledge and as a consequence clinical judgment.

In order to develop the clinical scenarios, the author analysed the report generated by the HSE on prescribing activity, to identify the clinical areas where nurses/midwives were prescribing. Based on the ONMSD annual reports (HSE 2013), which indicated there were 70 distinct clinical areas, where there was nurse/midwife prescribing activity, the scenarios were developed. However, the development of clinical scenarios for each of the areas would be an enormous amount of work, also some of the clinical areas had only one or two nurses/midwives prescribing in it and the sampling method may not have included these practitioners. Consequently, 10 clinical areas were selected based on at least 20 nurse/midwife prescribers being active in those clinical areas in 2013. The clinical areas were,

1. Mental health

2. Paediatrics
3. General Practice
4. Midwifery
5. Emergency Nursing
6. Older Person Care
7. Intellectual Disabilities
8. Diabetes Care
9. Pain Management
10. Oncology Nursing

Qualified nurse/midwife prescribers in practice undertook the development of the clinical scenarios. Guidance was given to all the developers on the writing of the clinical scenarios using the examples of the scenarios developed by Sodha *et al.* (2002a) and requesting that the scenarios have cues the nurse/midwife needed to identify. The process to develop the scenarios took about four weeks with four clinical scenarios being developed from each area. Initially, the reason to develop four scenarios from each area was based on the intention to interview candidate nurse/midwife prescribers undertaking the prescribing programme at the beginning and the end of the programme. If only two clinical scenarios were developed, the candidates would be exposed to the scenario twice, however as the research project progressed, limited access to the candidates resulted in the interview being conducted towards the end of the programme.

Once the clinical scenarios were developed, they were then examined by a panel of experts including, a nurse/midwife prescriber, a pharmacist, and a number of medical doctors for accuracy and to validate the scenarios. During the process of validation, a number of small adjustments were completed, and one scenario was deemed to be unsuitable and was removed from the suite as it was felt it was not typical for that clinical area.

One of the unforeseen consequences of the development of the clinical scenarios was that, while the scenarios were developed with particular clinical areas in mind, some of the scenarios could be used in some of the more specialist clinical areas which nurses/midwives were practicing. For example, one of the scenarios developed for the older person clinical setting, also was suitable for prescribers in the area of cardiac nursing. This unforeseen consequence ensured that the scenarios could be used in a variety of clinical settings.

During the preparation for the fieldwork an interview pack for each participant was assembled, and in so far as was possible the same clinical scenarios were contained in the pack for participants from the same clinical areas. As a consequence, testing the nurses'/midwives' knowledge from outside of their core area, also used the same scenarios, hence the scenario given above clinical scenario 13, was used in every interview conducted.

While the majority of the effort in developing the study was concentrated on the development of the clinical scenarios, the method for testing and gathering the data for the study was through interview.

4.6 Interviews

The interview is one of the frequently used methods for gathering data from research participants (Hennink *et al.* 2020; Kumar 2018). A concise definition offered by Burns and Grove (2005) is: 'interviews involve verbal communication between the researcher and the subject, during which information is provided to the researcher' (Burns and Grove 2005, p.420). While this study scored the responses of participants to the validated clinical scenarios numerically, the researcher wanted to explore the impact of prescribing on clinical practice and this change is sensitive and involves professional practice.

There is a spectrum of options for conducting interviews; Patton (2002) distinguishes several forms of interview: 1, unstructured more like a conversation 2, semi-structured with an interview guide and finally 3, structured where the sequencing and questions are determined in advance. The structured interview employs methods that effect control over the content of the interview by the researcher, while the unstructured interview is quite free flowing and used in descriptive and qualitative studies (Patton 2002). Patton (2002) also describes a fourth and less commonly used interview technique, the closed fixed response interview in which the responses and questions have been pre-determined. However, for the purpose of this discussion the first 3 types of interview described by Patton (2002) are more qualitative in nature than the fourth type. This designation of the unstructured, semi structured and structured interview is generally used in the literature (Hennink *et al.* 2020; Newcomer *et al.* 2015; Denzin and Lincoln 2011; DiCicco-Bloom and Crabtree 2006).

This study utilized the semi-structured type of interview. That is, there were some guiding questions to make sure that the same issues were raised with all respondents, but then respondents were allowed to develop these, and to introduce new ideas. When new ideas were introduced, they were followed up. Clearly all types of interviews have their uses; the more structured are required when there is a large sample, and a quantitative analysis, and therefore the priority is consistency. The more open types of interviews are more appropriate when there is a small sample, when the analysis can allow for unanticipated answers (as in qualitative work) and where the questions are seeking to probe complex issues. The use of the semi structured interviews, permitted the researcher to draw all the information about the responses to the clinical scenarios and how prescribing had changed the participants practice together and, in some cases, to make sense of the responses of the participants and contextualize them.

In addition, another aspect of the qualitative interview is its individual in-depth nature. The forced nature of this brief encounter, unlike in ethnography where

rapport is built up over months and years, challenges the interviewer to develop that rapport quickly with the interviewee to ask questions (DiCicco-Bloom and Crabtree 2006). It is well recognized that rapport develops in phases (Spradley 1979) including apprehension, exploration, co-operation and participation. Developing rapport also serves a useful method for establishing trust and respect for the interviewee and creating a safe and comfortable environment where the interviewee can answer the questions and share experiences (Hennink *et al.* 2020, DiCicco-Bloom and Crabtree 2006). Undoubtedly, the in-depth interview is a highly personal and perhaps intimate situation depending on the nature of the questions and the responses (Hennink *et al.* 2020; DiCicco-Bloom and Crabtree 2006). The highly personal nature of the interview process beholds upon the interviewer to adhere to ethical principles while undertaking the interview such that no harm come to the interviewee. Maintaining the anonymity of the interviewee is vital so that the person is not recognized through the study. To attempt to build rapport and place the participants at ease, the location of the interview and timing of the interview was entirely at the individual participants' discretion.

The different models of data collection were considered at this stage of this process and a combination of the information- extraction model and the share-understanding model were utilized (Antonesa et al. 2006). While the data collection method lends itself towards the information extraction model, in that standardized questions are administered in a particular sequence, the researcher develops a rapport to encourage responses, while maintaining distance from the participant and the researcher attempts not to express their own view. However, Antonesa et al. (2006) in their examination of data collection models, argue that this informational extraction model in isolation, while excellent in some studies, where the facts are required, but on occasion the questioning needs to move towards a shared-understanding model, which permits more clarity of the participants' understanding of an area rather than merely facts. Another critical aspect of this second data collection model is that the researcher has more of

an active role in the process permitting diversions in the questioning and facilitates analysis through a variety of qualitative perspectives (Antonesa et al. 2006).

The vast majority of interviews are carried out face to face, but more recently, there had been a trend towards telephone and online interviews. A number of studies have chosen to use telephone interviewing (Pieper 2011; Mitchell and Chaboyer 2010; Novick 2008). Peiper (2010) found using the telephone interview a more inexpensive and safer method, it allows the participant to decide on the location to call from, and she further posits that it may avoid the bias that a face-to-face interview can effect. Novik (2008) found that while telephone interviews were popular in conducting quantitative research, they were view as less favourable in qualitative research, due to the lack of context and nonverbal cues. While Mitchell and Chaboyer (2010) found that participants were more relaxed and were more likely to speak more openly about the research topic.

Sullivan (2012), Cater (2010) and Ayling and Mewse (2009) both use online interviewing in their studies and found that this medium was a very valuable in its own right and the advantages outweighed the disadvantages, however both also point to the low take up in this medium for interviewing as against the face-to-face interview. In the COVID-19 era researchers have been left with little option but to utilize the online option (Jones and Abdelfattah 2020) but this was not a consideration during the data collection period.

Briefly, these methods were considered, but the decision to interview face-to-face was taken and necessary due to testing of the participants with the paper-based scenarios. It would have been difficult to organize the administration of the clinical scenarios from a distance, in additional valuable nonverbal cues would be lost which supplements the understanding of the verbal responses.

Standardized interviews with open-ended question format, in a face-to-face environment were employed in this study; the highly structured component was obtaining the responses from the participants to the clinical scenarios and rating their responses in terms of their confidence and knowledge using a Likert scale. The semi-structured interview component, sought to understand how the participants make their decisions. The sequencing of the interview questions moved from broad topic areas and then to narrow and specific (Hannink *et al.* 2020; Burns and Grove 2005), however much thought and reading of the literature informed the development of the questions. Some of the questions required factual responses such as 'what was your motivation for undertaking the nurse/midwife prescribing programme', some required more opinion-based responses 'what parts of the programme were most beneficial' and finally a more closed question 'has the decision-making framework changed your decision making?'. The more factual questioning was at the start of the interview and the more opinion-based questions were then scattered through the remainder of the interview. Two of the opinion questions concerning what changes were needed to the programme and how the programme influenced or changed, their view on prescribing generated the most unintended responses about issues outside the programme. The open-ended questions were more fluid and permitted the researcher to examine issues which emerged that had not been anticipated.

In 2013, on average each interview took about fifty minutes to undertake, in various locations such as hotels, bars and clinical sites. The researcher was unfamiliar with some of the locations and therefore relied on the local knowledge of the participant to select an appropriate venue for the interview, with most of the participants asserting the view that the locations would be quiet at the time of the interview. All of the interviews with the exception of one took place during normal working hours, and this one took place during a night shift. Participants selected the locations and except for two interviews, they proceeded with no interruptions. The interruptions occurred as the participants who were in their

clinical site, had to respond to a colleague who needed to ask a question. The use of a digital recorder with the permission of the participants ensured the researcher could attend to the questions and responses without being unduly burdened by note taking. The locations were overall quiet, and both the researcher and the participant could hear each other.

Furthermore, to ensure the appropriateness of the interview, three pilot interviews were conducted and any adjustments to the questions were finalized prior to the execution of the interviews with the participants. This provision had been factored into the ethical approval and agreed (see Appendix L and M).

The questions for the interviews were based on exploration of the literature and were standard questions, which can be used to explore participants' views on an education programme. The sequencing of the questions was devised to relax the participant with the initial question and following on from this the questions were placed in logical sequence to elicit as much relevant data from the participants to answer the research question (see Appendix J).

Question One: What was your motivation for doing the programme?
This question was asked based on studies conducted by Scrafton *et al.'s* (2012) study and Kroezen *et al.* (2012)

Question Two: What parts of the programme have helped you prepare to become a nurse/midwife prescriber?
This question was influenced by the study conducted by Drennan *et al*. (2009)

Question Three: Has the course changed your practice and if so how?
A number of studies influenced this question Lockwood and Fealy (2008), Luker *et al.* (1997), Drennan *et al.* (2009), Roden *et al.* (2001), Otway (2001), Latter and Courtney (2004), Sodha *et al.* (2002a), Snowden and Martin (2010), Nursing and Midwifery Council NMC (2006), Bradley *et al*. (2007).

Question Four: How has the course changed your thinking or your thinking processes? The literature which guided this question was An Bord Altranais (2000a, 2007), Offredy *et al* (2009).

Question Five: How has the course changed your views on prescribing?
The studies which generated this question included Lockwood and Fealy (2008), Wedgewood (1995), Koefmann and Woods (1995), Snowden and Martin (2010).

Question 6: How has the decision-making framework from an Bord Altranais assisted your decision making or is it useful? The literature which guided this question was An Bord Altranais (2000a, 2007c)

Question 7: Do you think the nurse prescribing course prepares you for your role as a nurse prescriber? And if so/not, why? The study which influenced this question is Drennan *et al.* (2009).

Question 8: If there were changes to be made to the prescribing course what do you think they should be? The studies which influenced this question is Drennan *et al.* (2009), Otway (2001, 2002), Sodha *et al.* (2002a), Hemmingway and Davies (2005).

Question 9: What needs more emphasis? The studies which influenced this question is Drennan *et al.* (2009), Otway (2001, 2002), Sodha *et al*. (2002), Snowden and Martin (2010).

Question 10: Is there anything that needs to be included that not already part of the course and if so what? This question was influenced by Drennan *et al.* (2009).

The key studies which influenced the areas examined in the quantitative component,

How confident the participants were that they had the correct answer; Drennan *et al*. (2009), Sodha et al (2002), Lockwood and Fealy (2008)

How the participant would proceed in the real-world; An Bord Altranais (2000a, 2007c), Luker et al (1997), Otway (2001, 2002), Latter and Courtney(2004), Nursing and Midwifery Council NMC (2006) and Bradley *et al.* (2007).

Who they would seek advice from; Drennan et al (2009), Stenner *et al.* (2009)

The scoring of the clinical scenarios was developed by Sodha *et al*. (2002a).

4.7 Proposed population and sample

Currently in Ireland, there are just over 1800 nurses or midwives who have undertaken the prescribing course in Ireland. The prescribing courses commenced initially in April 2007, in only two Higher Educational Institutions, namely the Royal College of Surgeons in Ireland located in Dublin and University College Cork. There are, as of March 2021, over 1700 hundred registered nurse/midwife prescribers in both public and private health care settings, the first of which was registered in January 2008 (as stated in an email from Anne-Marie Ryan on the 29th of March 2021). At this point, it is imperative to point out, that all the nurses and midwives who undertake the prescribing programme are already qualified nurses and midwives. However, while undertaking the prescribing programme are considered candidate nurse prescribers and those that successfully complete the programme and become registered as nurse/midwife prescriber are known as registered nurse/midwife prescribers (RNP/RMP). However, they will not be a registered nurse prescriber until, they have had their collaborative practice agreement (CPA) accepted by the Drugs and therapeutic Committee (DTC) in their service and the completion of the registration form by both the relevant nurse manager, usually the Director of

nursing/midwifery and the Head of School in the Higher Education Institution (HEI) in which the nurse-prescribing programme has been undertaken.

Unlike other professions, when an individual undertakes a registration nursing/ midwifery course in Ireland, the Nursing and Midwifery Board of Ireland places the student's name on a candidate register which is open to the public. Once the student successfully completed their degree, the student applies to the Nursing and Midwifery Board of Ireland to become fully registered in the division of the register their degree reflects. In addition, subsequently if the nurse or midwife undertakes particular programmes of study, they are again put on a candidate register for the duration of the programme; the prescribing programme is an example of this type of course. For the purposes of this study, the two groups are both qualified nurses/midwives, but one group are already registered as prescribers i.e. RNP and the other are candidate prescribers i.e. in preparation to prescribe.

The study was conducted by interviewing two different groups of nurse/midwife prescribers; one group was 14 registered nurse/midwife prescribers and were prescribing medicines and medicinal products to patients, The second was 14 candidate nurses and midwives undertaking the nurse prescribing course and they were interviewed towards the end of the nurse prescribing course. Taking the two groups together there were 28 interviews conducted for the study. The bulk of the study data was qualitative data from the 28 interviews.

While it is recommended to continue to sample until data saturation is achieved (Polit and Beck 2010), Morse (1991) and Teddlie and Tashakkori (2009), Hennink *et al.* (2020) would argue where the research question is focused or narrow as in this case, less participants are required. While there is a mix of qualitative and quantitative methods within the interview situation, the number of interviews which was undertaken 28 was taken with consideration to what is practical (Hall 2020: Teddlie and Tashakkori, 2009).

Excluding the registered nurse/midwife prescribers who have developed the clinical scenarios and registered nurse/midwife prescribers who attended

University College Dublin for their course, where the author coordinated the nurse/midwife prescribing courses the total registered population was just over 400 registered nurse/midwife prescribers at that time. The volunteer sample of 45 was randomly selected excluding the above people by NMBI, and 45 registered prescribers were invited to participate in the study (Polit and Beck 2010). From this 45 people the first 14 who people to agree to the invitation were interviewed. One additional nurse prescriber made contact but did so only to say they would have taken part in the study, but they were not in practice at that time, therefore they were declining the invitation.

A number of Higher Educational Institutions were approached to access nurses/midwives about to start the nurse/midwife prescribing course. The course coordinator in each college distributed letters of invitation to the study. Only the researcher knows the identity of the Higher Educational Institutions and the institutions will not be identified in the research. All of these Higher Educational Institutions offer a nurse/midwife prescribing course, which comply with the requirements and standards determined by NMBI (NMBI 2015b).

While there was quantitative data obtained from the interviews in terms of the number of interviews approximately 28 in total, however each participant was asked about 4 scenarios, so data concerning 4x28 clinical scenarios was generated giving 112 responses to the clinical scenarios. This number of responses did allow statistical analysis to give the study enough statistical power to address the research question.

All participants were asked about their confidence, seeking advice and working within the scope of practice in relation to the validated clinical scenarios and their views on the prescribing programme. All the participants were asked to rate their confidence in their assessment of the paper based clinical scenarios. Each participant was asked to examine 4 clinical scenarios, 2 scenarios directly relevant to their area of clinical expertise and two from another area. In terms of the registered group of nurse and midwife prescribers the interviews hoped

to establish if, once registered as nurse prescribers for a period of time how does this passage of time effect their confidence in their ability to prescribe and their knowledge.

A Likert rating scale was utilized in order for all the participants to rate their confidence in their responses to the paper based clinical scenarios. Additionally, they were asked who they would seek advice from in relation to the scenarios and how they would proceed in the real-world in order to judge the limitations of their scope of practice. At the conclusion of each interview, the participant was informed if they were correct with their assessment of the scenarios.

The size of the candidate sample was approximately 70 and recruitment of these candidate prescribers was through the programme coordinators in various HEIs providing the programme. Ultimately 15 candidate prescribers were recruited to the study, but due to clinical commitments at the last minute, one of these participants was unable to take part.

In examining the National Report on Nurse and Midwife Medicinal Product Prescribing from the HSE (ONMSD 2013), it was evident that they were a significant number of clinical settings in which registered nurse/midwife prescribers are practicing. While the development of clinical scenarios was wholly influenced by these clinical settings, the recruitment of the registered nurse/midwife prescribers was achieved through the extraction of random registered nurse/midwife prescribers from the prescriber's register. It was hoped initially to try and recruit a proportion of RNP from the public sector and a proportion from the private sector and a proportion from each of the main registers, i.e. midwifery, psychiatric nurses etc. However, that would have involved inviting all the nurses and midwives on the register to participate in the study and would have been expensive for the author. It is questionable what would have been discovered if a stratified sampling had been used. The author was previously involved in a study which used stratified sampling (Fealy *et al.* 2009) the study was seeking the opinions of nurses/midwives and stakeholders

on the retention of the five points of entry to nursing. The stratified sampling eventually surveyed over eight thousand nurses and midwives from a population of sixty thousand nurses and midwives.

The random sampling did not permit control over the location from where the participants where based. One concern was that while cluster sampling could have controlled for location, this would limit which HEI the participants attended, for example if only the Dublin area was used this may have significantly affected the responses from the participants, bearing in mind it was not one of the objectives of the study to compare one HEI against another. The resulting randomness of the location of the participants, resulted in interviews being conducted in all four provinces and in eight counties.

4.8 Criteria for inclusion of the candidate nurse prescribers

1. To avoid bias the researcher did not know the students asked to participate and the students do not know the researcher. If the students were familiar to the researcher there could be a bias either in favour of or against the results. In order to avoid bias the author approach Higher Educational Institutions she had never worked in.
2. All persons had to be able to communicate in English in order to understand the questions.
3. All persons had to consent to participate in the study, as this is considered ethically correct.
4. All persons had to be undertaking a nurse-prescribing programme.

4.9 Criteria for the inclusion of registered nurse prescribers.

The registered Nurse Prescribers were recruited through the Nursing and Midwifery Board of Ireland the regulatory body for nurses and midwives in

Ireland. As part of the function of this regulatory body, they maintain live registers for all nurses and midwives and can generate samples for researcher in this case the researcher requesting a random sample based on the nurse prescribers' register. Some of the variables, which were used to select the sample, were

1. That the nurse prescriber had not undertaken the prescribing course that the researcher coordinates to reduce bias.
2. That the nurse and midwives who have participated in the development and review of the clinical scenarios were excluded from the sample.

4.10 Ethical Considerations

The ethical guidelines which have informed this study were developed by the Nursing and Midwifery Board of Ireland (NMBI 2015d) (see Appendix N). How this guide is different from other ethical guidance documents is that it is specifically targets nurses and midwives who are undertaking a number of research activities including; those reviewing research; those involved in ethics committees and those supervising students undertaking research. The ethics guide includes the Professional Conduct for Nurses and Midwives (NMBI 2014) which also guide the professional behaviour of any registered nurses and midwives in Ireland. It is pertinent to note that a new version of the code of conduct was commenced in 2015, partly due to changes in legislation Nurses and Midwives Act (Nurses and Midwives Act 2011), as a response to increase in Fitness to Practise complaints and as a consequence of the use of the internet. This new guide provides appropriate use of the internet, which may impact research which recruits through the internet or uses online questionnaires (NMBI 2015d).

Central to the NMBI ethics in research guide is respect for persons/autonomy, beneficence and non-maleficence, justice, veracity, fidelity and confidentiality.

There are three primary ethical principles, which guide the ethical conduct in research according to Polit and Hungler (2001). These are beneficence, respect for human dignity and justice (Hennink *et al.* 2020; Polit and Hungler, 2001). The clinical setting in which the nurse prescribers practiced and the Higher Educational Institutions in which the nurse prescribers undertook their prescribing course were not identified. All participants were requested to give their consent to the study in writing. All participants were free to withdraw from the study at any stage. The author's intention to publish research findings on completion of the study was made known to the participants. The design of the instrument contains no means by which the subjects could be identified. Each participant was issued with a code number to maintain anonymity.

The research was undertaken in a manner to uphold the rights afforded to research participants and adhered strictly to the conditions under which ethical approval was granted.

Permission was sought and obtained to conduct the study from Maynooth University Ethics Committee, however the researcher was aware that other Educational Institutions may not accept this approval and required the researcher to obtain permission from the institution directly. A number of HEIs were approached where the nurse prescribing programme was offered. There was differing processes to engage in to obtain ethical approval from the HEIs. Some were satisfied with being presented with a copy of the ethical approval from NUI Maynooth, and then for contact to be made with the academic coordinator for the programme or the head of School. One HEI required a full ethical review from their ethics committee. Following a lengthy engagement with this ethics committee, ethical approval was obtained. However, when the author contacted the academic coordinator, the lengthy delay in getting the approval had resulted

in new additional requirements which required another review by the ethics committee, at that point the author was engaged in field work and was confident that sufficient candidate prescribers could be sought elsewhere. No confirmation of ethical approval was received by the time that fieldwork was ongoing therefore this HEI could not be included in the candidate sample. In hindsight if the researcher had realised, that it would have been difficult to obtain ethical approval from this HEI, then the candidate sample would have applied for through the NMBI and accessed all the candidate prescribers through the candidate nurse prescriber register. Nevertheless, the downside of recruiting the candidates from this register would have possibly affected the ability to inform the academic programme coordinators if there had been any significant knowledge deficits in the candidates. The data obtained through the testing the participants using clinical scenarios and interviews, the audio and transcription of the interviews remains in the possession of the researcher under the conditions set out by the ethics committees and in line with the guidance from Maynooth University.

In addition, at the end of each interview the researcher informed the nurse prescriber if they have been correct or not in their decision making with respect of the clinical scenarios. Failure not to point out errors would be unethical. The research was conducted with a duty of care, to the participants, however the participants are also practicing with patients who are entitled to be protected, and thus the rationale for recommending re training was built into the research protocol. It would be remiss of the research process not to actively improve erroneous practice. For the candidate prescribers' cohort, the research protocol had incorporated without disclosing the identity of the candidate prescriber, to identify for the academic coordinator any areas of error for re-examination, lastly while the student prescribers are candidates the determination of competence or not was decided by the Higher Education Institution after my interaction with them.

4.11 Pilot Study

As part of the research process, a brief pilot study was conducted, which had a number of intended outcomes. Charlesworth *et al.* (2020), Doody and Doody (2015), Secomb and Smith (2011) and Reed *et al.* (2007) considered the pilot study to be a crucial element of research to identify any challenges or difficulties with the methodology or processes prior to the main study commencing. Many published studies fail to report on the pilot phase of the study and yet Charlesworth *et al.* (2020) and van Teijlingen *et al*. (2001), discuss the important lessons than can be learnt through the testing of instruments or methodologies. As this study was utilizing a number of different methods including a number of tools to record the data, it was essential for the researcher to test the process for using and completing the instruments. Neither (Sodha et al. 2002a) or (Offredy et al. 2008) on which this study method is largely based on, mention if they completed a pilot study.

For this study, the pilot study was conducted using three nurse prescribers who, had recently completed the nurse prescribing programme in Ireland. Ethical approval was sought and granted, with the participants being made aware that participation was voluntary and that the data recorded would be used only to inform the process, rather than be utilized in the main study.

Three pilot interviews were conducted, with the purpose of testing the instrument, the questions, understanding of the questions, the timing of the interview and the researcher's ability to execute the interview. The function of the initial interview was to test the questions used. The preparation for the interview involved examining the questions over and over again to establish whether they would elicit useful information and also to examine the construction of the questions, attempting to use open ended questions and then selective closed questions to clarify points and focus the participants' responses.

The initial interview confirmed that some of the questions required reworking, in terms of how they were stated to improve their understanding and the type of useful information they would elicit. The presentation of clinical scenarios to the participant when administered was awkward and needed to be more seamless right through from asking open ended questions to switching to the scenarios and then concluding the interview with further open-ended questions. Furthermore, the decision to only reveal the correct responses to the clinical scenarios once all the scenarios had been administered was deemed to be correct. Neither (Sodha et al. 2002a) or (Offredy et al. 2008) describe how they debriefed the participants of their studies once the scenarios had been administered.

The first pilot participant, stated that the scenarios were very real to what she experienced in practice, and that she was quite familiar with the medications. Three scenarios were presented, two from the participant's area of clinical practice and one outside their practice area. After the pilot and in discussion with the supervisor it was felt that four scenarios would be used, two from the practice area of the participant and two from outside and that would permit a more robust conclusion to be drawn about all the participants' knowledge and confidence in their practice area versus outside their practice area.

One of the findings from the Offredy *et al.* (2008) study was that nurse prescribers were less confident about prescribing outside the practice area and this is a sensible and expected finding, however it also pointed to the need for nurse prescribers to have better knowledge of a wider range of medicines. Anecdotally, through the researcher's experience of conducting clinical site visits, nurse prescribers would state that they didn't need to know about drugs outside their area of practice, for example in Midwifery they believed that their learning during the course, should concentrate on the commonly prescribed medicines to pregnant women. However, one of the learning outcomes of the course was to have a systematic knowledge of medicines (NMBI 2015b). When challenged about this perceived narrow view, which medicines a nurse prescriber

should know, citing the evidence that pregnancies are becoming more complicated in terms of older mothers and mothers with pre-existing pathologies, the response was these were the exception rather than the rule. Finally, the first interview gave the researcher an approximate time for completion, which then informed the construction of the letter with the study information for participants as a more accurate time could be stated.

The second and third pilot interviews were conducted to again test the instruments, the questions and the timing of the interview which informed the participant information leaflet (see Appendix O). In the second interview to improve the administration of the clinical scenarios, a computer was utilised so that the participant could read from the screen. However, on reflection it was felt that it may not be practical to continue to use the computer in the different setting where the interview will take place. In addition, there has been a huge amount of debate about the preferences of people to read on screen versus paper. In their study Holzinger *et al*. (2011) found that with the use of flat screen technologies screen reading was no longer less accurate than paper reading; however, 90% of their (n=111) health care professionals in their study participant preferred reading from paper. As a result of reading this study, in which they reviewed much of the significant literature on the paper versus screen reading, the researcher decided to administer the clinical scenarios on paper, rather than presenting them on a computer screen.

Lastly, the sheet where the participant would record their response would have the scenario at the top of the sheet and then lots of space to write up the response. Advantages of this would be, rather than having to record separately which clinical scenario was administered, the clinical scenario would be on the same sheet as the response and finally, it would lessen the chances of the researcher leaving the sheets with the clinical scenarios with the participants once the interview was concluded, potentially compromising the confidentiality of the scenarios.

Similarly, the decision to use a Verdana font for all the instruments was based on studies on the readability of the different fonts with Verdana being one of the easiest to read (Bigelow 2019; Bernard *et al*. 2001).

By the third pilot interview, the researcher had become comfortable with completing the instrument and asking the questions. Once again, the pilot participants commented on the clinical scenarios as being typical situations they would come across in their area of practice, and how the clinical scenarios outside their area of practice while they were not familiar with the clinical situations, they had knowledge about the medicines so felt they could make a judgment with some certainty. Having completed the three pilot interviews, the researcher then undertook the main study.

4.12 Reliability and Validity

The importance of testing research instruments for reliability and validity cannot be overestimated (Hall 2020; Polit and Hungler, 2001). Reliability refers to "… the consistency of measure obtained" (Burns and Grove, 2005 Pg. 327). The consistency is employed in terms of time, data collectors and individual responses (Burns and Grove, 2005). Reliability testing concentrates on three aspects of reliability. These aspects are concerned with the stability of the questions, the equivalence of the questions and the homogeneity of the questions. In this study while the numbers of participants make it difficult to test for reliability, notwithstanding that as many of the same clinical scenarios were administered to the participants as possible, in the case of clinical scenario all participants were administered, this scenario and an analysis of all answers are presented (see Appendix P). In respect of the semi structured interviews the same areas were explored in each interview.

The validity of a research instrument is its ability to measure or describe what it sets out to measure or describe (Hall 2020; Polit and Hungler, 2001). Validity may consist of four aspects: statistical conclusion validity, internal validity, construct validity and external validity (Hall 2020; Burns and Grove 2005). Construct validity looks at the fit between conceptual definition and operational definition of variables (Hall 2020,
Burns and Grove 2005). The clinical scenarios validated by prescribing experts, which were developed by registered nurse/midwife prescribers similar to the type of clinical scenarios developed by Sodha et al (2002a). Once all the interviews were conducted, the author completed the scoring of the scenarios with a colleague. To maintain confidentiality, the colleague only knew the clinical area the participant had come from and the scoring was completed together. There was consensus on the scores.

4.13 Collection of the data

Collection of the data took place over seven months in eight counties in Ireland, within a variety of clinical settings including acute hospital care, continuing care, community, public and private settings. The data was gathered through semi structured interviews and administration of the clinical scenarios. Four clinical scenarios were administered during each interview, two from the person's core area of clinical practice and two from outside that area of clinical practice. In so far as was possible the same clinical scenarios were used for participants from the same clinical area for example the same two mental health scenarios were used with all the psychiatric nurses and so on. In this way, the author while having 40 clinical scenarios to choose from, wanted to try and use the same clinical scenarios, in order to attempt to draw some inference from how different participants dealt with the same clinical scenarios.

4.14 Analysis of the Data

The data from the clinical scenarios was analyzed using a quantitative approach, while content analysis was utilized to analyze the qualitative data generated by the semi-structured interviews. Content analysis can be defined as 'a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns' (Hsieh and Shannon 2005, p. 1278). Once the interviews were transcribed, the responses were analyzed into themes, with quotes chosen to represent these themes and also quantification of themes occurred. This approach has elements of both content and thematic analysis.

The interviews were recorded on two digital recorders. The pilot interviews were transcribed by the author. However due to the time pressures the twenty-eight study interviews were transcribed by a commercial company, who offered a secure and confidential service. Following each interview, the author took time to make notes on each interview and anything significant that was mentioned was noted and the interviews were listened to immediately after they have taken place, taking note of the pauses, tone, inflection and of course the content of the interviews. The qualitative data was coded using software called MAX QDA and the data from the clinical scenarios was analyzed using SPSS (Pallatant 2010).

The researcher read and reread the transcripts before uploading them to MAX QDA software package. Once in the software package, the researcher could go through each interview line by line to identify the content and then form codes using thematic analysis. The coding was devised after all the interviews were conducted and the transcriptions read, as a consequence there were no predetermined codes, and this was inductive analysis. The data from the interviews was analyzed using thematic analysis undergoing the convention of coding, concepts, categories and conclusions (Braun and Clarke 2006). The

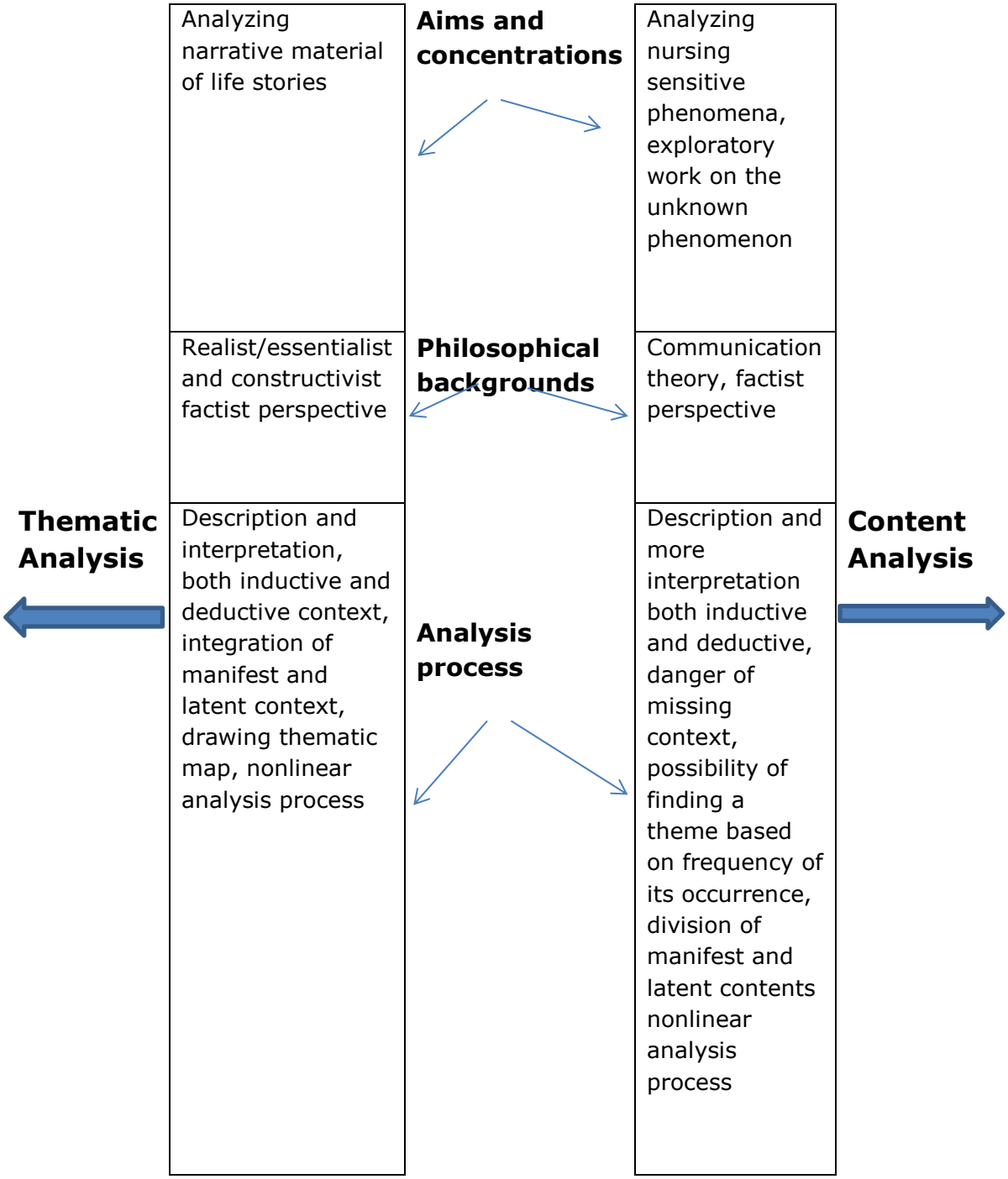
coding permitted to examine each line to seek single ideas for multiple ideas for each fragment of text. Once all the coding had been completed, the individual codes were examined to ascertain if there were similar concepts, which could then be classed as categories, then conclusions. If new codes were recognized in subsequent transcripts, the previously coded interviews were reexamined to ensure these codes were not overlooked in interviews. The coding was completed a number of times to ensure the same codes meant the same thing.

Content analysis fits well with nursing studies due to the sensitive and multifaceted nature of nursing phenomenon (Alavi 2015;Elo and Kyngäs 2008), and in this particular study it was ideal to deal with the large amount of qualitative data generated by the 28 interviews (Lewis *et al.* 2013). The primary aim of content analysis is to develop a description of a phenomenon and then to generate categories (Elo and Kyngäs 2008). However, it is a method not without its critics in terms of its perceived simplistic nature and the researcher cannot deduce anything beyond the text for examination (Morgan 1993; Kolbe and Burnet 1991). This scope of content analysis enabled me to identify critical processes for this research, such as the impact of nurse/midwife prescribing on the nurse/midwife's care to patients or the change in approach to how nurses/midwives view prescribing practices. It is an appropriate form of analysis in this study, due to the lack of hypothesizes and predetermined categories.

Content analysis is suitable in a mixed method study when attitudinal self-reporting in can be compared to content analysis findings (Kolbe and Burnet 1991) as is the case of this study where the participants are self-reporting on their confidence, advice seeking and working within their scope of practice.

There are discussions in the literature whether there are differences between content and thematic analysis (Vaismoradi *et al.* 2013). In their review of both methods of analysis Vaismoradi *et al.* (2013) assert the view that there are similarities in the process of analysis of both and that the confusion between both methods is normally due to interchangeable definitions of content analysis

and thematic analysis. See below for similarities and differences between both forms of analysis and the differences in the steps used in the analysis of the two methods



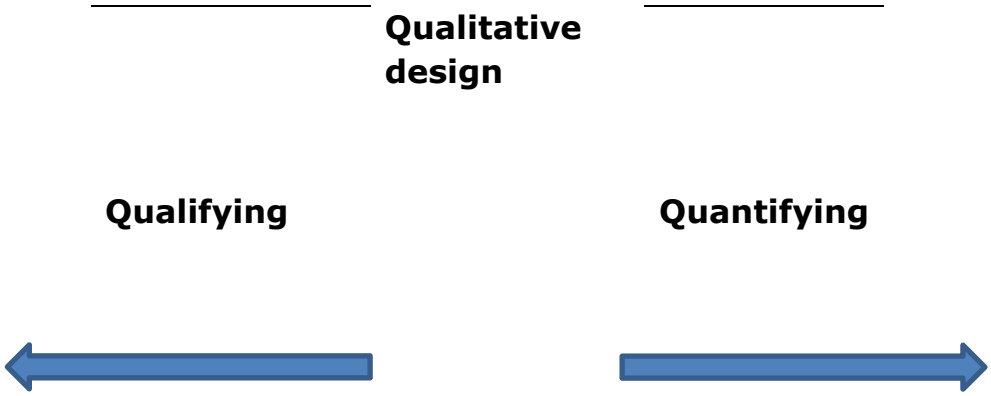


Figure 4.3 Comparison of thematic analysis and qualitative content analysis in the continuum of the qualitative methodology (from Vaismoradi *et al.* 2013)

Both involve analysis of the interview material and noting of specific items consistently. Where they differ is in the emphasis. While content analysis is concerned with quantification of comments, thematic analysis is more concerned with identifying the range of ideas emerging, and the distinctions between them.

This study has elements of both approaches. As evident in the following findings chapter the relatively open questions allowed a variety of ideas to emerge where a thematic type of approach was most appropriate. For the more structured questions, it was clear that all respondents had been asked the same question, and so it was reasonable to quantify the responses using content analysis. However, given the relatively small sample in this study, the thematic analysis is seen as of relevance in many instances than the content analysis.

Analysis phases and their descriptions	
Thematic analysis (Braun and Clarke, 2006: 87)	Content analysis (Elo and Kyngäs, 2008: 110)
Familiarising with data Transcribing data, reading and rereading the data, noting down initial ideas.	*Preparation* Being immersed in the data and obtaining the sense of whole, selecting the unit of analysis, deciding on the analysis of manifest content or latent content
Generating initial codes Coding interesting features of the data systematically across the entire data set, collating data relevant to each code.	*Organising* Open coding and creating categories, grouping codes under higher order headings, formulating a general description of the research topic through generating categories and subcategories as abstracting.
Searching for themes Collating codes into potential themes, gathering all data relevant to	

each potential theme

Reviewing themes

Checking if the themes work in relation to the coded extracts and the entire data set, generating a thematic map.

Defining and naming themes

Ongoing analysis for refining the specifics of each theme and the overall story that the analysis tells, generating clear definitions and names for each theme.

Producing the report

The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a report of the analysis.

Reporting

Reporting the analysing process and the results through models, conceptual systems, conceptual map or categories, and a story line.

Figure 4.4 Main characteristics of thematic analysis and qualitative content analysis in the continuum of the qualitative methodology (from Vaismoradi *et al.* 2013)

In this study, the relative newness of the area also lent itself to these forms of analysis, allowing the researcher to avoid preconceived categories and letting categories emerge from the data. Once categories were developed, exemplars are found in the data and findings from other studies or theory is then addressed in the discussion chapter of the thesis. Finally, the discursive piece reports on how the findings of the analysis contribute the body of existing knowledge and the resultant implications for clinical practice, further studies and education (Hsieh and Shannon 2005)

4.15 Conclusion

The aim of this research study was to explore whether the nurse/midwife prescribing programme in Ireland prepared the participants for their role. The research was conducted using semi-structured interviews and testing of the confidence and accuracy of the participants using validated paper based clinical scenarios. The participants were located all over Ireland and comprised of two groups, one group were qualified nurse/midwife prescribers recruited through a random sample generated by NMBI and the second group were recruited through the HEIs. Interviews were conducted at either the participant's clinical location or hotels, which were in close proximity to the participants' work/home. A number of pilot interviews were conducted to test the research instruments and to gauge the length of time the interviews approximately. The data generated from the semi-structured interview was managed using Max QDA and analysed using conventional content analysis, thematic analysis and memos recorded after the interviews. The quantitative data was analysed using SPPS version 20. Findings from the quantitative component will be presented in the next chapter.

Chapter 5: Measurement of Confidence, Accuracy, Advice Seeking and Scope of Practice when Prescribing

5.0 Introduction

This chapter presents the results of the quantitative aspect of this research. The essential requirement for the training of nurse/midwife prescribers, is that it should prepare them to make accurate and appropriate decisions. This requirement can be separated into three parts, firstly, prescribers should be able to make the correct decisions in areas of prescribing within their scope of practice. Secondly, they should be able to identify the areas which are outside of their scope of practice, and where they should not prescribe. Thirdly, they should be able to identify the areas where they have some uncertainty about their decisions and make appropriate decisions about referral.

This study examined these questions by presenting the nurse prescribers with clinical scenarios and asking them to make the appropriate prescription/decision. This was achieved by asking the participants to indicate their confidence in their decision, from whom would they seek further advice from before implementing the prescription and finally the accuracy of their decision about each of the clinical scenarios scored using a scoring method developed by Sodha (2002a) and used more recently by Offredy *et al.* (2009).

The data was gathered in conjunction with the interviews, the numbers in the research project were small (n=28), however 112 clinical scenarios were administered and had a non-normal distribution. Non-parametric data analysis utilizing the Mann Whitney U test was undertaken for the analysis. The distribution is not normal due to the small sample size (n=28) and in the case of small samples non-parametric tests are more robust as they make no assumptions about the underlying population (Hall 2020; Curtis and Drennan 2013). Two groups were compared: the qualified nurse/midwife prescribers and the candidate nurse/midwife prescribers. The areas which will be

presented in this chapter include the sample characteristics, levels of confidence of the participants, accuracy of the participants, who they would seek advice from regarding prescribing decisions and finally how the participants viewed the clinical scenarios in terms of their scope of practice.

5.1 The Sample Characteristics

A total 31 interviews were conducted, 3 were conducted as part of the pilot interview phase and then 28 were conducted as part of the main study. The data from the pilot interviews, was not included in this analysis, as the pilot study was conducted purely to test the interview process, the tools, the timing and the process of conducting the interviews with the clinical scenarios. However, on a cursory examination of the pilot interview data there were similarities in levels of confidence, accuracy, advice seeking and working within scope of practice of the main study. Of the 28 interviews, 14 were conducted with qualified nurse/midwife prescribers whose range of prescribing experience varied from 2 months to 4.5 years.

Fourteen interviews were conducted with candidate prescribers, who at the time of the interview were in the last 2-3 weeks of the programme, therefore had not completed the programme, or the process of presenting their CPA to their respective drugs and therapeutics committee or were not registered as an RNP with the Nursing and Midwifery Board of Ireland. As the clinical scenarios were administered was conducted during the interview the response rate was 100% (n=28), however a number of participants did not want to respond to the clinical scenarios which they indicated were beyond their scope of practice and this information will be displayed and commented upon later.

Approximately, 86% (n = 24) of the samples were female. The number of years the respondents were qualified ranged from 5 to 30 years (mean = 17 years, SD=6.83). Each participant was exposed to 4 scenarios, however scenario 13, an intellectual disability nurse prescribing scenario, was administered to all participants and an analysis of how all the participants

worked this clinical scenario out will be commented on in a later section in this chapter. Data for each clinical scenario was collected and each qualified/candidate prescriber was asked about their confidence level in relation to the clinical scenarios, who they would seek assistance from in relation to the clinical scenario and how they would proceed with that clinical scenario while working within their scope of practice. In addition, each clinical scenario was scored for accuracy using a previously used scoring system and checked by the researcher and a colleague once all the interviews had been completed.

5.2 Gender profile of the sample

The gender balance of the sample was male 14.3% versus 85.7% female see table 5.1. There is a predominance of females in the nursing and midwifery profession; however, some disciplines have a higher percentage of males to females such as in mental health nursing.

Table 5.1 Gender Profile of the Sample

Gender	(n)	%
Male	4	14.3%
Female	24	85.7%
Total	28	100%

5.3 The Clinical Areas profile of the sample

The 28 participants came from a variety of clinical areas, broadly representing the various disciples of nursing and midwifery including Mental Health, General, Children, Intellectual Disability and Midwifery. Community nursing was also represented in the sample; however, the participant was not a qualified public health nurse, but a registered general nurse working in the community setting.

The clinical areas represented were mental health nursing at just over 28%, then older person services 14.3%, emergency nurses 10.7%, children's nurses and practice nurses, intellectual disability nursing and nurses from the anticoagulant services each at 7.1%. Together the remaining clinical areas represented 3.6% each cardiac, tissue viability, pre assessment, infection control and midwifery. The finding that the largest cohort of nurses was from mental health nurses is consistent with the higher percentage that have already undertaken this programme and registered as nurse prescribers. An unexpected finding however was the low percentage of midwives in the sample 3.6%. This was unusual, in that along with mental health nursing, older person nursing and emergency nursing, the numbers of midwife prescriber numbers would be significant, in fact by July 2013, and there were over 100 registered midwife prescribers in Ireland (ONMSD 2013).

During the data collection period the small number of midwives was identified, and an attempt made to address this by inviting additional registered midwives prescribing to participate. However, none of the additional midwives selected and invited to participate did so. The researcher received no feedback as to why no further midwives agreed to participate in the study, however in the study by Drennan *et al.* (2009) did not indicate the percentages of nurses and midwives in their sample, thus no comparison can be made with the Drennan *et al.* (2009) study. Explanations for the low number of midwife prescribers in this study could be due to a number of factors, including the current high numbers of babies being born in Ireland, the embargo on recruitment due to the restrictions on spending in the HSE, which are contributing to the increased workload of midwives. However, the employment embargo also applied to nurses so it seems that workload demands may be a more plausible explanation. Table 5.2 presents clinical practice details of study participants.

Table 5.2 Clinical areas where participants work

	Frequency	Percent	Valid Percent
Mental Health	8	28.6	28.6

Older people	4	14.3	14.3
Emergency	3	10.7	10.7
Children's	2	7.1	7.1
Practice Nurse	2	7.1	7.1
Intellectual Disability	2	7.1	7.1
Anti-Coagulant Service	2	7.1	7.1
Midwifery	1	3.6	3.6
Cardiac	1	3.6	3.6
Tissue Viability	1	3.6	3.6
Infection Control	1	3.6	3.6
Pre-Op Assessment	1	3.6	3.6
Total	28	100.0	100.0

5.4 The Number of Years Qualified as a Nurse/Midwife

A core criterion for entry to the prescribing programme, is that the candidate be qualified for a minimum of 3 years. This requirement was to ensure that nurse/midwives were experienced in clinical practice. In this study participants were qualified for 5 years or more. Table 5.3 details the number of years qualified as a nurse or midwife. This could be accounted for by the fact, that excluding the grade of staff nurse, the remainder of the sample were in grades that required 5 years of experience. Of those who were staff nurses, some had undertaken prescribing to assist their application to obtain a clinical nurse specialist role in the future, and a number of the people recorded as staff nurses were working in specialist roles where a clinical nurse specialist role had not been sanctioned.

Table 5.3 Number of Year Qualified as a Nurse/Midwife

Number of Years Qualified as a Nurse/Midwife

	N	Minimum	Maximum	Mean	Std. Deviation
Number of Years Qualified	28	5.0	30.0	17.000	6.8367
Valid N (listwise)	28				

5.5 Clinical Grades of the Sample

It was interesting to examine the grades of the nurses and midwives in the sample, to identify what grade they are working at in clinical practice. The study found that the largest numbers of respondents were working at staff nurse grade 32.1% (n =9) the next largest group were Clinical Nurse Specialists CNS at 25% (n = 7) with the Advanced Nurse Practitioners ANPs next at 17.9% (n =5). However, when you transform the variable using SPSS into three categories of Staff Nurse, Specialist grade and Management grade, the percentages change to reflect a much higher percentage of Nurses in the specialist clinical grade, at almost 43% now compared to 32.1% staff nurses and finally 25% at management grade. The rationale for transforming the clinical grades variable, was to examine the differences between the specialist clinical grades and the lowest grade of nurse and the management grades. The sample was so small the transforming the variable also gave a better comparison between the specialist grades versus the non-specialist grades.

The range of clinical areas where staff nurses in this study were working was mental health, anticoagulant therapy, children's nursing and older person care. The specialist areas were emergency, practice nursing, infection control, children's nursing, older person nursing, cardiac and mental health nursing. The clinical areas where the nurses/midwives were working in management grades, were older person nursing, intellectual disability nursing, mental health, midwifery, and pre-operative assessment.

The one clinical area which had nurse prescribers in all three areas of staff nurse, specialist and managerial, was older person nursing, which reflects the diversity of role for nurses in caring for older people in Ireland today. All the emergency nurses were ANPs which reflects the trend around the country to have all the ANPs in the emergency departments working as nurse prescribers. Indeed, the post of ANP now usually has the caveat of the nurse/midwife needing to be a registered nurse/midwife prescriber.

The nurses at clinical managerial grades tended to be in services, which were nurse led, or if the service had not out of hours medical officer cover, this was particularly evident in the intellectual disabilities service. Table 5.4 details the breakdown of the clinical grades and table 5.5 details the grades once the variable was transformed.

Table 5.4 Clinical Grades of the Sample

Clinical Grades

	Frequency	Percent	Valid Percent	Cumulative Percent
Staff nurse	9	32.1	32.1	32.1
CNS	7	25.0	25.0	57.1
ANP	5	17.9	17.9	75.0
CNM1	2	7.1	7.1	82.1
CNM2	4	14.3	14.3	96.4
CMM2	1	3.6	3.6	100.0
Total	28	100.0	100.0	

Table 5.5 Staff Nurse versus Specialist versus Managerial Grades (transformed variable)

Staff Nurses versus Specialist versus Managerial Grades

	Frequency	Percent	Valid Percent	Cumulative Percent
Staff Nurse	9	32.1	32.1	32.1
Specialist	12	42.9	42.9	75.0
Management	7	25.0	25.0	100.0
Total	28	100.0	100.0	

There are a number of significant differences in the confidence levels between the qualified nurse/midwife prescribers and the candidate nurse/midwife prescribers. The qualified group was overall more confident than the candidate group and they were more confident in recognizing when a clinical scenario was outside their scope of practice, and they were largely not prepared to offer a solution for these scenarios. Interestingly, participants in staff nurse or clinical managerial grades were less likely to identify a clinical scenario being outside their scope of practice.

The qualified group also sought advice for the clinical scenarios from their core area from their nursing and midwifery colleagues; however, the candidate prescribers were more likely to seek from their medical colleagues. Once, the qualified prescribers were presented with clinical scenarios from outside their core clinical area, they in large part sought advice from their medical colleagues. The level of knowledge of both groups was high, however the qualified group largely did not give answers to clinical scenarios outside their core area, while the candidate prescribers did, their level of knowledge was very good and was possibly due to the recent exposure and revision of their prescribing knowledge.

5.6 Confidence when Prescribing

Prescribing medication is a precise activity; however, one of the key attributes in making a prescribing decision concerns the confidence of the prescriber that they are making the correct decision. A high level of confidence that you are correct in your prescribing decision, is more likely to result in the nurse/midwife implementing their prescribing plan. With a low level of confidence more likely to result in the decision of the patient being referred on to a medical colleague. This section examines how the participants reported their level of confidence in respect of the clinical scenarios they were asked to make decisions about.

Four scenarios were administered to each participant, 2 from their core area of clinical practice and 2 from outside of their area. To clarify, the mental health nurses were given 2 clinical scenarios from mental health nursing, one from general practice nursing and one from intellectual disability nursing. All the participants were given the opportunity to consider the clinical scenarios and then document their answer as to how as a nurse prescriber they should proceed. Once all the scenarios were considered, each participant was asked to rate how confident they were that the answer they had given was correct. A Likert scale ranging from 1 - strongly agree they were correct to 5 strongly disagree they were correct was utilized. The answers were not given until the

end of the interview. The researcher felt that if the participants knew the answer to the first one and they were wrong or had not spotted the cues for the correct treatment, this would adversely affect their confidence and influence subsequent responses.

The Mann-Whitney U test was administered to test for difference in levels of confidence between the qualified group and the candidate group. This test was deemed suitable for statistical comparison due to the small sample size, the ordinal level of the data, which was not normally distributed, hence a non-parametric test was utilised and this test was used as test of significance.

Scenario 1

In the comparison of the levels of confidence in clinical scenario 1 the Mann-Whitney U test revealed no significant difference in the confidence levels of qualified nurse/midwife prescribers (Md=1.50, n=14) and candidate nurse/midwife prescribers (Md=2.00, n=14), U=66.50, z=-1.604, *p*=.109, r=0.3. The effect size of r=.3 means there is no significant difference between the qualified and candidate prescribers.

Table 5.6 Comparison of confidence levels of all 4 Clinical Scenarios

Confidence with clinical scenarios	Qualified group n=14	Candidate group n=14	z stat	*p*	r
	Median	Median			
Scenario One	1.5	2.0	-1.604	.109	0.3
Scenario Two	1.0	2.0	-3.495	.000	0.9
Scenario Three	1.5	3.0	-3.040	.002	0.8
Scenario Four	1.0	3.0	-3.024	.002	0.8

Scenario 2

In the comparison of the confidence levels in clinical scenario 2, a Mann-Whitney U test revealed a statistically significant difference between the qualified nurse/midwife prescribers (Md=1.0, n=14) and the candidate nurse prescribers (Md=2.00, n=14), U= 27, z=-3.495, *p*=.000, r=.9. The qualified

nurse/midwife group had a higher confidence level with clinical scenario 2 versus the candidate group. The effect size of r=.9 means there is a significant difference between the qualified and candidate prescribers but as this is a small sample there may not be a large effect. The results indicated a higher level of confidence with clinical scenario 2 a core scenario among the candidate group versus the qualified group.

Scenario 3

In the comparison of the confidence levels in clinical scenario 3 a Mann-Whitney U test, revealed a significant difference in the confidence levels between the qualified prescribers (Md=1.5, n=14) and the candidate prescribers (Md=3.0, n=14), U=34.5, z= -3.040, *p*=.002, r=.8. The effect size of r=.8 means there is a significant difference between the qualified and candidate prescribers but as this is a small sample there may not be a large effect. While the confidence levels are higher in the candidate group, however several the qualified prescribers (n=4) strongly agreed or agreed they had given the correct answer, which was that the scenario was beyond their scope of practice and that the correct approach was to give no answer.

Scenario 4

In the comparison of the confidence levels in clinical scenario 4 the Mann-Whitney U test revealed a significant difference in the confidence levels qualified prescribers (Md=1.0, n=14) and the candidate prescribers (Md=3.00, n=14), U=35.00, z=-3.024, *p*=.002, r=.8. Again, candidate prescribers were more confident that they had either given the correct answer. Nine of the qualified prescribers stated that it was beyond their scope of practice. However, the majority of the candidate prescribers (n=10) stated this scenario was beyond their scope of practice. While more of the candidate prescribers stated the clinical scenario was beyond their scope of practice than the qualified prescribers, more of the qualified prescribers opted to not give an answer to the scenario than the candidate prescribers; this could be due to inexperience of the candidate group and experience of the qualified

group. In addition, the qualified group may have been more aware of the consequences of risk taking and finally the candidate group may have treated it as a learning opportunity.

The overall results of the analysis of the confidence of the nurse/midwife prescribers, revealed that with respect to the core clinical areas in which the prescribers practice, they are confident. However, as they move from their core area their level of confidence declines, with the experienced prescribers' confidence that the right course of action for these non-core areas is to refer the patient on as the clinical scenario is beyond their scope of practice. However, the candidate prescribers were less likely to omit an answer for the non-core areas than the qualified prescribers. Neither group demonstrated excessively high levels of confidence that was likely to result in risk taking behaviour when prescribing.

5.7 Accuracy when Prescribing

A vital component of prescribing medication to patients is the accuracy of the nurse/midwife prescriber to make the correct decision and implement the correct prescription. Failure to come to the correct decision is likely to lead to adverse consequences for the patient leading to morbidity, delayed treatment and in some cases death. This section outlines the results of the accuracy of participants' answers on the clinical scenarios, using a scoring system developed by Sodha (2002a) and validated by Offready *et al.* (2009). The participants' responses to all clinical scenarios (112) were scored using this scoring system by the researcher and a colleague.

The Mann-Whitney U test was administered to test for difference in the scoring levels between the qualified group and the candidate group, this test was deemed suitable for statistical comparison as data is ordinal rather than nominal and the small numbers involved in this sample were not suitable for Chi Square test.

Comparison of the scoring results in clinical scenario 1 which was a scenario from their core clinical area, Mann-Whitney U test revealed no significant difference in the scoring between the qualified prescribers (Md=3.0, n=14) and candidate prescribers (Md=3.0, n=14), U=84.00, z=-.905, *p*=.366, r=.24. This clinical scenario is from the respondents' core area of clinical practice and also it confirms that their knowledge of the area is correct. Table 5.10 details the scoring of scenario one.

Table 5.7 Scoring of the clinical scenarios

Report

Scoring of Scenario 1

Registration Status	N	Median
Qualified	14	3.00
Candidate	14	3.00
Total	28	3.00

Ranks

0000	Registration Status	N	Mean Rank	Sum of Ranks
Scoring of Scenario 1	Qualified	14	15.50	217.00
	Candidate	14	13.50	189.00
	Total	28		

Test Statistics[a]

	Scoring of Scenario 1
Mann-Whitney U	84.000
Wilcoxon W	189.000
Z	-.905
Asymp. Sig. (2-tailed)	.366
Exact Sig. [2*(1-tailed Sig.)]	.541[b]

a. Grouping Variable: Registration Status

b. Not corrected for ties.

Clinical Scenario 2

In the comparison of the scoring results in clinical scenario 2 again a core clinical scenario, a Mann-Whitney U test revealed no significant difference between the scoring results of qualified prescribers (Md=2.00, n=14) and candidate prescribers (Md=2.00, n=14), U=97.00, z= -.05, *p*= .96, r=0.01. This clinical scenario was from the respondents' core area of clinical practice

and confirms that their knowledge of the area was correct. Table 5.11 details the scoring of scenario 2.

Table 5.8 Scoring of the clinical scenario 2

Report

Scoring of Scenario 2

Registration Status	N	Median
Qualified	14	2.00
Candidate	14	2.00
Total	28	2.00

Ranks

	Registration Status	N	Mean Rank	Sum of Ranks
Scoring of Scenario 2	Qualified	14	14.57	204.00
	Candidate	14	14.43	202.00
	Total	28		

Test Statistics[a]

	Scoring of Scenario 2
Mann-Whitney U	97.000
Wilcoxon W	202.000
Z	-.050
Asymp. Sig. (2-tailed)	.960
Exact Sig. [2*(1-tailed Sig.)]	.982[b]

a. Grouping Variable: Registration Status

b. Not corrected for ties.

Scoring of Clinical Scenario 3

In the comparison of the scoring results in clinical scenario 3 a clinical scenario from outside prescribing core area of clinical practice, again no significant difference was identified between the qualified (Md=2.0, n=14) and candidate prescribers (Md=2.0, n=14), U=69.00, z=-1.383, *p*=.167, r=.37. This scenario was not from either groups' core area of clinical practice and again those that did give an answer scored well and some of those that had identified it as being not being their core area did not give an answer. Table 5.12 details the scoring of clinical scenario 3.

Table 5.9 Scoring of the clinical scenario 3

Report

Scoring of Scenario 3

Registration Status	N	Median
Qualified	14	2.00
Candidate	14	2.00
Total	28	2.00

Ranks

	Registration Status	N	Mean Rank	Sum of Ranks
Scoring of Scenario 3	Qualified	14	12.43	174.00
	Candidate	14	16.57	232.00
	Total	28		

Test Statistics[a]

	Scoring of Scenario 3
Mann-Whitney U	69.000
Wilcoxon W	174.000
Z	-1.382
Asymp. Sig. (2-tailed)	.167
Exact Sig. [2*(1-tailed Sig.)]	.194[b]

a. Grouping Variable: Registration Status

b. Not corrected for ties.

Scoring of Clinical Scenario 4

Scenario 4 was not related to the prescribers' usual area of practice. However, unlike scenario 3 the majority of the qualified prescribers opted not to offer an answer while the candidate prescribers were again more likely to do so. In the comparison of the scoring results in clinical scenario 4, a Mann-Whitney U test revealed there was a significant difference between the qualified prescribers (Md=1.0, n=14) and candidate prescribers (Md=2.0, n=14), U=53.00, z=-2.145, *p*=.032, r=.5. The difference in this case was that there was a tendency among the qualified prescribers not to attempt to answer this clinical scenario, however more of the candidate prescribers did attempt to answer it and those that did gave good answers scoring 2 or higher. This finding suggests that the qualified prescribers, particularly those in the specialist grades of CNS and ANP and those with experience, had made the

decision not to guess the answer, and instead were mindful of the limitations of their scope of practice. However, candidate prescribers did risk giving an answer and were knowledgeable. It was maybe that the more experienced the prescriber is in their core clinical area of prescribing, the more certain they are of only prescribing in that area. The candidates' knowledge was very good and perhaps this was due to the recent acquisition and revision of this knowledge. However, their willingness to give a solution to the scenario could be due to inexperience of prescribing and the lack of realization of their limitations of their scope of their practice. It could also relate to their utilizing the scenario as a learning experience, a kind of self-testing. Table 5.13 details the scoring of scenario 4.

Table 5.10 Scoring of the clinical scenario 4

Report

Scoring of Scenario 4

Registration Status	N	Median
Qualified	14	1.00
Candidate	14	2.00
Total	28	1.00

Ranks

	Registration Status	N	Mean Rank	Sum of Ranks
Scoring of Scenario 4	Qualified	14	11.29	158.00
	Candidate	14	17.71	248.00
	Total	28		

Test Statistics[a]

	Scoring of Scenario 4
Mann-Whitney U	53.000
Wilcoxon W	158.000
Z	-2.145
Asymp. Sig. (2-tailed)	.032
Exact Sig. [2*(1-tailed Sig.)]	.039[b]

a. Grouping Variable: Registration Status

b. Not corrected for ties.

5.8 Seeking Advice when Prescribing

When considering a prescribing decision, it is important that the nurse/midwife prescriber is ready to admit they may not know how to proceed and are willing to seek advice from another source. Failure to consider seeking advice, just as in failing to be accurate in prescribing decision making can have an adverse outcome for patients. The mentorship model used in the training of nurse/midwife prescribers develops the relationship between medical practitioner and candidate prescriber for discussion about treatment decisions. This section presents the responses from the participants as to who they would seek advice from in relation to the clinical scenarios presented to them.

The participants were asked to indicate who they would seek advice from in relation to the clinical scenarios. With respect to clinical scenario 1, 53.3% (n=15), stated they would seek advice from a medical colleague, 32.1% (n=9), responded they would ask their nursing/midwifery colleague, 10.7% (n=3), responded that they would refer to a reference text, the British National Formulary (BNF), and finally 3.6% (n=1), responded with an online resource.

Regarding clinical scenario 2, the percentage seeking advice from either a nursing/ midwifery colleague increases to 35.7% (n=10), those seeking advice from a reference text drops to 7.1% (n=2), no one seeks advice from an online resource and the number seeking advice from medical colleague increased to 57.1% (n=15).

Moving on to the noncore clinical areas examining clinical scenario 3, there is a more noticeable move away from nursing and midwifery colleagues dropping to only 14.3% (n=4), only 3.7% (n=1), using the BNF and 10.7% (n=3), using an online resource. The vast majority would use a medical colleague for advice 71.4% (n=20).

Finally in examining clinical scenario 4, which was a clinical scenario from outside their core practice, 75% (n=21), of the respondents would ask advice

from a medical colleague, only 14.3% (n=4), would seek advice from a nursing/midwifery colleague, 10.7% (n=3), would consult an online resource. Overall, the qualified nurse midwife prescribers were more likely to ask advice from a nursing or midwifery colleague than the candidate prescribers in their core clinical areas whereas, the candidate prescribers were more likely to ask advice from their medical colleague. This finding positively reflects the fact that the candidate prescribers are finishing the programme and still being mentored by the medical colleague possibly reflects this finding. Whereas, when examining who the nurse/midwife prescribers would seek advice from, in relation to the noncore areas, the vast majority of both the qualified and candidate prescribers would seek from a medical colleague. However, does this finding mean they are not confident about seeking advice from a nursing/midwifery colleague or is the safety of the patient paramount and they seek advice from the person they believe has the best advice, namely in this case a medical colleague, it is likely colleagues would not have noncore knowledge either? Table 5.14 outlines from which person / resource the participants would seek advice from, in relation to all 4 clinical scenarios.

Table 5.11 Seeking Advice

	Scenario 1 %	Scenario 2 %	Scenario 3 %	Scenario 4 %
Nursing/ Midwifery Colleague	32.1	35.7	14.3	14.3
Reference Text	10.7	7.1	3.6	0.0
Online Resource	3.6	0.0	10.7	10.7
Medical Colleague	53.6	57.1	71.4	75.0
Total	100.0	100.0	100.0	100.0

5.9 Working within the Scope of Practice when Prescribing

Working within scope of practice is critical to the safety of patients and practitioners alike. Practicing outside of the scope of practice is likely to result in diminished levels of knowledge and expertise. This section details the

participants' responses to the question concerning how they would proceed in the real-world, with the clinical scenarios identifying the boundaries of their scope of practice.

To explore how scope of practice is framed by nurse/midwife prescribers each participant was asked how they would proceed in the realities of practice situation relating to two scenarios. With regards to the two clinical scenarios from the participants' core clinical area the 50 % (n=14) responded by saying they would proceed with their suggested treatment of the patient in Scenario 1 46.4% (n=13) suggested they would proceed with advice, only one respondent said that it was beyond their scope of practice. This person was working as a mental health nurse whose service had a CNS working in the area who led a Clozapine service, so this nurse felt that because the service has this specialist support that prescribing clozapine was beyond the scope of practice. With regards to clinical scenario 2 less participants agreed they would proceed with the course of action they had suggested dropping to 42.9%, (n=12), 39.3%, (n=11) respondents would seek advice and 17.9% (n=5), felt the clinical scenario was beyond their scope of practice.

In any of the noncore clinical scenarios, the level of agreement of proceeding as the participants described drops even further. In clinical scenario 3 the number of participants who would proceed as described drops to only 17.9% (n=5), while only 7 would proceed with advice. Only one participant responded that they would not proceed as described and 53.6% (n=15), now said that the clinical scenario was beyond their scope of practice. This shift from proceeding either with or without advice to the clinical scenario being beyond the scope of practice of the respondents is reassuring. However, for the 5 respondents who would proceed without advice, they were completely correct in the case of 3 and scored 2 in the case of the other two respondents. The areas these respondents practiced in were practice nurses, intellectual disability services and anticoagulant services. Four of these respondents were qualified and only one was a candidate, this respondent was a practice nurse.

Finally, in clinical scenario 4, the participants answered this with, only 7.1% (n=2), stating they would proceed as described 21.4% (n=6), would proceed

with advice and 71.4% (n=20), stating with was beyond their scope of practice. Of the 2 respondents who said they would proceed as described, one scored 2 on the scenario and the other respondent scored 1.

Overall, what has emerged is that as participants move from the core areas of clinical practice to noncore practice areas, the majority recognized their limitations and that they required advice to proceed safety. It was also identified that when dealing with non-core clinical situation nurse/midwife prescribers were also more likely to identify the situation as beyond their scope of practice. This finding is again encouraging in terms of the safety of these prescribers; they recognize their practice and knowledge limitations. Table 5.15 details how the participants would proceed in the real-world with the clinical scenario, identifying or not limits of their scope of practice.

Table 5.12 How the Nurse/Midwife Prescribers would proceed in the real-world

	Scenario 1 %	Scenario 2 %	Scenario 3 %	Scenario 4 %
Proceed as described	50.0	42.9	17.9	7.1
Would not proceed as described	0.0	0.0	3.6	0.0
Proceed with advice	46.4	39.3	25.0	21.4
Beyond my Scope of Practice	3.6	17.9	53.6	71.4
Total	100.0	100.00	100.0	100.0

5.10 Summary

The chapter presented the findings from the quantitative part of the research study. The sections which were presented included, the characteristics of the sample, the measurement of the confidence, accuracy, advice seeking and working within the scope of practice of the participants. What has emerged for this aspect of the study is that the results point to qualified nurse/midwife prescribers, who are confident, accurate; seek advice from medical

colleagues and particularly in the specialist grades recognition when situations are beyond their scope of practice. The next chapter will report on the findings from the qualitative element of the study.

Chapter Six: The voice of the practitioners: Analysis of Interview responses

6.1 Introduction

The testing with prescribing clinical scenarios to measure confidence, accuracy, advice seeking and working within the scope of practice, was included as part of the interviews with participants. Interviews provided information on the confidence, decision process and the views of participants on the prescribing programme. This chapter presents an analysis of these interviews and examines motivations to prescribe, which aspects of the programme which were useful to the nurse/midwife prescribers and the effect the nurse/midwife prescribing programme had on their clinical practice and their thinking. The interviews also examined how has the programme influenced or changed their view of prescribing practices. How they used the nurse/midwife prescribing decision making framework developed by NMBI, how the nurse/midwife prescribing programme prepare them for their role as a nurse/midwife prescriber in Ireland and the changes that were required to the nurse/midwife prescribing programme in Ireland.

6.1.1 How the interviews were conducted and analysed

The clinical scenarios in the previous chapter were embedded within the interviews. Recognizing that the use of scenarios may result in anxiety, the interviews were structured in a way which sought to reduce and/or minimize participant anxiety. The interview commenced with questions which were non-threatening in nature and permitted the participants to voice their views about the prescribing programme. Questions were sequenced to bring participants through the process of undertaking the prescribing programme from their motivation to undertake the programme, through their experience of the programme and finally to whether the programme required any modification.

The data from the interviews was analysed using content analysis undergoing the convention of coding, concepts, categories, connections, and conclusions. Coding was initially guided by the questions asked during the interviews, but as the coding progressed, many more codes which were not immediately noted by the researcher immediately after the interviews, emerged from the data. The coding was managed by using MaxQda computer-assisted qualitative data software. This package enabled the management of the data from interviews quickly and thoroughly. The themes which emerged from the interviews were 'motivations to prescribe', 'beneficial parts of the programme', 'the effect of the programme on clinical practice and thinking', 'views on prescribing', 'the prescribing decision-making framework', 'preparedness to prescribe and changes to the nurse/midwife prescribing programme' and these themes and subthemes are used to present findings the remainder of this chapter.

6.2 Motivation to Prescribe

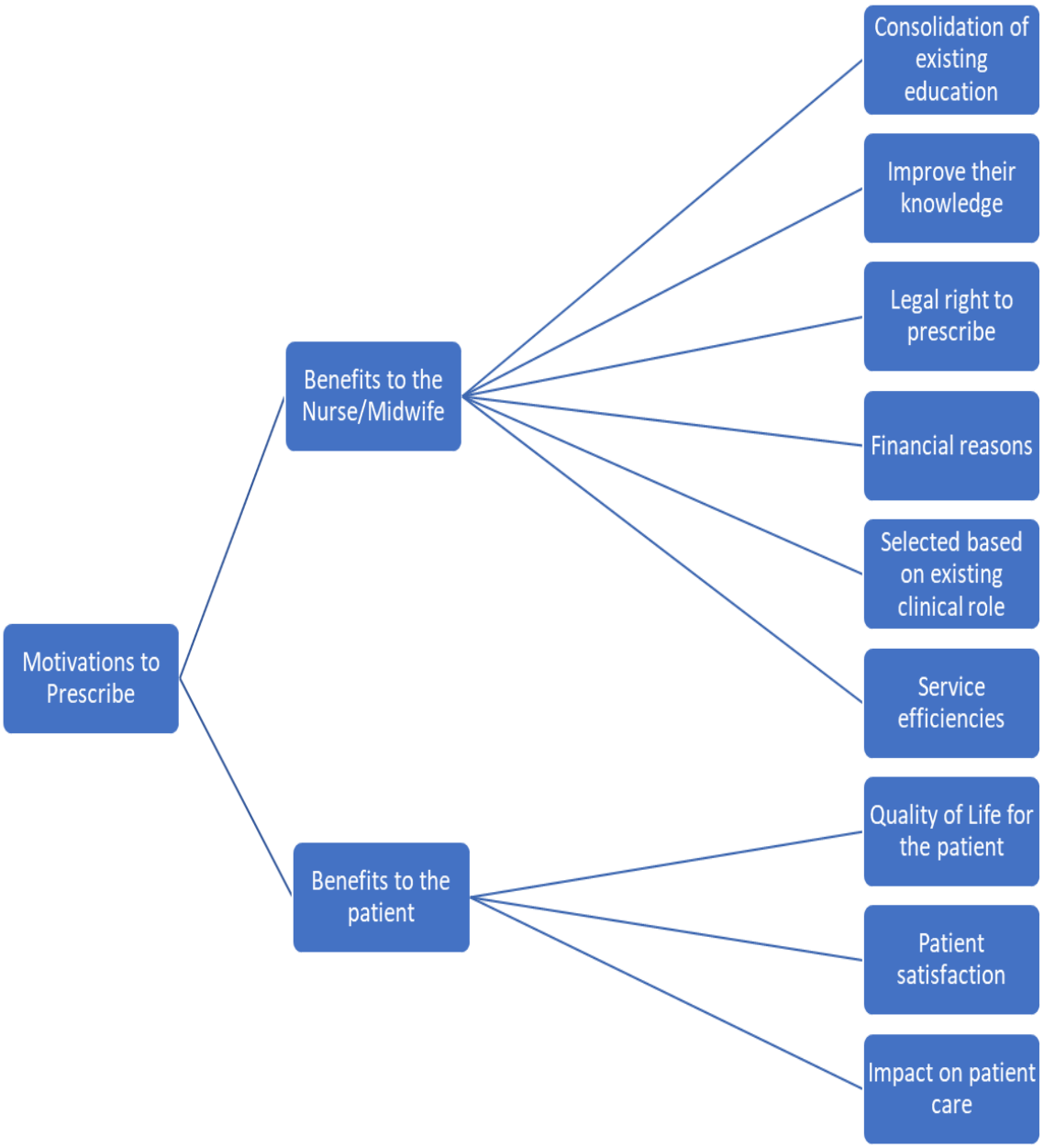


Figure 6.1: Motivation to Prescribe

Each interview commenced by asking why participants had undertaken the nurse/midwife prescribing programme. This was perceived as a non-threatening question and one, which would relax participants prior to more probing questions later in the interview. All the respondents were relaxed in answering this question and from this initial question a number of categories

emerged. Broadly, they fell into two categories, one, the benefits to the nurse/midwife and two, the benefits to the patient. The reasons for undertaking the programme were a mix of personal, service led, or due to the nurse/midwife prescribers' clinical role. The benefits to the patient of nurse/midwife prescribing included subcategories such as the quality of life for the patient, patient satisfaction, holistic care, gap in care and impacts on care.

6.2.1 Benefits to the Nurse/Midwife

6.2.1.1 Consolidation of Existing Education

Regardless of whether the participants were a qualified or candidate prescriber a number of them spoke about how they undertook the programme for educational reasons. For some, this programme was the end of a number of years' study which would complete their education as they perceived it, having previously undertaken post graduate diploma or masters. Up until recently, the prescribing programme was not part of any other programme it was a 'stand-alone' course, however now several Nursing and Midwifery Masters programme have prescribing as a pathway, leading to a more complete clinical and educational experience for the students.

> Q2 *Well I was after finishing my Masters. I had gone back and I done my degree postgraduate and I had done bits and pieces and I finished up doing a Masters and you know I had nothing on at the time.*

> Q5 *I suppose it was an interest to further education. I had done my general nursing obviously, my H.Dip in midwifery and I had done a degree in nursing and I was looking for something just to sink my teeth into and I felt nurse prescribing would be useful from the ward point of view…And I suppose I just wanted something to study at that time so I felt it would just further educate me a bit.*

For some they had not engaged in any formal nursing programme for a number of years due to family commitments and they felt this programme was a way back into education.

> *Q11 Plus like I'm sort of at that stage in my life where I wanted to do something, like I should have done it years ago, but different life circumstances threw up different things so I never really got around to doing anything…So I wanted to do something too and I thought well if I can undertake this and do it then that might lead to something else or I might continue on that way. So that was my motivation really, primarily it was because there's so many drugs interact with the Warfarin that you know I just wanted to have some sort of an idea in my own head, yeah.*

> C10 *Really just to further my professional development and you know I think like care of the elderly particularly the service is going to change maybe in the future, and kind of prepare myself for future services.*

Further career developments or further educational opportunities appear to a spin off from the initial reason for undertaking the nurse/midwife prescribing programme.

6.2.1.2 Improve their knowledge

Several of the participants related the desire to improve knowledge of the subject. In this regard participants spoke about how they have always had a particular interest in the subject of medication and how engaging in this programme would provide the opportunity to gain this knowledge. There are different modules on the programme focusing on physical assessment, pharmacology, practice issues and the clinical component of prescribing. However, while the prescribing programme has equal weighting in terms of the modules, pharmacology featured prominently in the participants' minds when they were asked about reasons for doing the programme or indeed later when asked about the parts of the programme were beneficial.

> C4 *I had an interest in medication in general. I felt like I was giving it out, I had very basic knowledge about it and I kind of thought it would be a good foundation to have.*

> *C12 Always interested around the interactions between the medications our clients can be on with epilepsy, with the polypharmacy and stuff, it was a big interest.*

The participants expressed the view that the nurse/midwife prescribing programme improved their knowledge and offered the opportunity of career development.

6.2.1.3 Legal rights to prescribe

Having the correct legal backing for practice was considered important and undertaking the prescribing programme offered this appropriate legal backing. The need for clinical practice to be regulated professionally and legally is important in terms of protecting the public and the nurse/midwife. The law now permits registered nurse/midwife prescribers to prescribe and regulates existing practice.

> C11 *So we have a lot of patients here, we have support from the consultant anaesthetist, but we kind of run ourselves, as in we do a lot of the diagnosing anyway. And we tell, we advise a lot of the patients about their medication…So we felt it was important for us to actually have officially, legally be able to do that, even though we were always doing it through experience and our consultants would back us up.*

6.2.1.4 Financial Reasons

The HSE, in order to promote the prescribing programme within the public health service paid the fees for the nurses and midwives to undertake the programme. While a budget is provided for education through regional Nursing and Midwifery Planning and Development Units (NMPDU), the prescribing programme fees come from a central office in the HSE therefore regional budgets are not impacted upon. The opportunity to undertake a funded programme is likely to be a great motivating factor. However, nurse/midwives from the private sector were not funded for the programme and therefore, had to get their employer to pay, but this was not always possible.

> *Q8 HSE were willing to pay staff… And if I was paying for it, I wouldn't pay for it. No way would I pay 5,000 [euro] for it.*

Registered Nurse/Midwife prescribers do not get any extra salary for this qualification, and this nurse acknowledged that, but saw that it could benefit her patients.

C6 I still went ahead and did it without the pay but I suppose you know …with the way things are in the HSE but it's just a lot of work for a lot of responsibility for really very little coming back to it but I suppose it's hope that the patients will get the benefit out of it really, that's the main thing.

6.2.1.5 Selected based on existing clinical role

Several of the participants talked about being selected to undertake the programme because of the role they worked in, be it a specialist clinical role such as CNS/CMS, ANP/ AMP, while for some, it was due to being in a clinical managerial role. This selection is understandable given that some of these roles for example CNS in diabetes care, clinics are nurse led and this extension of the CNS role is a natural fit.

Q3 Probably [because I was] working as a clinical nurse specialist

Q6 on many different levels even before you became an advanced nurse practitioner, you know at triage in this country it works exactly the same. I've worked in other countries and you know I was used to working with patient group directives and things like that so I suppose I had done both.

Q8 But they were aiming for CNS's to get it done first. That was where their push was.

However, this policy of selecting someone to undertake the course just because of the role they had in a service may not always be appropriate. One respondent felt that sometimes seniority at a grade or being in a particular role, did not justify the person being sent on the programme, as the process for selection did not appear to be clear.

Q7 well like many roles or extended roles of nursing I think that all those kind of selecting of those types of individuals should go through a fair and transparent process and unfortunately in many incidences it doesn't. Now I'm not quite sure how they manage to select candidates for the role of nurse prescribing but sometimes it was based on 'I'd

like to go' or I put my hand up first or I'm the oldest in the department or I'm friends with the Director of Nursing or I'm working in clinical practice, I'm the CNM2.

6.2.1.6 Service Efficiencies

Service driven forces was one of the reasons some participants mentioned as the reason they undertook the prescribing programme, this impetus for this force in some cases was financial, efficiency of the service and fragmented services.

Q2It's a cost thing really. I think it was a cost thing because the GP is only contracted to prescribe for so many hours a week, say 15 hours a week… there would be continuous cover from that side of it when the GP would be gone off, so there'd always be somebody on duty that would have the ability to prescribe.

Q6 I suppose the second impetus would have been employer driven…They wanted us to do it which was brilliant because then you have the support and obviously in the middle of all that is your patient, the patient focus, because it expedited their patient episode and allowed us to I suppose complete our episode of care in a speedier timeframe.

Q10 they, the middle management and the senior management in the HSE or in the Department of Health for example – to remove as much work from the NCHDs as possible and then give it to nurses and let nurses be doing this kind of stuff. So like the bar was very high at the start for prescribing and the checking and auditing of nurse prescribers is arduous and so on. So I think if you're dropping the bar the whole time which is you know, whatever, is it acceptable or not acceptable, but I think what they're trying to do then is roll it out more and it becomes less patient-centred as opposed … you know less for the patients' interests it's more for the organisational interests, I would think.

The reasons why these participants undertook the prescribing programme were quite varied from educational reasons, to improve their knowledge, for legal reasons through to the services they practiced in supporting and driving the change. In the next category the benefits to the patient are explored within the theme of motivation to prescribe.

6.2.2 Benefit to the Patient

This next section focuses on the patients as the central reason some participants gave as their motivation to prescribe and undertake the prescribing programme. For some participants, the motivation to prescribe was entirely to benefit their patients and improve the care as they passed through the health care services in Ireland.

6.2.2.1 Quality of Life for the Patient

Nursing/Midwifery care is directly focused on improving/supporting the patient in whatever clinical setting, be it in mental health nursing where the focus is facilitating recovery of the person or in midwifery where the focus is facilitating the mother to have a safe and rewarding birthing experience resulting a healthy baby being delivered. Consequently, nurses/midwives have always endeavoured to engage in providing excellent care for their patients, nurse/midwife prescribing has now enhanced this care for the patient, by assisting the nurse/midwife prescriber improve the quality of care experienced by the patient. Many of the participants talked about this aspect of prescribing and for some it was the improvement in the quality of life for their patient that nurse/midwife prescribing offered, was their motivation to prescribe. This participant talks about how a prescribing intervention can avoid a distressing period for the person, this will improve the quality of their life.

> C7 *Yeah, it's more for the patient really, that the patient isn't do you know I suppose if they see me on a Thursday and they're very, very distressed or not sleeping that they don't have to wait 24 hours before they can see the doctor.*

These quotes highlight how the nurse prescribers see the ability to prescribe having a direct positive impact on their patient's quality of life.

> Q9 *…basically you've developed your understanding of the practice of prescribing so what's the benefits to the person who's having the medication prescribed to them.*

C12 *But then you're bringing the lads, the residents, out to get a prescription filled or you're waiting for him [the GP] to be able to come in, so it was kind of to improve their quality of care and to be able to prescribe a thing like paracetamol when you know they need it without the GP needing to come in.*

Particularly in care of the older person some of the prescribing interventions can avoid potentially acute medical issues for the older person, such as early prescribing of laxative, as in the next quote where the nurse talks about timely prescribing and avoiding a wait.

C14 *You know or they're just having a bit of … you want to give them a nebuliser or they're just having a bit of constipation you just want to give them a Movicol or something that will just sort the instant problem and for that you might have to wait for a day or two, you know, so it's not necessary I think.*

6.2.2.2 Patient Satisfaction

For one of the nurse/midwife prescribers she saw the benefits for her patients in her prescribing for them, as opposed to the GP very soon into her prescribing experience. This for her reinforced her motivation to prescribe.

Q1 I did a patient satisfaction survey as part of the audit and the majority of those patients were very happy with the service, they said it cut down waiting times, they were getting a seamless service if you like, you know, and for them they thought it was great.

One of the candidate prescribers, a mental health nurse, talked about how she had talked to one of her services users and how she would be able to prescribe her medication for her.

C1*That lady I mentioned earlier, I had spoken to her about you know the medication that I had to go to the GP and tell the GP, so I spoke to her about it. I actually said it to her [I could prescribe] and she said oh it would be great, it would be great, it would save an awful lot of hassle you know. So I suppose if you're getting responses like that, it would be.*

6.2.2.3 Impact on patient care

One of the most significant reported impacts of the move to nurse prescribing was a change in the pharmacological regime experienced by patients.

This change in practice took two forms. Firstly, some participants reported that they had decided not to prescribe, or to use non-pharmacological interventions. Secondly, some respondents changed or stopped the medicines being prescribed because of awareness of polypharmacy.

Part of this effect is a result of the close relationship between the nurse and the patient. In a multi-disciplinary team, the nurse is probably the healthcare professional who spends most time with the patient and is most aware of the patient's progress and the impact of treatments. The prescribing doctor has a larger range of patients and spends less time with each. The nurse or midwife has a smaller range of patients and the potential of more contact with each. In a busy hospital setting, it is likely that on some occasions a doctor may prescribe for a patient without physically seeing the person. As one respondent put it:

> *And the doctor will just stand at the desk and will not see the patient at all……. There may be a list of prescriptions for him or her to do, and he or she will just do them without ever seeing the patient (Q5).*

This undesirable, but widespread practice means that the nurse is making a recommendation, which often becomes a prescription without further investigation. With nurse prescribers, the prescriptive authority is vested in a person closer to the patient, thus allowing a more informed decision.

Another effect was greater awareness of the interaction of medications. Some respondents reported that as a result of the training they became much more aware of the risks of polypharmacy. One respondent reported

> *it would make me look at all the drugs the patients are on now, rather than just the drugs I was prescribing….. it would make me be more thorough in looking at their bloods to see what other symptoms they may have or things that may interact with the*

drugs I am prescribing, and it would also make me look at the drugs that probably could be stopped as well (Q14).

There were some cases where this awareness has resulted in a decision not to prescribe. For example, respondent

(C2) *I have developed a respect that you don't just throw a prescription at it, and you have to quantify why you have prescribed what you have prescribed. And parental anxiety is not a good enough reason.*

Other respondents gave more detailed examples:

Q1 Definitely I'd be saying to them say if somebody comes into me and they have high blood pressure so rather than sticking them onto a medication straightaway we would be trying the non-pharmacological methods first, no doubt about it and especially if they have the criteria to meet, you know, if they haven't ... say if they are overweight well look we will try and encourage the weight loss, we will try and encourage or I will try and encourage, you know, if they take a lot of salt in their diet you know cut that down and we're going to do a trial of that before we start medicating

Q7 So I just tended to ... whereas before the course I tended when you'd liaise with somebody else about pain management there tended to be a reaction in which the person wrote a prescription, you know, whereas when I was prescribing myself I kind of explored other alternatives before I got to the writing a prescription, for example, over the counter medication or interventions that would be supportive of pain care but not pharmacological, you know, for example ice and rest and elevation and the use of, as I say, over the counter prescription as opposed to prescribing a prescription.

In this section the participants provided their motivations as to why they undertook the nurse/midwife prescribing programme. Reasons for undertaking the programme were either it was beneficial to the nurse/midwife or the patient.

6.3 Aspects of the programme which were more beneficial to the nurse/midwife prescribers

The second theme which emerged from the interviews was aspects of the programme which were more beneficial to the nurse/midwife prescribers this

included pharmacology, physical health assessment, working with a medical mentor and the professional and legal component of nurse prescribing.

6.3.1 Beneficial parts of the prescribing course

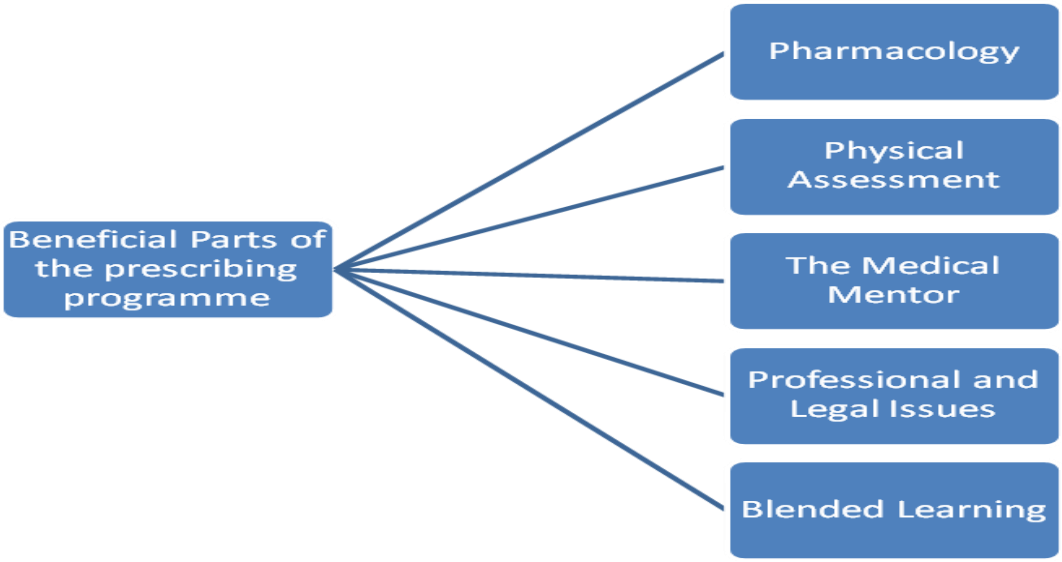


Figure 6.2 Beneficial Parts of the Prescribing programme

Registration programmes in Ireland have a theoretical and clinical component and the nurse/midwife prescribing programme is no different. While the different HEIs may name the modules with different titles the overarching content of the modules are the same i.e. professional and legal issues of prescribing, pharmacology, physical health assessment and finally working with the medical mentor in clinical practice.

6.3.1.1 Pharmacology

Pharmacology was the part of the programme which received most of the comments. Pharmacology either was enjoyed or loathed by participants, with a wide variation in opinion about the breadth and depth of the content.

> *Q2: The lecturer was giving us the breakdown of the composition of drugs and there was squiggles all over the place, you know the chemistry side of it… I wasn't going to manufacture the drug, do you know what I mean?... Just the pharmacology part of the course was over the top.*

> *Q4: So I kind of think they need to include maybe a broader range of drugs and the drugs I would prescribe, I think first of all they need to focus on your own area and actually find a way of allowing the nurse to study the drugs she'll actually be prescribing and the area that she's in in-depth and maybe link those in with a general examination and then teach you the wider pharmacology but not in the way it was taught, I thought, and that final exam, you know, it was a nightmare.*

For the candidates who were just completing the course, the pharmacology features frequently as the most beneficial part of the course.

> C15: like there is another big emphasis on pharmacology and pharmacy end which is essential when you're working with medication and I suppose it just kind of re-educated me around the affects and ill-effects and the contraindications of medication.

> C7: Do you know as in like how it all works, as in the prescribing, what to look for when you're prescribing, why you're prescribing it, interactions, like I really wouldn't ... well I suppose interactions I would have known a bit about but I think you kind of see it with a different set of eyes, if that makes sense.

6.3.1.2 Physical Assessment

Physical Assessment was already part of some of the nurse/midwife skill set and for some of the nurses particularly from a mental health background it was really different to the type of assessment they were used to undertaking.

> *Q3: you're learning you know about the holistic assessment, the things that I'd never actually done in nursing before. You know, like listening to the lungs.*

> *Q9: Physical assessment part would have been more foreign to me due to the fact that I come from mental health training. Yes, it helped but it was a smaller percentage of what we covered you know. But yes, it certainly benefited, absolutely.*

Q10: And other things likes ah there was elements of the prescribing course that concentrated on physical examination and that kind of thing and again if I've kind of pre-done it before, like I got practice doing my Masters and so on, again you'd be less interested in that because you'd be used to examining individuals and used to taking histories and so on. But it was also good, certain parts of it were good because it would remind you of the elements of history taking that you need to brush up on and so on..

6.3.1.3 The Medical Mentor

The role of mentor in nurse/midwife prescribing is initially one of role model for the candidate prescriber who shadows the mentor and learns from them, how they prescribe, as the programme moves on the mentor is more of a supervisor in observing the candidate and questioning them on their clinical decisions. For some of these participants it was a real change in the way they collaborated with their medical colleagues. From the participants' view point the experience of working with their mentor was positive.

Q4 I suppose I think the single most effective thing was probably my time with my mentor, with my consultant mentor.

Q7 also the mentorship in the clinical area by medical colleagues, I found that excellent in that you know you could learn so much in the classroom but it was when you came into the clinical environment, you know, it was the support from doctors essentially here that I found most beneficial. Now they would challenge you to kind of explain why you were doing something and why you weren't doing something and why you were choosing one product over another.

Participants were not always able to work closely with their mentor and to facilitate this the participants followed the mentor wherever they were working, in some cases the participants gave up their free time to shadow the mentor, but the positive learning experience seemed to compensate for this inconvenience.

Q12 I suppose again I found the clinical experience very helpful, you know that I was lucky enough here to get the clinical director of the whole area here, he covers … as well, he was my mentor for the 12 twelve days and I visited him in various locations. Generally speaking it was out-patients, so the twelve days was in my own time, I was on my days off I had arranged to meet him in the out-patient clinics around the

surrounding areas within the Service and based on his I know huge experience and been you know him being my mentor, I was able to observe a lot of things that he would have decisions he would have made, his assessments, his interactions with the patient and as a result then the reasons for prescribing and the reasons for discontinuing and the reasons for titrating medication or otherwise and follow up as well was always very important to you know, so I suppose from that point of view I found that beneficial.

The difficulties in getting a mentor were also alluded to, especially for community nurses who potentially would deal with 10 or more GPs, however the perception that it was easier to get a mentor in a hospital was not always the case.

Q13 Yeah, well you see I had a local GP and bless him, he was the only person that would actually do it, everyone else refused. So it's very hard for community nurses to get a mentor, a lot easier for hospital. And that was very difficult. But he was great.

C4 Yeah, well just in particular the consultant I work with is very forward [thinking] but I know there is other ones here in the hospital who aren't.

A number of the participants spoke about being fortunate that they had a good mentor, implying that it was unexpected that the mentor was cooperating with them.

Q8 I was lucky that he was, he was willing to let me work a lot with a couple of specialist registrars, very lucky to have two very good ones at the particular time. Generally, a lot of the consultants that on speaking to all our groups, some of them were very good and some were not really, you know, it was another kind of box exercise and they just ticked the boxes, they didn't really want to be teaching you per se because they have medical students, they have registrars, they have to teach themselves ward rounds, clinics and we were sometimes, not a hindrance per se.

Difficulty in accessing the mentor could be a problem on occasion and this was particularly a problem for ward-based nurse/midwives or community nurses. The specialist grades of CNS and ANP were able to access their mentor frequently as they worked so closely with them, doing wards rounds, clinics, and team meeting.

C12 Whereas I know other people who did have problems kind of chasing up their mentor.

One of the participants reported huge commitment from the medical staff including coming in on their days off to help the candidate prescribers.

> *C15 I think the service that we are trying to improve here, they're quite open minded, the medical colleagues our medical colleagues and the consultants as well and like one or two of the doctors like even on their days off to go through different things with us.*

The in-depth questioning experienced by this participant from the mentor really challenged how the prescribing decision was made and now is the approach the participant uses during the prescribing process.

> *C12 what's my reasoning behind it? What exam did I do to say he needs the prescription? What antibiotic am I putting him on for what? Why did I pick that one over this one? What interactions are there between the medications they're on already on? So now I go in with that way of thinking as well.*

While the vast majority of the participants reported positive experiences with mentors, they were aware that there were difficulties in getting mentors in the first place, or getting time with the mentors, however these participants seemed to have benefited from the mentor,-mentee experience. Lack of a supportive or engaged mentor seemed to stymie the learning for the participants, in effect making the mentor one of the key people to support prescribing.

Overall, the participants reported that mentor was the most significant person in giving them support or encouragement in their role as nurse prescribers.

6.3.1.4 Professional and Legal Issues

Finally, the Professional and Legal issues were mentioned least often, but for those who mentioned it was felt to be an important aspect of the programme.

> *Q6: You know the legal side of it was very good… You know kind of the risk management side of it was very good.*

> *Q11: The ethics, you know the ethics module, I found very interesting as well.*

Pharmacology features heavily in the comments about the parts of the programme, which helped the participants in preparing for their role as nurse prescribers. The knowledge is precise and exact. It is difficult to draw any

significance as to why the other subject are mentioned less often than the pharmacology, but it is interesting that the module mentioned least is the one area that is connected to the difficulties the participants encounter once they completed the course. It is worth noting that the assessment methods were slightly different in the different HEIs, therefore, it was not a case of it all being multiple-choice questionnaires.

6.3.1.5 Blended Learning

Some of the participants mentioned blended learning as being the most beneficial part of the nurse/midwife programme. Nearly all of the HEIs have some element of blended/distance learning in the programme While blended and distance learning may alleviate the issue of needing to travel long distances to the colleges; the participants had different views on the delivery method. For some blended learning accommodated their attendance on the programme and permitted them to engage with course materials at their own pace.

> *Q4: I think the blended learning approach was excellent, I couldn't have managed it otherwise.*
>
> *Q10: And I thought the rest of the stuff was there. There was enough online material for you to take as much or as little as you needed. So I think it was fairly balanced and it was more than acceptable and it ticked all the boxes for me personally I think, that's all I can say really.*

The reality of the lack of a live lecturer to ask questions of, did seem to upset one participant, but these methods of delivery are set to continue.

> *Q8: we did it with distance learning, so I was in a site, this side of the country and often we felt that when we were cut off our communication was cut off, that the girls in … still had free access to the lecturer, because they were seeing it live… Then we had a Moodle, yeah. Yeah, so we were often, you know you'd be discussing it then with yourself, but then you'd nowhere to go at the question and by the time you get home you might have forgotten about it and whatever, or the time the next class came around. Even though it's great not having to trek there is that little bit of loss of.*

Some of the candidate prescribers had a view that the face-to-face contact with lecturers was a more appropriate method of learning for them.

> *C11: No I think the face to face would be more important, than the internet… Yeah, and I think that the contact time with actually rather than over the net I think, it's higher hours, contact time in … than it is in the …, …., yeah.*

These sections examined the parts of the programme that were beneficial to the nurse/midwife prescribers. The next section will deal with the effect nurse/midwife prescribing programme had on participants' clinical practice and thinking.

6.4 The Effect on Clinical Practice and Thinking

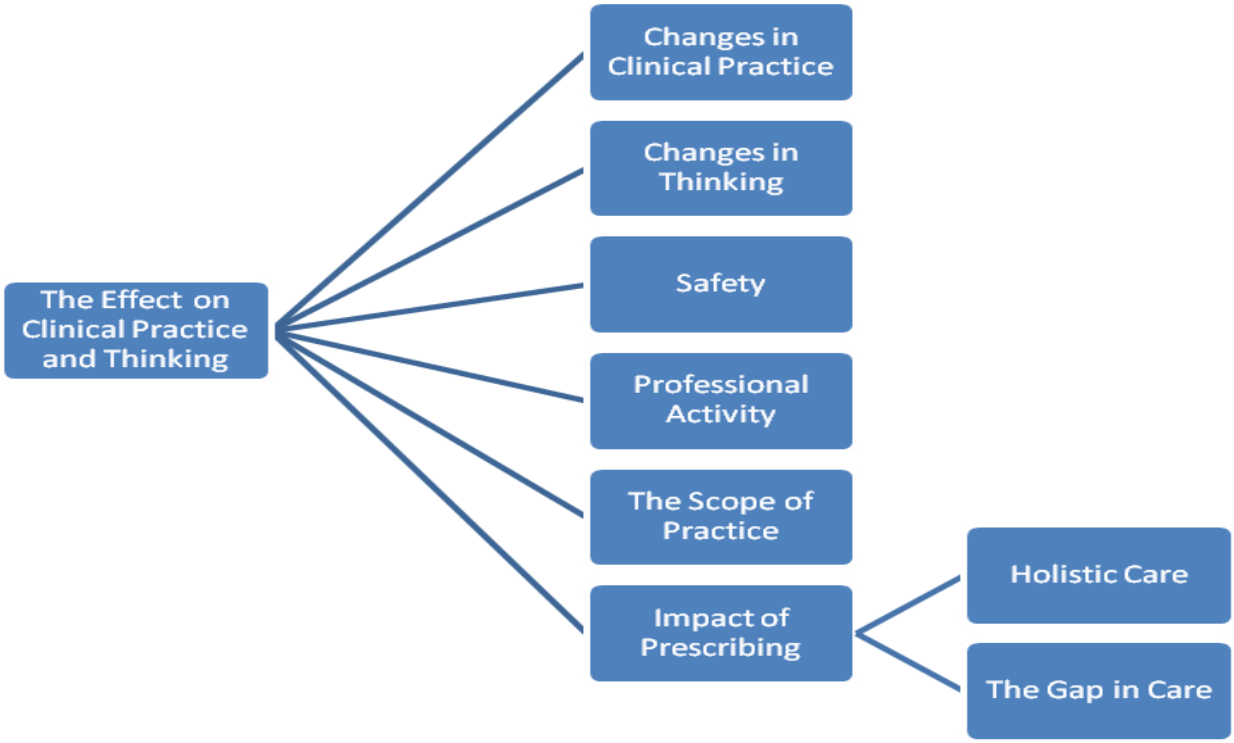


Figure 6.3: The effect on Clinical Practice and Thinking

6.4 Changes due to Nurse/Midwife Prescribing

One of the questions asked during the interview was whether the course changed the participants' clinical practice and their thinking. The follow sections reveal the responses of the participants to these questions. The expectation was that some changes would have resulted from becoming a nurse/midwife prescriber; however, it was revealing that, while the candidate prescribers were not yet prescribing, the learning, which had already happened on the prescribing programme, was already being integrated into their daily clinical practice.

6.4.1 Changes in Clinical Practice

Participants spoke about how their nursing/midwifery practice now differed from before becoming a nurse/midwife prescriber or since undertaking the prescribing programme. For some, including both those from the qualified and candidate prescribers' groups, they now had felt they had more confidence when dealing with medications.

> C 4 I suppose I never had the confidence in finding the information myself, I kind of thought the best thing to do would be ask the doctor whereas now I kind of know where to go.

> *C15 I suppose it's been more aware initially with people coming in, you look at their medication and what they're on but now I suppose as nurses we were always aware of poly-pharmacy and do you know, now it's made me a lot more just I suppose confident and just even looking at their medication and saying oh my God, they shouldn't be on this or they could be on that or maybe something else, so I'd discuss it with the NCHD or do you know I just wouldn't oversee it anymore. I just wouldn't leave it to the responsibility of the doctors. Like if I saw someone coming in and they were quite elated and they were on an antidepressant, I'd be kind of saying do you know maybe their medication will want to be reviewed. I suppose it's just improve my clinical judgment overall as a nurse.*

The change for participants was now being able to offer complete care for the patient and not having to wait for a doctor, but also knowing when to liaise with colleagues.

> *Q4 Well it's definitely changed in that I'm prescribing so I can now give complete care to the patient so I don't have to interrupt my consultation to say please wait out there*

while I go and find a doctor and it may be half an hour or it may be two hours before I can find one. So that's how I can give complete care to the patients.

Q12 Yeah on a day to day basis really I suppose you are able to make it a clinical decision based on an assessment, you should be able to spend more time with the patient and re-educating them on the effects and benefits of what they are taking or maybe otherwise and you are able to discontinue a medication that might be causing a problem. You are able to liaise then as well with your medical team if you know for advice on that as well for to get feedback to you know.

Rather than automatically refer the person on to a doctor and get them to write a prescription, this participant now considers if a non-pharmacological treatment can be used.

Q7 So I just tended to ... whereas before the course I tended when you'd liaise with somebody else about pain management there tended to be a reaction in which the person wrote a prescription, you know, whereas when I was prescribing myself I kind of explored other alternatives before I got to the writing a prescription, for example, over the counter medication or interventions that would be supportive of pain care but not pharmacological, you know, for example ice and rest and elevation and the use of, as I say, over the counter prescription as opposed to prescribing a prescription.

The increased level of responsibility, which comes with prescriptive authority, was something this participant spoke about, and this in turn, having this responsibility has made the participant engage more with practice that involves medication.

Q9 Yes, it has changed my practice, absolutely. It's also increased my level, my level of responsibilities measurably but certainly like I would volunteer more so when it's to do with medication in all different areas of medication.

This participant who was a candidate prescriber gave this example of how her practice was changing because of the prescribing course, she had already started to suggest changes in medication for patients, this closer examination of the patient's file as a result of doing the prescribing programme, resulted in a positive change in medication for the patient.

C1 Yes, yes, yes, actually last week there was a patient, he's been on a particular depot long acting medication and it was something that he didn't like himself because he said he didn't feel right on it. He couldn't describe how but I looked through his notes and he had been on another Depot in the past. So I brought this to the consultant's attention and we sat with the patient and we spoke to him about it and he's actually

started on the old Depot he'd been on before. So things like that. I suppose you don't really realise you're doing it but you are actually doing it everyday practice you know. Yes.

Increased awareness about the medications patients were prescribed and questioning more as to why the patients were on the medications, was one of the changes for practice because of undertaking the prescribing programme.

Q14 It would make me look at all the drugs the patients are on now rather than just the drugs that I was prescribing. Okay, so yes it has. It would make me be more thorough in looking at their bloods to see what other symptoms they may have or things that may interact with the drugs I'm prescribing and it would also make me look at drugs that probably could be stopped as well.

C10 I suppose just like you would I suppose look at what drugs your patients are on and you would be trying to apply what you've learned in the course and saying you know does this, you know is this going to interact with this or you know you will question things more in practice you know.

Being able to conduct a physical assessment is a core competency of the prescribing programme and this participant speak about how this new skill has changed her practice.

C11 Yes, to physically assess the patient, but by physically assessing the patient you're also getting a global picture of why they're on that medication or what's benefitting or isn't it benefitting, or should they be on this or should they be on that. I mean you have actually a better method of what actually diagnosing the patient or dealing with the issue at hand, do you know what I mean?

Utilizing a drug reference text is important to ensure up to date information about a medication and the text of choice in most clinical settings is the British National Formulary BNF, this text is usually found in every clinical area for the clinicians to use when checking any aspect of a medication. Doctors typically carried their own copy around in the pocket of their white coat for years, now the BNF is freely available online as an up-to-date medication reference website. Students undertaking the prescribing programme are taught how to use the reference text correctly and in some HEIs it is allowed into the examination hall. The participant reports how she now uses this reference text.

> C9 I never had it yeah, I that wouldn't have ever been my first point of call, you would always go to the doctor obviously first, but now before you do that, what I would do well what I would look up first I think is the BNF.

Finally, one of the participants felt that the prescribing course had not changed clinical practice much at all, it had simply made work more efficient.

> Q7 and you know I suppose our practice is very much based on, you know, it incorporates the biomedical model which essentially relates to best evidence practice and with the incorporation of clinical guidelines that maintain safety and you know best quality of care, delivers a good quality care to patients. So therefore the idea that the course somehow suddenly transformed us in our role that wouldn't be true to say, you know, because we were kind of like that's how we were operating already, like prescribing medication was essentially ... having or being able to prescribe the medication ourselves autonomously just made our work processes easier as opposed to ...

However, for a number of the participants now they are nurse/midwife prescribers themselves, they realize the inherent dangers in taking another clinician's word on the health status of a patient, in order to make a prescribing decision and now see the dangers with this practice.

> *Q4 I mean I think back, you know, how much risk really a doctor is taking if I'm just going upstairs and they're not seeing it [the patient] and they're accepting it because they trust my judgment.*

And again another participant speaks about the risk of the practice of dictating to the doctor what to prescribe for a patient.

> *Q10 and the junior doctor who is asked to write it is just writing what you've asked them to do so I think there's no accountability in that link, that chain, so therefore errors can happen I suppose.*

Telling the doctor what to prescribe for a patient, even with patients the doctor is familiar with is not safe practice; the doctors need to prescribe for the patient based on their own assessment of the patient. This realization of the need to assess the patient yourself is certainly something the qualified prescribers are acutely aware of once they have completed the course and they are now entirely accountable for the prescribing decisions.

> *C12 I think the importance of being so thorough when you are prescribing and not just taking a staff member's word for it.*

Changes the participants spoke about in their clinical practice as a result of the prescribing programme included, having more confidence to deal with medications, becoming more involved in medication activities, making or suggesting changes to patients' medication regimes, asking more questions about why patients were prescribed particular medications and respecting the doctor's prescriptive authority.

6.4.2 Changes in Thinking

As part of the prescribing programme, all those who undertake the programme are exposed to the decision-making framework, as well as the formal process of conducting the physical health assessment, coupled with the pharmacology, the legal component of prescribing, practice standards and reflection. There was an expectation that the programme may change how the nurse/midwife prescriber organized/formatted their thinking in order to prescribe. The following quotes give example of how the participants responded to this question about whether it changed how their thinking.

This participant became aware of the responsibility as a prescriber, and the comment is insightful about the potential dangers that the ability to prescribe could bring.

> *Q2 I suppose I would be mindful of the responsibility I have as a prescriber. It is a tool that I hopefully would use wisely but it could also be a tool that you could use for hope and glory like, you know what I mean, you've to be very careful, it's a valuable tool but to use it right.*

Automatically doing something without questioning why something is being is undertaken, is what this participant felt she was doing prior to the prescribing programme.

> *Q5 and I suppose we all subconsciously make decisions and we don't really know we're making them, you know, we just go with it you know.*

Considering all the aspects of prescribing a treatment was what changed in this participant's thinking and how now she to use the phrase she thinks 'outside the box'.

C3 I suppose I think more. Like because you have the signs behind it like, antibiotic treatment and like even just everything, every medicine you give somebody, you're thinking about it. I found personally that I took that side very seriously. One of the lecturers, said on the first day, he said you know he was kind of thinking of a scenario and he said, so like what would you do, would you guess, like. And one of the girls was there and she said well I think you'd do this, and he said right you've just killed your patient. Do you know what I mean? So you really, even if you're telling people with a cold have paracetamol, you do have enter what else are you taking, have you ever had an allergy, you know, just it makes you think outside the box.

This participant reported developing more of an investigative way of thinking about what decision she would make regarding her patients.

C4 I don't know, I suppose like even from doing the nurse prescribing course the way it's kind of promoted to investigate further and not just to make a decision based on just what you have but you know look into it as much as possible.

However, two of the qualified prescribers said the undertaking the programme had not changed how they thought when prescribing, but both of these participants were working in specialist areas and were a CNS and ANP respectively, the level these nurses work at coupled with their level of experience and specialist area could account for these comments.

Q13 I don't think it has to tell you the truth, it's still the same. It's just I'm able to write the prescription now, so it would be the same.

Q14 Not really, not really I suppose I mean I always would have had to look at the patient holistically, you know

Overall, most of the participants reported that the programme had changed them by developing a greater and systematic 'investigative' or critically reflective approach. The knowledge and skills learned on the course may influence the lens they look through when thinking about their patients and prescribing decisions.

6.4.3 Caution

Being cautious through practicing safely and prescribing safely were again concerns of the participants both the qualified and candidate prescribers. Prescribing medication incorrectly potentially has fatal consequences for the

patient and professional consequences for the nurse/midwife. The exact nature of prescribing allows for no second guessing in terms of knowledge, the need to ask for advice or if unsure to refer the patient on to a medical colleague. The participants frequently mentioned the need to be safe regarding the practice of prescribing medication. Examples of these safety concerns included how they were cautious in their prescribing practice, their awareness of the potential for danger in prescribing and needing to be confident. Some of these participants had over 20 years' experience and even though some of the qualified prescribers were up to four years prescribing their modus operandi was still one of caution.

> *Q1 Yeah I mean you would be kind of very much, you know, watching that you're not going to prescribing something that's going to interact with what they're already on and you know they will be on drugs that I wouldn't have prescribed as well, for other things like that aren't on my CPA, like say mental drugs, I mean you know I wouldn't be prescribing those but you know there's a lot of interactions with those. So yeah so I probably would be more cautious, yeah definitely.*

This participant reveals the insight they have developed, this person was nearly twenty years qualified and prescribing two years, with no evidence of complacency, which sometimes can come with experience.

> *Q5 I'd be a bit more cautious about what I can prescribe and sort of would be more aware I've to know my drugs and to know my person that I'm prescribing for.*

Caution is a particular useful behaviour in nurse midwife prescribing as the consequences of mistakes can have the potential to have dire consequences for the patient, exhibiting this behaviour may well ensure the safety of the patient.

Prescribing medication is potentially a dangerous activity; even taking over the counter medication can be dangerous if the incorrect amount is taken, or if you are allergic to the active ingredient in the medication. The participants recognized this potential for danger and mentioned it a number of times explicitly. This quote from an experienced nurse prescriber, describes how being able to prescribe made her feel because she could prescribe on her own, but quickly she realized that the potential for danger was there by prescribing incorrectly.

Q2 Well it liberated me but it actually is a dangerous liberation too because you know like I wouldn't be ... it's a dangerous tool to have, do you know?

Concern about the potential for danger in prescribing medication, was to the forefront of the participants' comments. For some the freedom that prescribing afforded them, for another the dangers of prescribing outside your scope of practice, and for another the level of education of the nurse prescriber or lack of specialist experience may adversely affect safety without having adequate frameworks in place.

6.4.4 Confidence

Testing the confidence levels of the participants with paper clinical scenarios was central to the quantitative part of the research project. However, in the interviews confidence or lack of confidence was spoken about in a number of different guises, the confidence the course gave the participants, the confidence in prescribing, not being to too confident, confident in your decision-making ability and developing confidence.

These participants report about the confidence the programme gave them in working with patients and their medications or finding information.

C10 Well I suppose it gives you a bit more confidence as well you know, you know in dealing with patients and that you know you have that little bit more knowledge than you had before, so again I suppose you'll question things if they arise yeah.

Having been a nurse prescriber for a number of years this nurse prescriber felt confident in what she was doing.

Q2 So therefore I am very confident in the drugs I have, in the ability to prescribe.

Over confidence was seen as a negative by this participant and in reality, it would be true to say over confidence in prescribing could lead to errors, as the person fails to recognize if an error is being made, due to the certainty of

themselves or their knowledge, flawed decisions can be made when overconfident.

> *Q3 … I mean you're never going to put your, you know, you're never going to be cocky about it, you know.*

From novice to expert carries with it a degree of improving confidence about one's decisions and actions, this quote illustrates how this participant see her prescribing confidence growing in time.

> *C15 So I suppose a lot of it is down to my own confidence and just knowing my own scope and my own limitations and in time, like I'm sure the first year to 18 months I'll be very slow in what I prescribe and but I think as time will go on, my confidence will improve and that will help.*

While this quote acknowledges that confidence will come in time, the participant argues that another vital component in building confidence is having support and crucially having the support after you finish the prescribing programme, the participant did not identify the source of the support, but that some support was necessary.

> *C9 it's grand in theory everything, but to get the confidence, I know that comes with time, but you do need that support, I think that support is missing.*

6.4.5 Professional Activity

The participants spoke about many professional aspects of nursing and midwifery such as being autonomous, accountable, engaging in evidence-based practice and being an independent prescriber, that they felt were enhanced or became more evident because they were, or were about to become a nurse/midwife prescriber. Nurse/Midwife prescribing for some of the participants, has been a very positive and progressive step forward for the nursing and midwifery profession. It has imbued them with a greater sense of being professional and crucially the fact that this is a registration programme is deemed important to the participants from a national and international regulatory position.

Q6 No I think you know ultimately it's a good thing, it's a positive thing for nursing… And it's good that it's on the ABA registration so it's all official and I like all of that side and I think it's necessary.

This participant is very quick to point out she is a nurse not some form of doctor, but her skill level has increased and the new experience of prescribing, confirms the skills and knowledge she has before she undertook the nurse-prescribing programme. This realization of what she is doing and why she is doing it, within a framework it is crucial and marks out this behaviour as professional rather than just intuitive.

Many of the participants spoke about, how the autonomy of their clinical role had been increased or enhanced because they were nurse/midwife prescribers.

Q6 It has changed our practice… it's definitely again increased our autonomy

Some ANPs were prescribing under protocol before, and this participant did acknowledge this and this respondent who was an experience ANP spoke about how the autonomy of prescribing made caring for the patients more efficient.

Q7 So therefore the idea that the course somehow suddenly transformed us in our role that wouldn't be true to say, you know, because we were kind of like that's how we were operating already, like prescribing medication was essentially … having or being able to prescribe the medication ourselves autonomously just made our work processes easier

The idea that as a nurse/midwife prescriber, now they have the autonomy to prescribe for patients they are familiar with or medications they know will have a positive outcome for the patient as in this case below, the nurse was a staff nurse with many years' experience, who now could work more closely with patients.

Q12 so I was very interested from that, from the beginning as to you know the autonomy really of being able to prescribe and that you know and I suppose really I would have always seen the effects and side effects of medication down through the years when I was observing you know the patients in retrospect, even when they come in and when they are acutely unwell…

For some the role of the nurse/midwife prescriber gives them the autonomy they believed they needed to practice effectively.

Having the prescriptive authority to prescribe medications, and with this the increased accountability, was a daunting prospect for some of the participants. Nevertheless, this realization is appropriate that the nurse/midwife prescriber should not harm the patients, while also protecting themselves professionally, that they are prescribing correctly.

> *Q6 So it wouldn't be that the medications would be different but I suppose again it just comes back to because it is your name, your registration, you do think different when you're prescribing without a doubt, you know, I suppose I find I'm double checking and double checking and double checking.*

Fear of consequences of wrongful actions is highlighted in this following example, and it is also noteworthy that the participant sees the consequences for the patients with an incorrect prescription, of what they perceive to be uncomplicated medicines. The action of writing the prescription and putting the Personal Identification Number (PIN) on the prescription brings it home to the nurse/midwife prescriber, the potential level of harm prescribing can cause and ultimately how they are accountable for this.

> *Q8 The fact that you're signing that prescription and putting that pin number to that prescription. And that if you wrote it wrong, even though medics write them wrong and we're always correcting, you'd just think that was probably more of the, it wasn't reality shock per se, it was just maybe a fear that if you'd wrote it wrong, even though a lot of mine drugs currently aren't anything high tech. But at the same time it's, we'll get our knuckles well wrapped if there's an error.*

Certainly, being accountable for your prescribing actions brought a mix of fear, anxiety and carefulness to the participants, which bodes well for safe practice.

Ensuring that they operated with an evidence-based practice was extremely important to the participants with some of them at pains to point out how they engaged in ensuring their practice was up to date.

> *Q12 Well I suppose there's good prescribing practice and there's bad prescribing practice, so really I'm going to try to do you know is you know always think about prescribing you know evidence based on that. We are trying to get up to date as well*

you know any information that comes out whether it's from the Irish Medicines Board, whether it's local policy here and you follow that rigorously you know. We meet as well obviously as well either quarterly for the drugs that our clinics committee I'm on that as well you know.

Indeed, access to online resources has really enhanced the nurse/midwife prescribers' ability to have the latest evidence-based information to hand in making decisions about prescribing.

Q3 Probably an online [resource]. You know I'd be looking up the latest research

The emphasis within the programmes, of learning about evidence-based practice, seems to be effective, and struck a chord with this participant, as it reinforced the necessity to practice with evidence supporting your decisions.

Q7 So you would be far more careful or diligent in prescribing care that adheres to best practice principles. That's not to say that you wouldn't have had before but the course makes you more conscious of those types of interventions.

This participant emphasises the safety and degree of checking and increased sense of care, caution and verification in their professional responsibility as part of their learning. Finally, the security of practicing within evidence-based practice is reassuring for this participant.

Q12 Yeah I think you know you are always really where you are within the best practice like, you know exactly what you are meant to do.

Mixed views were expressed about the independence or otherwise of the nurse/midwife prescriber, some being actively encouraged by their colleagues, and yet the process of making clinical decisions within a team is still very strong.

Q2Now some people would say … and I know people will criticise and say … no you're an independent practitioner but I don't really want to be an independent practitioner I want to be part of a team that makes a decision.

There are contradictory messages about prescribing in terms of making decisions independently, whether a patient needs treatment or not and this decision can be made by the nurse/midwife, versus the experience of some nurse/midwife prescribers who feel the governance in individual clinical sites restricts their ability to prescribe only to limited circumstances.

Q3 The only thing I think just what we said at the start I just feel it's over, how can I say, but over cautious as nurse prescribers and I feel it's very much still kind of governed by the medical profession. And I think that needs to change. I think we need to be equal.

Q6 And I think we were informed that we are prescribers so we will not be using protocols or guidelines but then our local drugs and therapeutics insists that we use protocols and guidelines and does not but you know I think that's something that needs to be taken to the higher level, like you're either a prescriber or you're not, and these things I think you know nobody could have prepared us for that and its ongoing and it remains obstructive.

The independence or otherwise of the nurse prescribers seems to vary depending on several factors, namely the Drugs and Therapeutics Committee, and if the site is HSE or not. The lack of equality in terms of prescribing scrutiny between nurse/midwife prescribers and doctors is unfair and is evident above, however nurse/midwife prescribing is still relatively new in the Irish health care setting. Some of the participants seemed to relish the fact they could prescribe for their patients and made them feel more in control of the care they provide to their patients.

6.4.6 The Scope of Practice

The Nursing and Midwifery Board of Ireland introduced the Scope of Practice for Nurses and Midwives in 2000, it is a framework for assisting nurses and midwives determine whether their planned actions with patients are best practice and safe (NMBI 2015c). The framework guides the nurse/midwife in relation to level of competence, support, accountability and autonomy, CPD, delegation and emergency situations. In the move to nurse/midwife prescribing, safety must be a key concern. It is therefore important that the nurse/midwife prescribers operate only within the confines of their scope of practice. There is a risk that in practice, under the pressure of work, the boundaries of scope of practice might become less clear. In dealing with the clinical scenarios, the respondents were specifically asked, how they would proceed in a real-world situation, and given the option of indicating that it

was outside their scope of practice. In the interviews, a number of respondents spoke about scope of practice.

Participants particularly the specialist grades of CNS and ANP were very quick to talk about something being inside or out their scope of practice and almost automatically when presented with clinical scenarios outside their clinical area would respond as follows

> *Q1 Well it's outside my scope of practice so it's a no brainer (laughs) you know so this would be one now that I wouldn't deal with so I'd refer them to the GP anyway so for further management.*
>
> *Q4 Right, right well as regards my own practice you see I wouldn't be seeing this patient.*
>
> *Q5 and then it's beyond my limitation again. My area of practice wouldn't be within the area described at all.*

However, when the scenario was within their scope of practice, the participants would answer and the justification for their response and the high level of confidence in their response was

> Q2 this is my bread and butter.

This response exhibits a high level of confidence that the clinical scenario in this case was highly familiar to the participant.

The importance of recognition of the limitations of the scope of practice is illustrated in this quote from a highly experienced ANP in emergency care.

> *Q6 I suppose again it would have been prior knowledge. I suppose prior to taking on the Advance Nurse Practitioner role it's acknowledging your limitations and it's certainly not an area of practice let alone expertise so I would not proceed down that route.*

Again, this participant talks about the need to impress on junior colleagues the necessity to avoid adverse incidents for both the patients and the nurse.

> *Q7 Yeah I was going to say, yeah, you could add into that, you know what I mean, from the legislative aspect in the context of safe prescribing, appropriate prescribing and scope of practice as an ANP, you know my professional scope of practice, my accountability as a nurse to do the right thing… I suppose also just on that it's within*

my scope of practice to recognise that I'm outside my scope of practice, do you understand?... I always make that point to student ANPs, that that's a very important thing to recognise that it's almost as important to realise when you're outside your scope of practice as to when you're inside it… Because that's where mistakes are made…

From the time a person enters the nursing /midwifery profession working within your scope of practice is constantly mentioned, and it is assumed people recognize this however, the practicalities or realities of this scope of practice may take a while for some to grapple with.

C3 but what it has done and I didn't expect it to do for me, because we're always going on about this scope of practice, scope of practice, it absolutely defined my scope of practice for me. 100%. But it didn't really happen until I actually came sitting down and doing my CPA and doing my exams at the end of the course.

Nurse/midwife prescribing operating within a scope of practice is something colleagues of one of the nurse prescribers found difficult, the lack of awareness that just because they could prescribe did not mean they had a carte blanche to prescribe in all instances.

Q10 staff say 'Oh quick, give your man there something, some analgesia there, he's a broken neck or back' or something that isn't within my scope

For those participants who recognized a clinical scenario was outside their scope of practice they would either do what was within their scope to do, get advice or refer the patient on to a medical colleague.

Q12 Well the fact that it is outside my scope of practice, you know, it's you know you just send them on

C2 But it isn't from my area so I would have to seek, I would have to seek somebody out.

However, a number of the participants, who were not in specialist clinical roles did not always recognize a clinical scenario was outside their scope of practice and using the knowledge they had from the prescribing programme would give an answer to the clinical scenario. In the majority of cases, they were correct or had identified nearly all the issues and most of the solutions; however, the part that was unsettling was some of them said in the real-world they said they would proceed as described.

C8 You know it is completely outside of my scope but I would have to look it up but I think that you know there's an antibiotic policy but I think she probably would get something like Flucloxacillin but I would have to check, I couldn't… Well they pointed out that there's a community, a community and hospital form for antibiotics. I wouldn't have been aware of that prior to now but I didn't need to be aware of it either because antibiotics wouldn't be part of my scope.

In general, awareness of scope of practice was high. This was particularly true for the specialist prescribers. Most of the specialists mentioned scope of practice in the interview and were very clear that they would not exceed their scope. As one said, "I wouldn't touch it with a barge-pole". The non-specialists demonstrated a knowledge of their scope of practice but, were more often prepared to look outside it for the purposes of the study. When they did consider cases outside their scope of practice, their answers were accurate.

The impact of prescribing on scope of practice appears to be that the nurse/midwife has developed additional skills and knowledge, which enhanced their ability to care for their patients. The initiative has not expanded the range of patients or conditions that the nurse can address but has expanded the range of interventions available to the nurse in dealing with the patient.

While participants can make accurate decisions on areas outside their scope of practice, they acknowledge the responsibility to work within their respective scopes of practice. This responsible action mirrors the behaviour of the specialist medical practitioners who even though they have prescriptive authority to prescribe medicines from the entire range of medicines and medicinal products, only prescribe the medicines and medicinal products within their specialist area.

Recognition of what was in or outside of someone's scope of practice influenced largely the responses to the clinical scenarios in this study. For nurse/midwife prescribing to continue to become routinely part of nursing and midwifery practice, this precise awareness of the extent and limitations of the nurse/midwife's scope of practice must be known by the nurse/midwife

to ensure evidence based and safe care for patients and protection of the practitioners themselves.

6.4.7 Impact of Prescribing

This section illuminated two issues that are patient focused and how nurse/midwife prescribing could directly impact on the care experience for patients. The involvement of the nurse/midwife prescriber permitted the same focus of holistic care to be implemented, as well avoiding the interruption or gap in care, until a medical practitioner would engage and prescribe for the patient, even though the therapeutic relationship was established by the nurse or midwife.

6.4.7.1 Holistic Care

Prescribing offered the participants the ability to give complete and holistic care for their clients. Several of them spoke about the former unsatisfactory nature of the consultation with the patient, when they had assessed them, diagnosed them and then had to ask another person to prescribe a drug for them, when they had not assessed the person and had not been providing their care.

> Q1 *so it was just more to provide a more holistic approach to patient care and also that, you know, as I say I was doing the patient assessment and doing everything so you know from her side of things as well like she was signing a prescription not having seen the patient.*

A nurse prescribing warfarin, an anticoagulant drug spoke about how her prescribing role made her look at the person in totality and not just the drug.

> *Q4 And as well as that I suppose it's given me much more of a sense of being a responsible practitioner. I'm not just titrating this Warfarin dose, I'm actually looking*

at the patient holistically and it does make me think much more about my responsibility and the totality of my role.

Again, this participant spoke about the factors they now take into consideration when prescribing and how this increased involvement in the person's care is for them offering the person holistic care.

Q4 I think increased safety, making sure of my person's clinical status and renal function. It's much more satisfying because I can give them a complete package of care so and thinking more holistically about the patient I think and about their clinical status.

Midwifery led care in Ireland has been evolving in Ireland and this quote from a midwife demonstrates how midwifery prescribing now can offer the midwives that holistic midwifery led care for the woman throughout the woman's pregnancy.

Q5 *No and I suppose from our point of view it gives us a sense of achievement, you know, that you can look after your own patients and you know have them completely ready to go home or if they need pain relief to give it to them, you're not waiting around for somebody… So yeah I mean some women would use the whole service and not see any doctor which is great really when they don't need to, you know.*

ANPs in Emergency departments in Ireland, have been running triage for people coming into minor injury clinics, and having completed all the assessment, test and diagnosis, at the last stage would have to hand over the patient to a doctor for the prescription, nurse prescribing allowed them care for the patient holistically.

Q10 The first one was that as a nurse practitioner you work autonomously, independently, you look after your own cohort of patients, to be able to assess somebody, examine them, order any tests and investigations, come up with a diagnosis and the last link in the chain was prescribing some kind of medication. So you would have to leave your clinical area, find a colleague who hasn't seen the patient, who hasn't examined the patient and look for medication from them. So I thought that was you know not really working holistically and independently so prescribing ticked that box.

While this section focused on the holistic aspect of nurse/midwifery prescribing, it also highlights, how prescribing was the missing piece in the process of caring for the patient, which will be dealt with in the next section.

6.4.7.2 The Gap in Care

A thread running through the interviews from both qualified and candidate prescribers, was how nurse/midwife prescribing closed the gap in care for them in terms of the process of caring for their patients. When nurse/midwife prescribing was introduced in 2007, one of the main reasons given for introducing it was, to make the journey through the health system easier; some of these quotes illustrate how nurse/midwife prescribing has achieved this. Also, they express the frustration of the nurses for the patients on having to wait for doctors.

> *C4 I definitely thought as well that it would be an asset working in the community when you don't have a doctor with you all the time… And it might make the care a bit more efficient.*
>
> *C9 I suppose the one thing that would keep cropping up is that we would have 24-hour cover and you would be stuck for a doctor for a very small thing …so then it was frustrating that you couldn't give the care to the patient and you had to wait whatever and sometimes they mightn't fax it down and you would be waiting and then it was time consuming as well, so that was that, so that was the main, that was the main thing really …*
>
> *Q9 We would have medical officers on site like registered medical practitioner on site but sometimes … they may have to go about a mile away and attend to something there and, now, that's not an emergency but then sometimes something else might come up and they may not actually get around to coming back and if you need something charted or needs to be rewritten sometimes it may not be possible. So now I can just attend to it myself.*

The delay in treating patients was spoken about by most of the participants, even those based in the acute hospitals, which have doctors on duty all the time. The services in which this delay was more noticeable were services where they were relying on the Doctor on call service, such as older person care, community, and intellectual disability services. The doctor on call service covers the wider community as well as these services. Sometimes delays in the doctor on call coming might necessitate the person being

removed to an acute hospital for a prescription rather than a nurse prescriber being able to prescribe a drug.

This section examined the responses of the participants in terms of how the nurse prescribing programme had affected the participants' clinical practice or thinking. The participants described various ways in which their clinical practice and thinking had changed. They spoke about cautious practice, the professionalism of nursing and midwifery, confidence and the scope of practice and the impact of nurse/midwife prescribing. The next theme to be explored is how the nurse/midwife prescribing programme has influenced or changed their view of prescribing practices.

6.5 The influence of the programme on prescribing practices

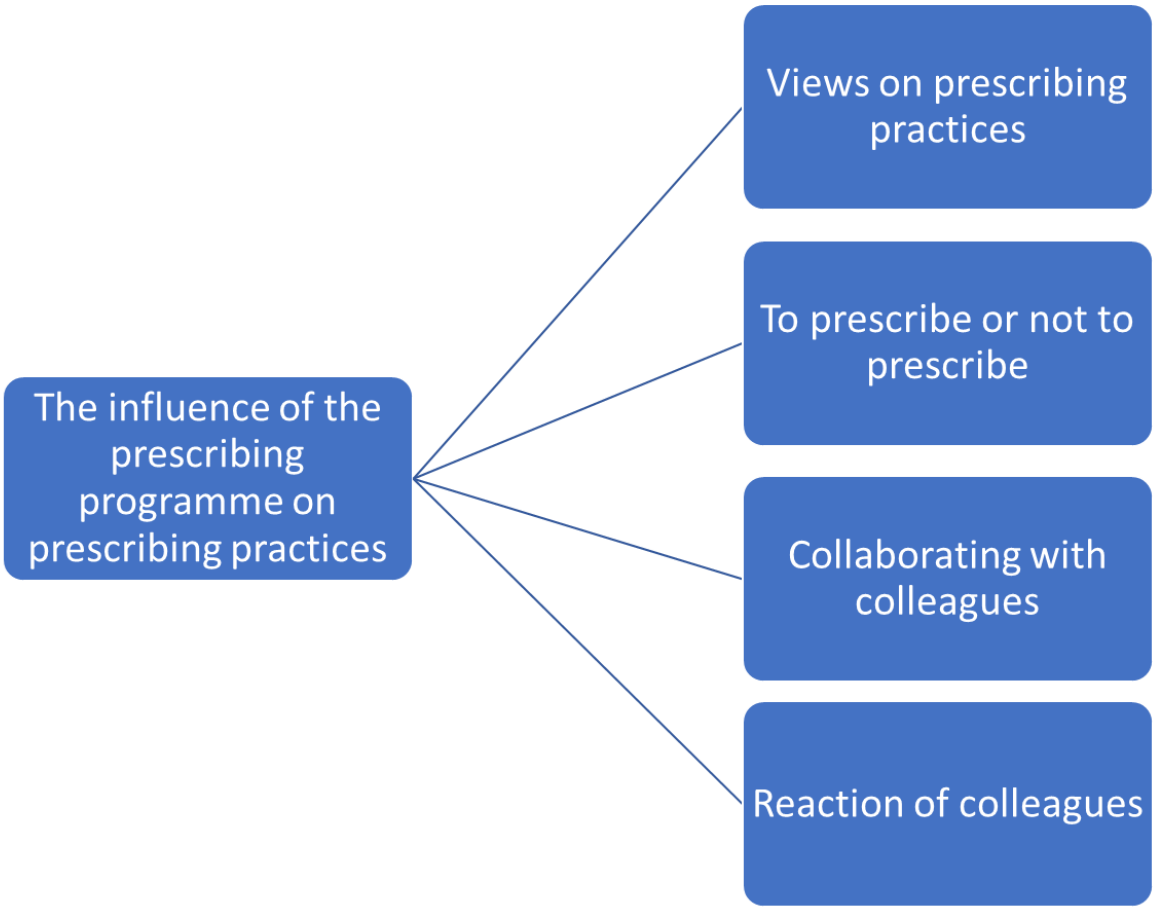


Figure 6.4: The influence of the programme on prescribing practices

This theme dealt with how the nurse/midwife prescribing programme has influenced or changed the participants' view of prescribing practice. It is noteworthy that the participants volunteered to be in the study and therefore had a positive view of prescribing, otherwise it would be questionable as why they were prescribing in the first place. Finally, even those participants who were asked to undertake nurse/midwife prescribing by their service appeared to be progressive in their clinical practice and attitude to new developments in nursing. A number of categories emerged under this theme, views on prescribing, to prescribe or not to prescribe, working with colleagues, the

reaction of colleagues and nurse/midwife prescribing as a teaching opportunity.

6.5.1 Views on Prescribing Practices

Several of the participants spoke about the absence of the rigour in prescribing practices of some doctors when compared to the governance structures in nurse/midwife prescribing, firstly in relation to supervision of newly qualified doctors versus the supervision of nurse/midwife prescribers.

> *Q4 yeah but I think it is causing them to look at medical prescribing*

Another participant expressed the view, that some doctors only engage in the final part of the prescribing process, writing the prescription and would have not met the patient let alone examined them.

> *Q5 And the doctor will just stand at the desk and will not see the patient at all… There may be a list of prescriptions for him or her to do and she or he will just do them without ever seeing the patient*

In the case of participants from an older person or mental health setting, they asserted the opinion that there was too much polypharmacy, potentially resulting in an adverse outcome for the patient.

> *C1 I suppose the one thing that really jumps out for me in mental health is poly-pharmacy.*

Finally, this participant spoke about the need to prescribe medication, which will have a therapeutic effect on the patient.

> *C2 So I think I would have, I've developed a respect that you don't just throw a prescription at it, you have to quantify why you have prescribed what you have prescribed and parent, parental anxiety is not a good enough reason.*

Overall, the participants' view of prescribing was it was an important activity, one which could have adverse consequences for the patients, however they were concerned that some doctors were prescribing without seeing the patient, that medication was being too easily prescribed leading to

polypharmacy and that it was important the medicine would have a therapeutic effect on the patient.

6.5.2 To Prescribe or not to prescribe

Once someone becomes a nurse/midwife prescriber, the emphasis shifts to prescribing. However just because these nurse/midwife prescribers had prescriptive authority, they now felt they have the expertise to make decisions to not prescribe, as well as to prescribe, which for some of them this was a revelation and at the core of the concept of being an independent nurse/midwife prescriber. In other words, just because they could prescriber did not mean they had to in all cases.

There are several outcomes which can occur from a nurse/prescribing consultation, these include, starting a prescription, stopping a prescription, changing the dose or route, changing the time of administration drug or the nurse/midwife prescriber can decide that nothing need to be prescribed or changed, or finally the patient may just be referred on to the doctor. The automatic expectations of colleagues seem to be that the nurse/midwife prescriber will prescribe, however the nurse/midwife prescribers themselves are confident that in some cases the outcome of the consultation or episode of care is, that no prescription is required and possibly a need to review the patient later. These nurse/midwife prescribers now are acutely aware of the consequences of writing a prescription for the patient, in terms of side effects of drugs, risk of polypharmacy and overall, the overuse of certain medications in Ireland such as antibiotics.

> *Q2 So I'll come in and I'll do my assessment and I'll fill in my notes, was called to see such and such, on assessment this is what I found, I have decided not to prescribe on this occasion but [the patient] can be reviewed by the GP in the morning.*

This next quote reflects the reality of not every episode of care or consultation resulting in a prescription being written.

Q6 Yeah, yeah that is very true, and we would be very similar, you know you could see ten patients a day. Some days you might prescribe for six, other days one, you know or other days none, it just depends.

Avoiding prescribing drugs which may cause the patient side effects and then promoting the use of over-the-counter drugs, which in some cases are just as effective, but have less interactions, can be an outcome of the consultation process

Q6 so if you have a choice you kind of think oh look they will be fine with ibuprofen over the counter as opposed to giving them Difene you'll say oh go for the ibuprofen which I know is obviously the better choice in that scenario, because it's got less interactions

Finally, stopping a medicine is something that the nurse/midwife prescriber may do for the patient, and this ability is vital, as it may be the nurse/midwife prescriber who may see all the medications a patient is prescribed. This is particularly relevant as patients may be getting a prescription from the GP and a hospital doctor and sometimes one doctor does not see the complete list of drugs, or on other occasions, the patient may not remember all of their medications.

Q14 so before I did the programme I wasn't able to prescribe. It would make me look at all the drugs the patients are on now rather than just the drugs that I was prescribing. Okay, so yes it has. It would make me be more thorough in looking at their bloods to see what other symptoms they may have or things that may interact with the drugs I'm prescribing and it would also make me look at drugs that probably could be stopped as well.

The importance of realizing that a prescription does not have to start as well as altering it or stopping it are all vital components of the prescribing consultation. The data would indicate that the participants are engaged in prescribing activity where there are several outcomes and perhaps the focus needs to change from a prescribing outcome to a consultation outcome.

When the interactions of the drug on the patient's system is considered, the nurse/midwife prescriber is more inclined to consider a non-pharmacological treatment first as in these illustrations.

Q1 we'll get you off the cigarettes if you're a smoker, you know do all the non-pharmacological type stuff first. We'll give them a trial for 3 months and then if nothing has happening then we'll then introduce some medication then.

This increased awareness of the consequences of medication on the patient's system is appropriate, as previously the nurse/midwife may just have asked the doctor for a prescription for the patient. This doctor may not even have seen the patient so the consideration of a non-pharmacological treatment would not have happened.

> *Q1 I suppose yeah I mean you just don't go in kind of straightaway with a drug, do you know like, you'd be thinking as I say like you know is there something different we could be doing here that's non-pharmacological and you're only introducing a drug so you realise now that you're actually putting … in some patients you might be putting more pressure on their liver or their kidneys because they're already being compromised anyway by what they're on but you don't want to enhance that from that side of things, so you're just more aware of things I suppose, you know.*

Use of non-pharmacological treatments as opposed to pharmacological ones, does appear in some cases to benefit patients, however these treatments may not have been identified if the nurse/midwife was not a prescriber and had not the extra or recent knowledge of the effects of the medication on the patient. This increased awareness and change in the treatment of patients would be greatly served by some research in this area, to measure perhaps, an unintended consequence of nurse/midwife prescribing, resulting in less harm for patients and lower economic costs.

A number of the participants talked about the pressure to prescribe, and in some cases, they felt the same pressures to prescribe as their medical colleagues. In addition, a number of the candidate prescribers who were not yet prescribing, were able to identify particular situations where they would be under pressure, a pressure they hoped to resist. This quote from a practice nurse, is quite typical of the reaction by patients, who are cared for by nurse prescriber in the practice. The money concern or the perceived value for money does not appear to be a pressure, this could be due to the newness of the relative newness of the nurse prescriber. The patients perhaps did not also realize that the practice nurse could prescribe; the reduced cost of the consultation with the practice nurse or the hands on treatment commonly given by the practice nurses assuages any desire for a prescription.

Q13 Absolutely and that's one thing about the course, they did talk a lot about overuse of antibiotics which I thought was great because we are terrible in Ireland and we know if someone goes to the GP they give them €50 and they expect to walk out with a prescription…And that's the beauty of nurse prescribing, I don't charge, so if I say to somebody 'No, we'll pop an antimicrobial on there or we'll use a bit of iodine' etc., they feel happy with that, they don't expect to go out with a prescription for antibiotics so ...

In the mental health setting, the pressure to prescribe can be quite heightened due to the addictive nature of some of the medications. In this example the participant speaks about a patient who is addicted to the drug Alprazolam, and it is an example of how the patients can put the prescriber under pressure to maintain a dose or raise it, even though the recommendations from the pharmaceutical company would be to use the drug for a short while only. The quote also shows how this nurse currently deals with situations like this by talking with the patient and giving them information about the medication.

C5 He refused to come to clinic yesterday, he rang me there now and he's saying 'I'm a bit on edge today and I'm after making an appointment to go in and see my GP' and I know he's going in and asking for her to up it [medication] to three times a day again … I think if he'd been informed really from day one, you know, how addictive they can be … I think generally people are more informed now but I think there's still gaps in it that you know we just sometimes we say take this and we don't really explain why we think they should take this or you know why they shouldn't.

This candidate prescriber while not yet prescribing, speaks about her medical colleagues and their lack of knowledge about nurse prescribing and she feels she will have to be assertive and resist the pressure to prescribe placed on her by medical staff.

C7 Yeah. I think it's the assertiveness. I think it's to be assertive, to stand up to doctors and say 'I don't think I need to prescribe' or 'I don't feel comfortable prescribing this' or 'I think no' do you know I think it's confidence and assertiveness. I think we have this new role but we're kind of in between, yeah, we're still nurses but we're kind of branching into the kind of medical side of things and I think sometimes our roles can get confused so I think sometimes maybe doctors will be thinking oh because she can prescribe now she'll be able to do this and that and no.

Parental anxiety is mentioned in this next quote, when children are sick the helplessness experienced by parents can cause them to seek assurances for their child to get better through the use of medicines.

C2 So I think I would have, I've developed a respect that you don't just throw a prescription at it, you have to quantify why you have prescribed what you have prescribed and parent, parental anxiety is not a good enough reason.

Pressure from nursing colleagues to prescribe was something this participant speaks about in this quote, her colleagues clearly believed she is somehow more likely to prescribe than the GP, who has obviously made a clinical decision that the patient does not have the clinical signs, which indicate the prescribing of an antibiotic. This is also an example of the Friday 'just in case' prescription.

Q2 Sometimes, it's very rare too, because if the GP has been on site and they [nurses] have looked for an antibiotic say for a chest infection and they haven't got it and they're faced into a long weekend I would be very wary that maybe we'll wait until she's(sic the GP) gone and we'll contact [the nurse prescriber] and [the nurse prescriber] will prescribe the antibiotic.

The pressure to prescribe is something which was experienced by some of the participants, and for similar reasons experienced by medical doctors, do we interpret that as an acceptance by patients that nurse/midwife prescribers can prescribe as well as doctors or are patients less discerning about who writes the prescription than receiving it? An awareness of the pressure to prescribe is important for nurse/midwife prescribers and perhaps the ways in which nurse/midwives have dealt with patients prior to nurse/midwife prescribing needs to continue namely, imparting information and offering non-pharmacological alternatives.

In these sections, three categories were examined: outcomes of prescribing consultations, non-pharmacological treatments and the pressure to prescribe. The participants were aware of the need to examine if they really needed to prescribe for patients and that prescribing a medication was not always the correct outcome. Some patient issues could be dealt with ,the use of non-pharmacological treatments, also the realization that the pressure to prescribe needs to be resisted from patients, medical staff and nursing colleagues and that only when the clinical indications warrant a prescription should one be written.

6.5.3 Collaborating with Colleagues

Nurses and Midwives rarely work in complete isolation; even when in the community setting, they always have the option of telephoning a colleague to ask advice. Therefore, working effectively with other members of the multidisciplinary team is vital for the successful care of the patient. Activities such as ward rounds, participating in clinics and at team meetings are opportunities for all the team to share knowledge about the progress of patients. Clinical setting such as mental health has perhaps the best example of how the multidisciplinary team can effectively operate. Some of the participants spoke about how the prescribing programme has improved their collaboration skills, which ultimately will benefit the patient.

> *Q9 Again the course develops your skills on collaboration. So again I'm more forthcoming to collaborate with the multi-disciplinary team.*

This participant demonstrates in this quote how they are more actively engaged in communication with the multidisciplinary team.

> *Q12 Yeah I think I have definitely enhanced my relationship with all the other team members now more so than before, because you are always looking for advice as well, particularly when I was training for the six months I was always talking to the pharmacist, I'd often pick up the phone and ring her to see you know what is the best practice with this particular drug.*

Again, the change in passivity in the nurse/midwife doctor relationship is reported here.

> *C4 Definitely. I definitely discuss the medication a lot more with the doctors rather than them just suggesting something and me going off and telling the patient and giving them their prescription…I think I can have a bit more debate about it.*

The mentor/mentee relationship gives the candidates an opportunity to work with a doctor and communicate with them in a way they would not have previously.

> *C8 I think that it probably raises your profile in your job because you get more respect from your medical colleagues that you have reached a certain level. I think it gives you an opportunity to demonstrate to a consultant that you work very closely with that you*

know your stuff, whereas up to now there is no opportunity to demonstrate what you know.

For the successful treatment of patients, it is vital that all the members of the multidisciplinary team collaborate, some of the participants in this study reported that undertaking the prescribing programme and being a nurse prescriber enhanced their ability to collaborate within this team. However, it is noteworthy that three of the participants who spoke about this issue were at staff nurse grade.

The participants talked about other colleagues and their attitude to them as nurse prescribers some of it was positive, but some of it was negative and in one case quite obstructive. Some of the participants seemed to indicate it was lack of knowledge of what they did or could do as nurse prescribers that was one of the big obstacles when prescribing.

Q9 Well like in those situations it depends on the experience of the person who is asking, who is referring the problem to you, you know and like as time goes by and people become more aware of what basically what practices a nurse prescriber can perform, more people will start to ask. I have to say there is a total different side of the phenomenon. Like there's an attitude that even if they know you can prescribe that they still won't ask.

In this case this participant was asked by a nursing colleague to call the doctor to get paracetamol prescribed for a patient, even though this nurse knew that the participant was a nurse prescriber and could prescribe for the patient, with a consequential delay for the patient.

Q9 Yes, like I've often been asked by people who know, for example, let's say paracetamol, who know I can prescribe it or write prescriptions for it. I've been often asked even though they know would I get the doctor in to get that prescribed, you know prescribed even though they, you know.

Lack of understanding of what the nurse/midwife prescriber can prescribe is illustrated in this next quote, where the nursing colleagues of the nurse prescriber appear to think that the nurse prescriber has a carte blanche to prescribe, without realizing the limitations of the scope of practice and the CPA.

Q10 'but you can prescribe analgesia and you can prescribe Morphine so what's the problem?' and I'm saying 'Well you kind of … you know there's a process, you have to have your own patient and you can't just be prescribing' so and so forth, so that's interesting, what others think. .

One participant spoke about how other nursing colleagues viewed her, as she was undertaking the nurse/midwife prescribing programme, that she was becoming a doctor, now that she could prescribe and still be a nurse, this irked her and she spoke about wanting to be a nurse for years, however nurse prescribing would make her a better nurse.

C3 I don't want to be a doctor…so I just say I just want to be a really, really good nurse.

Improvements in how the nurse prescribers dealt with patients, was noted by this participant's colleagues, and indeed how she spoke to her colleagues.

C4 Even one of the girls I work with has said to me recently …she can see a big difference in how I talk to patients about medication and things that I say even in conversation to her.

Some of the more negative views expressed by colleagues about nurse prescribing was the lack of financial reward for being a nurse/midwife prescriber and one participant expressed the view that was for some a barrier to not undertaking the programme.

C10 You will get nothing for it.

C2 what are you doing that course for number one, yeah number two would be sure we are not going to get anything more [money]for it.

Overall lack of understanding of the nature and extent of nurse prescribing seems to be the predominating factor for the negative response to nurse/midwife prescribing from colleagues; however, some colleagues were able to see the benefits of the initiative.

Traditionally, interns, senior house officers and registrars change frequently within the HSE, some only working within a particular clinical specialty for six months and initially they may have little experience in that area compared to the nurses/midwives who have been in the clinical area for years and could be practicing at CNS or ANP level. Nurse/midwife prescribers are aware of

how they may be perceived as deskilling or preventing the learning about prescribing for some doctors, with some feeling anxiety that nurse/midwife prescribers will take over the doctor's role,

> *C3 They just didn't want it. Other GP's just don't want it. They seem to think that nurses are going to take over doctors. Whereas I kind of felt, do you not think, it's just so complementary to each other, it's phenomenal. But you've always for a backup. And you've always got a second opinion. It is so complementary. I just think they are missing the point.*

Particularly in areas such as Emergency care, the majority of the small injury clinics in Ireland are ANP led and the ANP effectively completes all the prescribing for the patients. An Emergency nurse highlights how the doctors will still have opportunities to prescribe.

> *Q6 and I don't think it will ever grow exponentially, that it will be taking over totally, I think the doctors are still getting the experience because they are still prescribing on many occasions.*

However, she does acknowledge that it may affect the junior doctors as they do need the experience of prescribing.

> *Q6 I think it becomes a problem for the junior doctors if you're taking all that experience away from them.*

She further points out that in the very specialist areas, it may also be a problem as the nurses prescribing in those clinical areas are highly experienced in either CNS or ANP roles.

> *Q6 In our role I don't think it's a negative for them. Maybe in roles like cardiology, diabetes, things like that, maybe it is a negative because they're not getting the same exact experience but most of the nurses who are prescribing in those specialties again are at very senior level.*

6.5.4 Reaction of colleagues

The change in the participants' practice did not occur in a vacuum and had an impact on their relationship with colleagues. Some respondents found that their colleagues did not understand the limits to their prescriptive authority.

Q10 And the interesting thing with me in work now is staff say 'Oh quick, give your man there something, some analgesia there, he's a broken neck or back' …and I'm saying 'Well you kind of ... you know there's a process, you have to have your own patient and you can't just be prescribing' so and so forth, so that's interesting, what others think. So they think go off and do 6 months training and then you can prescribe all over the house.

Conversely, some experienced some resistance from colleagues, and a reluctance to call on them to prescribe.

Q9 Well like in those situations it depends on the experience of the person who is asking, who is referring the problem to you, you know and like as time goes by and people become more aware of what basically what practices a nurse prescriber can perform, more people will start to ask. I have to say there is a total different side of the phenomenon. Like there's an attitude that even if they know you can prescribe that they still won't ask.

C3 And everyone's like oh you'll be a doctor now, sure you're nearly as good as a doctor, and I'm kind of saying I don't want to be a doctor, I want to be a nurse.

The change in role brought with it a change in professional relationships with colleagues. On the positive side, most found that they were more involved in professional conversations with doctors. As one participant said

C8 I think that it probably raises your profile in your job because you get more respect from your medical colleagues that you have reached a certain level.

On the other hand, a few experienced resentments from colleagues. One respondent stated that,

C3 other GP's just don't want it. They seem to think that nurses are going to take over doctors.

This theme examined how the nurse/midwife prescribing programme had changed or influenced the participants' view of prescribing practice, whether to prescribe or not, collaborating with colleagues and the reaction of colleagues, were identified by the participants. In the next section, the issues in relation to the prescribing decision-making framework are presented.

6.6 The Decision-Making Framework

6.6.1 The Nurse/midwife prescribing decision making framework

Like the scope of practice framework, the nurse/midwife prescribing decision-making framework is a guide to assist the nurse or midwife systematically go through the steps of prescribing, adhering to best practice and ensuring safety. All of those who undertake the programme are exposed to the framework; however, for some, they already were very clear on how they made decisions and assessed patients, so they used previous frameworks. These tended to be the CNS and ANP clinical grades. For those who were qualified a while and had used the prescribing framework from the start, there was evidence that the framework was now being unconsciously used to assist the qualified prescriber proceed with a prescription or not.

> *Q2 I suppose I know it off by heart really, in the sense that I'd do it unconsciously. Like it's there. I don't use it but I suppose I do use it, I'll take that back, I do use it. I don't go round with it on a piece of paper.*

> *Q1 But now I don't refer to it I suppose you just get, you know kind of what you're confident with and what you're not, do you know, and that's it, do you know, in the beginning kind of it was good, it was a good kind of guide.*

The logical nature of the framework is commented on next.

> *Q2 Yes. I's common sense really, you know. You'd only sort of put down on paper what we mentally do anyway. It's innate …*

Others relied on their experience and expertise and possibly are using it, without being conscious of it.

> *Q3 I don't use it. Well I know it's there, but to be honest practically, I mean you're not going to be in a ward and saying hold on till I get my decision making framework. You're using your experience and your knowledge and your accountability and responsibility.*

This integration of the framework into this participant's way of making decisions alongside the protocols they use, ensures they engage in best practice and practice safely.

Q4 I did, yeah I did for my thinking. I mean I don't have it put up on the wall and I don't consciously think of it but I am, I think it's just in my mind-set now, yeah, because I work under very, very clear protocols.

For this ANP participant the years of working within a specialist role, they had already a finely developed a framework for thinking or making decisions, therefore their established framework was used.

Q6 I suppose not particularly. I think it's useful for people when they're starting out and I suppose there are all different stages when people take on a nurse prescribing course… I think it has a place. I suppose I took on nurse prescribing when I was at a very different stage in my professional career, where I was used to prescribing, that's not a reason not to use a tool like that ... but I suppose I felt confident that my decision-making pattern was firmly established within my role.

Q13 Actually no yeah I suppose I'd probably have a framework in my head rather than using the decision tree.

Again, this ANP talks about experience versus inexperience, but also the specialist versus the general nursing, in some ways there is an implication that nurses working in non-specialist roles are involved in fairly uncomplicated prescribing.

Q7 it more provides a framework or a pathway for them to follow when they're kind of establishing their scope of practice... because sometimes you see in the context of what I do myself as an Advance Nurse Practitioner in Emergency Care it's very clear, it's not that it's different but it is very clear cut what our scope is, it's very easy cut out what our scope of practice is, even in the context of prescribing.

Here again, examining the inexperienced prescriber, and how they accede to the regulatory authority.

C15 No, well I suppose because I'm such a novice that that's what I, that's what I use and probably will use from now to eternity. Like we have to abide by what our, do you know, I'm a firm believer that if An Bord Altranais are putting it out there, we're answerable to them, that's what you abide by.

Finally, an example from a participant who was working at staff nurse grade, spoke about not being familiar with other frameworks.

C8 There was no prior clinical decision-making tool, that's the only tool that I'm aware of.

Participants' use of the prescribing decision-making framework is mixed, some have embraced it and use it to guide their prescribing decisions, some have unconsciously integrated it into their decision-making processes, others such as the CNS and ANP clinical grades, already had frameworks they used as part of their specialized roles. However, these nurses felt it was beneficial to the inexperienced nurse/midwife or those not in specialized clinical grades. The decision-making framework is not unlike the scope of practice in many aspects, and every nurse/midwife is encouraged to use this, therefore as long as some form of framework is used to guide practice, there are the safeguards for best practice and safe care. The positive response from those participants in the study to the framework points to its logical progression and ease of use in real clinical situations.

6.7 The preparedness of the nurse/midwife prescribers

6.7.1 Views on the course

For many of the registered participants who were prescribing some up to 4 years, the course had prepared them for prescribing and they appeared content with this view.

This person saw the breath of the course as being important.

> *Q1: For me personally the course covered nearly all of the disease areas and everything that I needed it to cover, do you know, and I did feel well prepared coming away from it.*

While the course prepared this participant, the importance of completing the course and the final component of engaging in this new clinical role was important vital.

> *Q2: It prepared me somewhat; part of the way, but it's like riding a bike. You can read about riding a bike for as long as you like, but once (sic) you get up and ride the bike, you'll never ride a bike. So therefore you can do course upon course upon course, but you need to park that at some stage and go on and do it. So yes it did prepare me, but what actually would round it all off is to go out and actually do it.*

Q9:I would say it prepares you for the role that you assume when you've, when you register you know.

For this participant, the programme did integrate all the components of the prescribing process right through from assessment of the patient to writing the prescription.

Q10: I think, well personally speaking, it certainly did [prepare me] because it gave you a good understanding of physical examination, so the elements involved in prescribing would be taking a history which is covered on the course, doing a physical examination, which is covered on the course, coming up with an impression or diagnosis which leads on from those previous two, so therefore you should have an understanding of what you're dealing with. Then, once you know what you're dealing with then, you can decide on what pharmacology you want to use. So then knowing what to use is also included in your course, picking the right drugs and the right actions and interactions etc. So yes all of the elements are there and the physical examination and the drugs and how they work and interact so they're all included. I think as a nurse practitioner and maybe as a CNS that comes as second nature.

While this participant dwells on the fact, she was mature and had not studied in a while, she still felt prepared to prescribe.

Q11: probably if you were talking to the younger students or younger ladies, now I'm being honest about it, they would probably say that they could probably – how would you say it now – they'd probably have more in-depth knowledge because they're more recently thing … but for me, do I think it helped prepare me, yeah… Well I am a nurse prescriber I suppose and it did what it said on the tin as regards that, whether it made me … again it's hard to say because it depends on the area you're working in.

Some of the participants perceived that the programme did not prepare them to engage in nurse prescribing, with several reasons for this, including the governance issues which the HEIs cannot control.

Q6: I think if anything with the nurse prescribing course what it doesn't prepare you for (laughs) is the bureaucracy once you finish the course.

Q6: And I think we were informed that we are prescribers so we will not be using protocols or guidelines but then our local drugs and therapeutics insists that we use protocols and guidelines and does not but you know I think that's something that needs to be taken to the higher level, like you're either a prescriber or you're not, and these things I think you know nobody could have prepared us for that and it's on going and it remains obstructive.

Time constraints impacted on some of the participants and the need for more supervision from the college and the mentor.

> *Q4: … I know that's a very, very strong statement but it's far too rushed. I think it would need maybe some supervision from the college as to what, the doctors who are actually doing it, what they're giving to the course. It almost needs somebody from the college there seeing …*

Issues with finding the course difficult are mentioned here,

> *Q10: I know a few people in the organisation here who have gone, done the study and it's very hard to say but some people just prescribe two paracetamols every 3 months just to keep their nurse practice development people happy. So a lot of people have now kind of discarded it because it's a kind of a little arduous, you know, the follow up afterwards so I think that puts people off.*

> *Q6: To be honest I suppose I found the nurse prescribing course frustrating and one maybe tends to dwell on the negatives when they find things frustrating.*

One of the candidate participants who was just finishing echoed some of the qualified participants' views in terms of how the programme preparing her for her new role.

> *C7: Now I do feel in a way I do feel ready.*

Finally, a candidate felt that the programme makes you aware of your limitations in terms of knowledge.

> *C14: Because I think I've learned a lot, I mean I'm not saying that I know everything but I've learned a lot and it shows how much you don't know.*

The candidate prescribers were all just finishing the prescribing programme, therefore their view of whether the programme had prepared them to prescribe was limited, as they had not started to prescribe. Nonetheless, they asserted the belief that they were ready to prescribe. However, some of them were realistic about the realities of prescribing once they start.

> *C12: Because there's so much there you need to learn, I think you need to be realistic that you're not going to come out knowing, prescribing everything… I think even after you finish the course you still need a lot of work with your GP, you need to stay very close to your mentor.*

While the research question did not ask about the governance of prescribing, it came out through questions regarding how the course prepared the

participants to prescribe and the participants speaking about different experiences of prescribing. The issues in relation to this section were mentioned more by the qualified prescribers than the candidate prescribers, as it would be expected, as the qualified prescribers are prescribing and are experiencing the realities of the governance for prescribing. For the candidate prescribers some of them were just concentrating on finishing the programme.

6.8 The changes required for the nurse/midwife prescribing programme

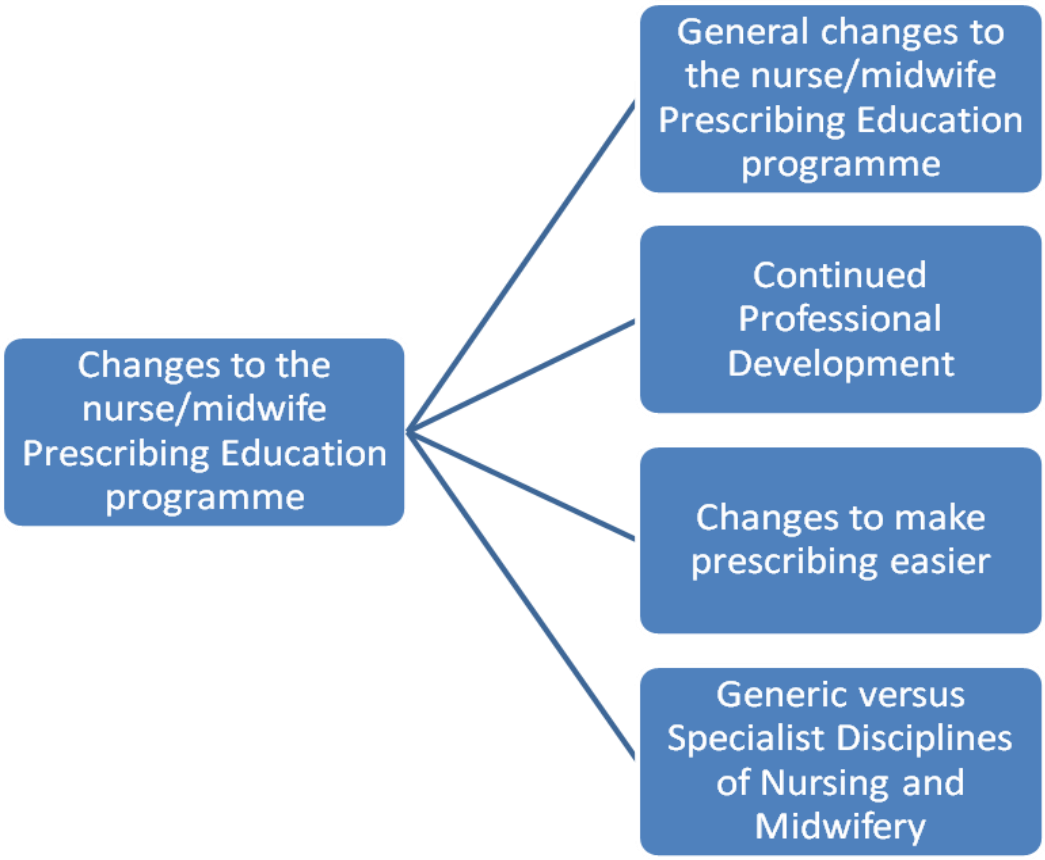


Figure 6.5 Changes to the nurse/midwife prescribing education programme

6.8.1 General changes to the nurse/midwife prescribers prescribing education programme

Evaluation of programmes is part of the natural cycle of learning for students and these participants had several suggestions to make about how this programme could be improved. Again, while the participants attended different HEIs the comments on different aspects on changing the programme had agreement among the participants. The changes suggested included the length of the programme, academics versus clinicians teaching on the programme and the content. It is worth noting that several of the participants had completed the programme when it was initially introduced in 2007, some of the changes suggest have already been undertaken.

Just as pharmacology featured heavily in the section on the beneficial parts of the programme, so again it featured in the suggested changes to the nurse/midwife prescribing programme.

> *Q4: I think maybe more in-depth into the whole pharmacokinetic side of it and applying that to the drugs that we're using…And then I think they could give you questions and they could examine you on, if you like, using a generalised question that you have to relate to your own drugs and the interaction of that and other drugs.*

> *Q5: Yes, yeah. So no I think they were definitely the main positives and I remember from the course everybody saying if only we could have had more pharmacology and more pharmacology and I think as nurses as well that, definitely my training, was definitely something that was lacking.*

Reflection is a required competency for nurse/midwife prescribing, however a number of the participants felt it unnecessary as they had studied reflection in other programmes and believed that more pharmacology was required.

> *Q6: What would I change in it? If they could take out some of the reflective thing I would think just put in more pharmacology, I think you just can't put in enough.*

A necessary change to the programme identified by a limited number of the participants' concerned the length of the programme, which is required to be at least 26 weeks in duration. Some of the suggestions were to extend the

programme to an academic year as the intensity of the programme allowed for no outside interest.

> *Q8: it's about six months and its intense six months… from Christmas until the April I literally gave up everything. Every outside activity, I had no social life, really it did take over. And I just wonder whether an academic kind of year, September till May or whatever, June would be more beneficial, because it's a lot to learn. And there's so much homework with the college I did it with, so it was intense*

Some of the participants would have like more opportunities to learn about physical health assessment and learning through clinical scenarios. There is variety across the HEIs as to how the physical health assessment is taught, however regardless of which the HEI the candidate prescribers attend, they are able to achieve the learning outcomes required by the HEI and the NMBI.

> *Q4 Probably the physical assessment side and clinical, the actual clinical scenarios of health and illness in the patient.*

Development of the CPA varies across the HEIs, some of the HEIs embed the CPA into the assessment of the programme, some HEIs do not address the development of CPA during the programme, the onus was placed on the individual candidate prescribers to develop the CPA themselves. Several of the participants reported that they felt the development of the CPA needed more emphasis during the programme.

> *Q13 So I think definitely on writing your CPA, what your needs are. I know they can change but I'm delighted it's every 2 years now as well because in the community it's so hard getting all the GPs to sign up every year. I send out stamped addressed envelopes and everything and I still didn't get them back. It took me days to go around all the GPs and get them to sign up.*

> *Q13 What was I just saying? Yeah well definitely more emphasis on writing a CPA.*

Several of the participants felt that there was no necessity to change the programme and that it was appropriately balanced with content.

> *Q5 I don't think any part of it did to be honest. I think … I don't think any part of it. I think it was very well organised… and every area got enough time you know. The pharmacy, we got a lot of lectures of pharmacy and the assessment part, we got a lot of lectures there. I think no.*

Many of the participants questioned the use of academic lecturers rather than clinicians to deliver some of the content of the programme. In particular, the

participants felt that the lectures or tutorials needed to be applied to nursing and midwifery in practice instead of the theoretical knowledge of pharmacology. Furthermore, several of them believed that the applied nursing/midwifery lectures needed to be delivered by nurse/midwife prescribers rather than medical doctors. In addition, one of the participants stated the lack of clinicians delivering the lectures had implications for the students in terms, which were the most appropriate drugs to start treating patients as a few conditions have different strands of treatment depending on the severity of a patient's condition.

> *C8 I think it is the fact that you have academics rather than clinicians delivering, delivering, they deliver a large body of information like cardiovascular or psychiatric drugs and there's no emphasis on what's first line, second line or rarely used. It's all delivered in the same vein of thought, there's no, there's no distinguishing between what is common or uncommon and I think there is a role for you know nurse prescribing CNSs to deliver some of those sessions rather than pharmacists.*

A number of the participants mentioned that they felt the entry requirements needed to be examined again because of the inclusion of nurses/midwives who were not at NFQ level 8 or even in a specialist role ie either ANP/AMP or CNS/CMS. In addition to the qualifications issue, the fact that people could be selected to go on the programme because they were senior nurse/midwives, rather than the service need was a concern for some.

> *Q7: No but it was like that I thought there was … personally, I thought there was far too much variability in candidate selection.*

The selection process was concerning for some of the participants, who were in CNS or ANP roles, there concerns were that while someone might fulfil the number of years' experience, the lack of further study may make the candidate unsuitable.

> *Q7: … well like many roles or extended roles of nursing I think that all those kind of selecting of those types of individuals should go through a fair and transparent process and unfortunately in many incidences it doesn't. Now I'm not quite sure how they manage to select candidates for the role of nurse prescribing but sometimes it was based on 'I'd like to go' or I put my hand up first or I'm the oldest in the department or I'm friends with the Director of Nursing or I'm working in clinical practice, I'm the CNM2.*

Q7: Yeah and I always thought that was a kind of a ... that was a weakness in the recruitment drive, you know.

Q7: Yes but with the caveat that I still maintain that the selection process of candidates leaves too much variability within the level or the competency of the individual.

Here again, is an example of the distinction being made between the level 8 and level 9 course, the implications for this statement are that staff nurses/midwives who had not undertaken post graduate course, would not be eligible to undertake the prescribing programme. This sentiment flies in the face of the original aspiration for the prescribing initiative, to make it available for all nurses/midwives engaged in clinical practice.

6.8.2 Continued Professional Development

While nurse/midwife prescribing programmes have been established in many HEIs around the country, little in the way of CPD is being offered by the HEIs. Furthermore, the only CPD offered to registered nurse/midwife prescribers up to this point have been free HSE quarterly meetings which included a journal club and presentations pertaining to various clinical settings, attendance at these meetings not compulsory. This need to engage in CPD was a pressing issue for some of the participants.

Q1 And what I would like to see I would like to see kind of regular updates where you could go you know maybe twice a year or once a year anyway and just you know get maybe new stuff that has come on the market that we would be meeting on a regular basis.

C10 I think that maybe we should be like informed of you know we should maybe go back like once a year and do some kind of a day course or an update or just anything new in even like in general in medicines and just something to keep you up to date every year you know in prescribing.

6.8.3 Changes to make prescribing easier

This section examines several issues in prescribing as spoken about in the interviews by the participants including collaborative practice agreement (CPA), HSE online minimum data set, drugs and therapeutic committees, and the issue of not registering as a registered nurse prescriber.

Many of the participants pointed to developing the CPA as difficult and that they required assistance with its development. The focus of this study was not to compare one HEI with another, suffice to say that a number of the participants did mention in their interviews that they had no CPA developed when they completed the programme.

> *Q1 You know and I know that doesn't happen on all courses so you know and for nurses that did other courses that couldn't do that they had to go and start from scratch when they were finished so I thought from that point of view it was great.*

For those participants who had their CPA developed during the programme the views were positive.

> *Q4 You actually had to do an assignment about you were preparing your CPA so that pushed you to be in process with it …they really did cause me to have to go and do in-depth research on what was a problem area in my clinic.*

Once the candidate prescribers finished the programme, they caught up with work and family, the CPA would become a secondary consideration and there would be a delay in its development, this quote highlights the issues that can occur to delay the CPA.

> *Q4 I think the delay really was … I think I had personal issues because my mum died that that might have been partly delayed and my consultant left and then the whole off-label thing actually did not make it worth my while at the time.*

The CPA is vital for nurse/midwife prescribing and the participants' experiences of developing it and working with it were quite mixed, however while some complained about its limitations, none of them argued for its removal.

There was no intention to investigate the HSE Data collection system during this study, nevertheless, when asking the participants about improvements to the programme, many of them spoke about this data base. The HSE online data collection system records prescribing activity in the public health sector in Ireland. Again, this was an area not covered by the requirements and standards of the NMBI, but the HSE staff would undertake a demonstration of its operation to all candidate prescribers while they undertook the prescribing programme. There were very mixed responses to the HSE online data base. For some it was beneficial it reminded them of the importance of their prescribing and how it could be used to demonstrate their prescribing activity.

> *Q2 Now having said that the fact that you've to go back in and log it all back into your website and it sort of brings you back to basics as well to say you know I am accountable… Oh I like the data sets [data collection system] yeah and then you know I … well I do but it also proves to the person that asked me do you want to do the course, my Director of Nursing, look at what I am prescribing, how often I'm prescribing, the times in the evenings I'm prescribing.*

Interestingly the database only records prescriptions so where a nurse/midwife prescriber is involved in an episode of care where the outcome is not a prescription this is not recorded on the database. This episode of care potentially may have prevented an older person being transferred to an acute hospital, however the database does not record this activity as this participant stated.

> *Q2 Because I don't think there is a place on the data set*

One positive comment on the inputting of the prescriptions concerned its ease of use.

> *Q5 Logging the prescriptions online is very much … very easy really, step by step, it's very simple you know.*

And this was the intention of the HSE just a few clicks and the prescription was inputted. However, another participant questioned the value of the information that is extracted from the data base.

> *Q6 Now I can see where the database is coming from but again I think they've gleaned useful information from it but maybe now it's time to let up a little bit but I can sort of see I suppose in the future all prescriptions will be electronic and then they can*

hopefully glean their information from that… it just seems like a bit of an exercise for all of us and actually the information is only statistics, there's no real ... there's no information about the duration of the prescriptions we're prescribing which to me are the important things.

Regarding the time taken up inputting the prescriptions, a few the participants felt it was an additional burden on their already busy working day.

Q6 And I would say one thing about the database is it puts you off prescribing… Because it's more work for you to go and input data so if you have a choice you kind of think oh look they will be fine with ibuprofen over the counter as opposed to giving them Difene you'll say oh go for the ibuprofen which I know is obviously the better choice in that scenario, because it's go less interactions, but it can be off putting.

Q14 Because I could prescribe … like as you can see I've just prescribed two things there, I just prescribed … that's probably the tenth thing I've prescribed today. I'll be finished here … I'm supposed to be finished at 4.30 today, say 3.30/4.30, I won't get out probably till 5.00 so I'll probably just put in one or two things rather than the whole lot because of time, time constraints.

None of the candidate prescribers or prescribers from a private clinical site made any reference to this database as the candidate prescribers did not use it yet and the private sector do not input any of their prescriptions into this HSE system.

The safeguards of the Drugs and Therapeutics committee are vital, however a few the participants pointed to the committee being a stumbling block to their registration progress.

C2 I don't know if they are objecting, I think it's all a very new area and they I think, as far as I know and I didn't get into it too much, as far as I know the drugs and therapeutics board haven't met.

In some centres, the responsibility of the committee to approve the nurse/midwife prescribers does appear to engender caution in their decision to approve the nurse prescriber.

Q2 So it took me another year to get a decent list of medications, I think they were nervous. It was new to the area. They were nervous of me but like I didn't go to … and spent that many weeks to prescribe two paracetamol whereas if I told the mother of the child on your way call into the chemist and get a box of Panadol.

Medical doctors working in the same site as the nurse/midwife prescribers, are not subject to any level of monitoring in respect to their prescribing and they prescribe from the unrestricted formulary from the moment they qualify. However, one of the nurse prescribers spoke about the lack of equity in monitoring of the prescribing with regard to doctors and nurse/midwife prescribers.

> *Q3 I have say twelve items on my collaborative practice agreement, because this is a discussion that's happened here as well with the Drugs and Therapeutic Committee, the medical staff feel that we, the nurses should be kind of monitored or of course, there's got to be risk assessments in place but my point is well if we're being monitored, the medical staff also have to be monitored because I may only have twelve drugs but I know them very well. Whereas the medical staff has got access to a whole BNF, so it's about quality.*

The comments about the Drugs and Therapeutics committees were mixed, however all the participants who talked about the DTC, did realize their importance in the governance of nurse/midwife prescribing.

A few participants spoke about the high numbers of people who have completed the course and are not registered and therefore their prescribing is delayed. This was concerning for them; they felt the programme was good but for various reasons people were not registered. One person was concerned that a person could be up to two years finished the programme and then register.

> *Q7I think it's wrong that somebody can do a course and then 2 years later not have started the role and then kind of start off as if, you know, does that make sense?*

This issue of not registering or delays in registering has been concerning the HSE also and has been written about in the UK context (Bashford 2005). The report of the HSE includes the number who have completed the programme and then the number who have registered and there is still a large number of nurse/midwives who don't register quickly or at all.

> *Q9 But I think the elements to it [programme] are probably okay. I think a lot of people did struggle and a lot of people maybe have finished and maybe have not done anything with it and haven't maybe … I get a sense that a lot of people … I know a few*

people in the organisation here who have gone, done the study and it's very hard to say but some people just prescribe two paracetamol every 3 months just to keep their nurse practice development people happy. So a lot of people have now kind of discarded it (sic prescribing) because it's a kind of a little arduous, you know, the follow up afterwards so I think that puts people off.

This participant was puzzled as to why some nurse/midwives do not register; however, the participant was a candidate prescriber, and perhaps because she had not started prescribing may not have been aware of all the delays that can occur while trying to get registered.

C9 But you have to progress, you have to take the step, but you probably do need a bit of support, more support there I think and if you don't have it you know good GP's then, you see I do hear … saying that over 50 per cent of people of nurse prescribers aren't practicing on things [prescribing], and you see you have to look at that, you know why so, you do this very good course and you have the skill and why isn't it being [used].

6.8.4 Generic versus Specialist Disciplines of Nursing and Midwifery

Unlike most postgraduate nursing/midwifery programmes, the nurse/midwife prescribing programme is offered to all nurses and midwives regardless of the specialist service. The implications of this are, that the programme must be broad enough to cover many prescribing areas and all the body systems and the medicines for those systems, for example cardiovascular and the medicines which are prescribed for the cardiovascular system. Against this context, the requirements and standards for the nurse midwife prescribing programme, take the view that the nurse/midwife prescriber prescribes for the whole person and therefore even if the service user is being prescribed an antidepressant, the prescriber needs to know the systemic effects of this drug on the whole body and not just on the person's mood. Many of the participants expressed the view that the programme needed to be generic i.e., broad enough for every nurse/midwife to undertake it.

Q5 It was a generic course so I didn't I suppose think about that or realise it when I first went into it but it was interesting from … I think we're all a bit sheltered in our areas maybe and it was interesting and you certainly learned different things from other people, you know.

Depending on what the clinical background of the participants their view of the programme being too generalist versus specialist was different, in this example the participant was a practice nurse, she would care for patients right through from infants to older people and therefore her range of knowledge was incredibly broad.

> *Q1 Like for me it wasn't so bad and the other thing about the course for me coming from a practice nursing background and because our role is so, so broad nearly every group of drugs and every topic was covered was relevant to us but the girls ... and there was a few girls on the course that were very specific in their role like neonates and that and they were kind of they were saying you know what were they doing nearly there and you know they found that because they had to go and learn about everything to do their exam, you know to get them through the exam and like that's, you know, you'd wonder about that even though I know you have to know kind of and have a good broad knowledge but certainly working in general practice there was a lot of the drug areas and everything that I was very familiar with and you know for me that bit was easy if you like.*

However, another of the participants from a midwifery clinical setting, articulated the view that having the programme with a more general focus was beneficial as the students learnt from each other and each other's experience in diverse clinical settings.

> *Q5 In some ways I think it's useful to have it generic because you learn from other people and you learn from different areas.*

This participant summed up for them the challenges of a generic course.

> *Q10 Yeah and the further away from your scope you got the less interested one becomes.*

While there certainly are challenges in offering the prescribing programme as a generic programme, with consequential complaints about the focus on the adult, the participants did also positively talk about the indirect learning which took place from being in class with nurses/midwives from diverse settings. However, the participants' view of the generic versus specialist idea of prescribing, in terms of prescribing was that it was holistic and has systematic effects on the human body regardless of the age, gender, or illness of the person. The requirements and standards for this programme were written with the whole body in mind, therefore while the additional learning may be

required of the specialist nurse/midwives; safe prescribing for the patient is paramount and needs to remain the focus.

6.10 Conclusion

This chapter presented the findings of the qualitative component of the research project under seven main themes. Themes which emerged from the data were, the motivation to prescribe; the useful parts of the of the programme; the effect of the programme on clinical practice and thinking, the influence of the programme on prescribing practices; the nurse/midwife prescribing decision making framework; preparedness for the role as a nurse/midwife prescriber and the changes to the nurse/midwife prescribing programme in Ireland.

The participants' motivation to prescribe was varied, falling into two categories of reasons for undertaking the programme and those included benefits to the nurse/midwife and the patient. The reasons ranged from the individual's perspective, in improving their knowledge, engaging in education, having secure legal backing in their clinical practice. However, some of the reasons were concerned with the clinical setting the participant practiced in and their role in that setting. Some were motivated as they perceived that nurse/midwife prescribing benefited the patient, in respects of the improved quality of life for the patient, increased patient satisfaction, being able to offer holistic care and finally filling in the gap in care for the patient who may spend long periods waiting for a doctor to complete a prescription.

The second theme highlighted the useful or beneficial components of the nurse/midwife prescribing programme. The participants spoke most frequently about pharmacology, followed by the physical assessment, the medical mentor role and then the professional and legal issues. Aspects of pharmacology, which were viewed as beneficial, included drug interactions,

pharmacodynamics, pharmacokinetics and contraindications. However, several of the participants felt the level of detail in relation to medicines was too great. Being able to undertake a complete physical assessment was a skill many of the participants found added to their competency, however several mental health nurses wondered how useful it was in their setting. One of the key learning experiences for the participants was having access to a medical mentor, while experiences among the participants of the medical mentor were positive many spoke about colleagues having difficulty in accessing the mentor. Many of the participants talked about the valuable learning experience working alongside their mentor, and how facilitative they were to their progression. It was evident from the data was that the medical mentor is the key person to support nurse/midwife prescribing, the success or failure of the venture rests with this key individual.

A greater understanding of the legal, ethical, and professional issues in respect of prescribing was deemed beneficial by only a few participants with the development of the CPA integrating them together for the prescriber. Several of the participants also spoke about how they had only been able to undertake the programme due to the provision of the blended learning elements.

Many reported changes in their clinical practice including, thinking about medication differently, questioning doctors more and their increased knowledge about medication amongst others. From the data several recurring behaviours or awareness of potential negative behaviours emerged through examples given by the participants such as caution, awareness of danger, confident, reflective, fear of litigation, dictating to the doctors about prescribing decisions and safety.

In theme four, the participants' own views on prescribing practices emerged and three main categories emerged to prescribe or not, in terms of the pressure to prescribe and, the realization that other non-pharmacological treatments could be used. While the participants had, or were about to, get

prescriptive authority, they realized that this did not mean they had to prescribe. They realised there would be clinical circumstances, where they would not need to prescribe and that this was appropriate. In addition, challenges by others to nurse prescribing emerged mainly from nursing or midwifery colleagues who either would not utilize the nurse/midwife prescriber or would question them as to why they would become a nurse/midwife prescriber as they received no extra money for this, one participant spoke about colleagues asking her if she was now a mini doctor. Finally, anxieties about deskilling or taking from the junior doctors' experience of prescribing emerged. Some of the participants spoke about nursing/midwifery and medical colleagues remarking to them about their new role removing opportunities for junior doctors to prescribe in practice.

Theme five explored the nurse/midwife prescribing decision making framework and participants spoke about it being essential in assisting them make prescribing decisions. In some cases, participants spoke about using the framework unconsciously as their expertise developed. However, several of the participants from the specialist clinical grades stated they already utilized decision-making frameworks embedded in their practice, which they had come to rely upon on and therefore did not use the specific nurse/midwife prescribing framework. Nonetheless they acknowledged that as a framework it potentially useful for inexperienced nurses/midwives or those not working in specialist roles.

The sixth theme exposed the preparedness of the participants to prescribe because of undertaking the programme. Most participants agreed the depth and breadth of the programme was appropriate and the content was integrated sufficiently to permit them to incorporate the new knowledge into their practice. Even so criticism of the programme was expressed in terms of how they did not feel prepared for dealing with the bureaucracy of the governance structures associated with prescribing including but not exclusively dealing with the Drugs and Therapeutic Committee.

The final theme, which emerged, was the changes the participants suggested were necessary to improve the nurse/midwife prescribing programme. Several changes were proposed including, increasing the length of the programme, decreasing, or removing the reflection component, increasing the use of clinical scenarios as a learning method and balancing the mix between academic and clinical speakers on the programme. For some of the participants the limited nature of CPD provision for the nurse/midwife prescribers is an issue, which required addressing. Again, the issue of the bureaucracy of the governance structures associated with prescribing was mentioned, as something required to be incorporated into the programme. There were mixed views expressed on whether the programme should be generic or specialist, however some who believed they benefited from learning about the entire range of medicines and conditions and learning from the practitioners in those diverse range of clinical settings. Finally, several of the participants spoke about their concerns about the number of nurse/midwives who had completed the programme and had either never prescribed, or had a protracted period of time from completing the programme to commencement of prescribing practice, they were concerned about the competency of these individuals.

The next chapter discussion the findings in the context of what is already known about nurse/midwife prescribing.

Chapter Seven: Discussion Chapter

7.0 Introduction

Nurse/Midwife Prescribing was introduced in Ireland in 2007, within the context of expanding the scope of practice of nurses/midwives and responding to changes within the health care environment in Ireland. Despite the initial aspirations of the then Minister for Health and Children Mary Harney, that up to 10,000 nurses/midwives would be educated and trained as nurse/midwife prescribers by 2017, as of 2019, there are just over 1700 registered nurse/midwife prescribers are prescribing, (as stated in an email from Anne-Marie Ryan on the 29th of March 2021).

This study explored the effectiveness of the nurse/midwife programme through interviews with registered and candidate nurse/midwife prescribers and by presenting participants with validated paper based clinical scenarios to measure confidence, accuracy, advice seeking and working within the scope of practice.

This chapter discusses the implications and significance of the findings of participant responses to the clinical scenarios and the interviews in the context of the literature, and then seeks to identify the implications for practice, education and policy for nurse/midwife prescribing in Ireland. The educational and pedagogical implications of the following areas are explored throughout this chapter including; confidence, accuracy, advice seeking, working within the scope of practice, motivation to prescribe, beneficial aspects of the programme, the effects of the programme on clinical practice and thinking, the influence of the programme on prescribing practices, the prescribing decision-making framework, the preparedness of the nurse midwife prescribers and possible changes to the nurse/midwife prescribing programme.

7.1 Accurate Nurse/Midwife Prescribers

As outlined in the findings chapter, the participants were found to be accurate in giving responses to the clinical scenarios that were from their respective core areas. While candidate prescribers were less confident with their answers, they were still correct. The differences in accuracy appeared in the non-core clinical scenarios, which revealed that the specialist grade nurses largely gave no answer to these scenarios, one participant going so far as to say 'wouldn't touch it'. Therefore, the accuracy of the specialist grade nurses could not be measured. However, the non-specialist clinical grade nurses did attempt the non-core clinical scenarios and their responses were largely accurate picking out many of the cues in the scenarios and several of them getting the scenarios entirely correct. One of the implications of this is, if nursing and midwifery continues to develop advanced grades in specialist areas of clinical practice where these specialist nurses/midwives have knowledge and skills specific to that one area of practice, are they then deskilled for more generalist areas, if they are called upon to work in an area outside of their core specialist area. Also, this finding begs the question, if the specialist expertise of advanced nurse/midwife practitioners continues, does the prescribing programme need to become specialised to support this selective practice rather than a generalist programme.

Safety in prescribing medicines is vital for patients to avoid adverse side effects including morbidity and death (Tamblyn *et al.* 2012; Khoo and Lim 2003; Bates et al. 1995). Methods of determining the accuracy or prescribing have been improved with the use of tools such as the Appropriateness Index and the Medication Appropriateness Index (Drennan *et al.* 2009; Barber *et al.* 2005). However, these tools involved examination of records once the prescribing has occurred, and analysis is undertaken through audit. Interventions to improve the accuracy of the prescriber such as electronic prescribing systems (Eguale *et al.* 2008), a prescribing wheel (Hixson *et al.* 2009), using smart phones (Flannigan and McAloon 2011), auditing kardexs (Hojaili *et al.* 2013), double checking of calculations (Jatoi *et al.* 2010) and use of online resources (Prajapati and Ganguly 2013). The existing studies

suggest that nurse/midwife prescribers are safe and accurate when prescribing (Drennan *et al.* 2009; Latter *et al.* 2005).

In this study the participants were accurate for those clinical scenarios they were familiar with or within their scope of practice and this concurs with the views of Offredy *et al.* (2008). While there appears to be a difference in that the non-specialist nurse/midwife are largely accurate in the non-core clinical scenarios, their knowledge that they demonstrated in this study is broad. Conversely, the specialist grade of nurse/midwife, their broad knowledge could not be ascertained as they declined to comment on the non-core clinical scenarios; however, they were accurate in their core areas. The implications of this are that specialist nurse/midwife prescribers who have developed certainty with the limits of their scope of practice, very quickly recognise this, and immediately refer the patient on to who they perceive to be the more appropriately qualified and experienced practitioner. However, this is not a criticism of the non-specialist grades who did engage with the non-core scenarios and were accurate with their responses. These nurses have developed the knowledge and skills to deal with a range of prescribing issues largely due to the generalist approach of the prescribing programme. However, the certainty of the limits of their scope of practice is less clear. Given that these nurses responded correctly to the non-core scenarios and this was an artificial situation, it is impossible to judge if this blurring of the limits of their scope of practice would occur in real life clinical practice. The finding does demonstrate whether the nurse/midwife participant was from a specialist or non-specialist grade the outcomes from their dealing with the scenarios was safe, whether this was being either accurate with their answer or referring the patient on to another appropriate health care professional. This is a reassuring finding as this underpins the core aim of prescribing medicines that they do no harm to patients.

7.2 Confidence of Nurse Midwife Prescribers

The participants reported being confident about their prescribing decisions in relation to the clinical scenarios for the most part. Their confidence levels were measured using a Likert scale. While the highest levels of confidence were reported for the core clinical scenarios, i.e. within their clinical area, those in the specialist grades, acknowledged that the non-core clinical scenarios were outside their expertise. They were highly confident that the correct course of action for them was not to give a response to those clinical scenarios and to refer the patient on to medical staff. Whereas the participants from the non-specialist grades were less confident with the answers they gave to the non-core scenarios, they were for the most part correct. There were also differences in the levels of confidence between the qualified and candidate prescribers with the qualified prescribers being overall more confident with their answers than the candidate prescribers when the non-core scenarios were excluded. The participants were not asked to decide if the clinical scenarios were within their scope of practice only about their rating their confidence on the prescribing decision, they had arrived at for the clinical scenarios. These findings are consistent with the literature from McHugh *et al.* (2020), Casey *et al.* (2019), Latter *et al.* (2007, 2005) and Cashin *et al.* (2014) who found the longer a nurse/midwife was a prescriber the greater their confidence to prescribe medication.

One of the conclusions which can be drawn from an examination of confidence in this study is the level of confidence was generally very high. That is, the nurse prescribers interviewed were confident that they were prescribing correctly and confidently within the boundaries of their scope of practice. This finding supports the view that the prescribing programme with its current syllabus, appropriately prepares the nurse/midwife to prescribe for patients, whether they are in a specialist or non-specialist clinical role. The programme, which is a competency-based programme, has at its core appropriate competencies, which prepare the nurse/midwife for their prescribing role and to practice in a safe manner (NMBI 2019).

In addition, that higher level of confidence is related to the person being a qualified nurse/midwife prescriber as opposed to being a candidate prescriber and their experience and familiarity with their core areas of clinical practice. However, there is somewhat of a distinction between the specialist nurse's grades and the non-specialist nurses' grades in how they expressed this, the specialist nurse grades expressed high levels of confidence that the non-core clinical situations were beyond their scope of practice and to always refer these patients on. One of the conclusions, which may be drawn from this, is that the specialist grade nurse would not prescribe for patients if they perceived the clinical situation to be beyond their scope of practice. Therefore, the current situation must change from prescriptive authority linked to the CPA to the open formulary as did happen in the UK, unless the clinical situation fitted within the scope of practice of the specialist grade nurse, they would not prescribe, instead referring on to a medical colleague.

For the non-specialist grade of nurse, the issue of the changing to an open formulary will be commented on in the context of working within the scope of practice in another section. The qualified nurses were more confident than the candidates leaving aside the non-core scenarios. This is consistent with the literature, which links confidence with experience.

7.3 Seeking Advice

The participants were clear when they would seek advice, they indicated that they would seek advice from a person rather than a text resource, and that text resource was more likely to be the BNF and there was a pattern as to where they would seek advice from regarding prescribing decisions. Nurses and midwives do not practice in isolation from other colleagues, and while some practice in community settings physically on their own, they still communicate with their colleagues, so this finding that they would seek advice from a person rather than a text is not surprising. One of the prescribing competencies number 3.2, states that the nurse/midwife prescriber , 'Collaborates with all the members of the health care team and

documents relevant information' (NMBI 2019, pp. 10), therefore this instils in the nurse/midwife prescriber a culture of working closely with other health care professionals and is as a consequence, not a surprising finding from the data.

The majority of the participants reported if they were to seek advice about the core clinical scenarios, it would be from medical colleagues, the next group who they would seek advice from would be nursing/midwifery colleagues, the BNF came next with an online resource the least preferred option. However, when it came to whom they would seek advice from in the non-core clinical scenarios the number who would previously sought advice from nursing and midwifery colleagues dwindled and their choice changed to asking medical colleagues' advice. Of those that indicated that they would ask advice about the clinical scenarios in their core areas, from nursing/midwifery colleagues (n=4), they were more likely to be qualified nurse/midwife prescribers rather than candidate prescribers. Referring again to the competencies for nurse/midwife prescribing, specifically competencies 1.2, 2.2, 2.4, 3.2 (NMBI 2019), these competencies expect the nurse/midwife prescriber to consult with medical practitioner or pharmacist when the nurse/midwife prescriber acknowledges a limitation in their knowledge of prescribing. The medical practitioner is more readily accessible to the nurse/midwife in clinical units. In addition, the medical practitioner acts as the mentor for the candidate prescriber during the programme and therefore that more collaborative relationship has been established and developed. Previously mentioned in chapter two was the hierarchical nature of the health care system in Ireland and the deference with which medical practitioners were treated (Scott et al. 2003). Medical practitioners are viewed as the health professional with the expertise in making decisions when it comes to patients' health, therefore this deference coupled with the competencies which call on collaboration with medical practitioners, therefore it is not surprising that the medical practitioner would be ranked so highly by the participants in seeking advice on medication.

This suggests that the prescribers are certain of where they would go to seek advice. The preference for advice from a person is interesting and suggests the need to access to colleagues, for those working in isolated contexts. It is impossible to speculate as to why the participants stated they would ask nursing or midwifery colleagues for advice in the non-core scenarios. The literature suggests that seeking advice particularly from medical colleagues will assist in making appropriate prescribing decisions (Chan et al. 2012; Cooper et al. 2012; Barlow et al. 2008). Furthermore, seeking assistance from a medical practitioner once the nurses or midwife believes they are outside their scope of practice, is embedded in their practice through the prescribing competencies (NMBI 2019). These findings are dissimilar to Ndosi and Newell (2010), in that if you include the pharmacist as a source of advice which they did in the Ndosi and Newell (2010) study and this study did not, the highest ranked professional who nurses in the Ndosi and Newell (2010) study sought medication advice from was nursing colleagues rather than medical colleagues.

The preference for a text over the web is interesting. This could reflect (i) speed of access, as the web, is not always available when you want a quick answer, (ii) familiarity – if you know a document well you can find things very quickly, or (iii) a confidence in the origins of the information in the BNF. The participants did not indicate why they preferred the BNF, however it is a textbook frequently available in clinical sites located on the drug trolley.

An awareness of the need to seek advice can reduce prescribing errors and is vital according to Creswick and Westbrook (2015), Lim *at al.* (2013) and Likic and Maxwell (2009). However, against this the BNF was found to be the most reliable source of prescribing information (Cox *et al.* 2010), nonetheless as a resource it had also been found to present the information which may not be accessible to nurses (Ndosi and Newell 2010). When comparing the various forms of prescribing information, human versus text either online or paper based, the BNF came out as the most widely used resource for prescribing information.

In this study, doctors were revealed as the most likely resource the participants would seek advice from in relation to prescribing decisions. The process of undertaking the nurse-prescribing programme in Ireland, dictates that the candidate works with a medical mentor to shadow them and benefit from their prescribing expertise. There are probably still too few qualified nurse/midwife prescribers working in the health service to see this situation of the mentor being a medical doctor to change yet. It is difficult to say why the participants in this study chose the doctor as the person they would seek advice from in the clinical scenarios over paper or online reference text, which is in sharp contrast to the study conducted by Ndosi and Newell (2010). Since the candidate prescriber has to work so closely with the medical mentor, and this creates the advice seeking relationship and establishes it during the candidate phase and it continues once the prescriber becomes qualified, this is perhaps one reason for the medical practitioners being the professional the participants would most readily seek prescribing advice from. Certainly, Drennan *et al.* (2009) recommended that the medical doctor as prescribing mentor should also continue. However, seeking advice from another colleague is contingent on that colleague having the correct and up to date information. The underpinning of the programme through clinical competencies, which encourage the collaboration of the nurse/midwife prescriber with other health professional including medical practitioners coupled with the historical deference by nurses and midwives to the medical profession, therefore it is not surprising that the participants would ask the medical practitioner for advice. An implication from this finding is that if the prescribing programme continues using medical practitioners as the mentor for the candidate prescriber, nurse/midwife prescribers will continue to see the medical practitioner as the professional from whom they seek advice. While Drennan et al. (2009) recommend continuing the system of medical practitioner as mentor, in the future when the critical mass of nurse/midwives prescribers grows, a change to include nurse/midwives acting as mentors could also be considered, due to their competence, familiarity of the prescribing competencies and expertise.

7.4 Working within the Scope of Practice

Most of the participants in relation to the two clinical scenarios from their core area, agreed they would proceed as they had answered or seek advice, only one participant felt her clinical area was so specialized that even the scenarios she was presented with were beyond her scope of practice. However, when the two clinical scenarios from the non-core areas were presented to the participants, the notion that the scenarios, being within or outside their scope of practice changed for some participants.

The participants from the specialist grades immediately stated that they were outside their scope of practice, as mentioned previously and offered no answer and were confident that this was the correct thing to do. Some of the non-specialist grades did not say it was beyond their scope of practice; they gave an opinion as to the correct treatment plan but advised they would refer the person on to a medical colleague. Some argued they would offer an opinion as a particular drug in the non-core scenario was on their CPA and they could offer advice.

Offredy *et al.* (2008) found that once nurse/midwife prescribers were asked about pharmacology decisions outside their core practice area their knowledge diminished. Perhaps the lack of a response by the specialist nurse/midwife prescriber to non-core scenarios as well as an awareness of it being outside their scope of practice was due to fear of giving an incorrect response. This awareness of their scope of practice and not prescribing outside is consistent with findings by McHugh *et al.* (2020), Connor and McHugh (2019) where nurse/midwife prescribers were aware of their limitations of their scope of practice and would refer the patient on to a medical colleague.

Notwithstanding the fact that the participants, who did not state that the non-core clinical scenarios were outside their practice, they did all say, they would

refer the patient on. It might be prudent to revisit the prescribing decision-making framework and revise the question about prescribing being within the prescribers' scope of practice, but also the type of patient presentation being within the prescribers' competence. What is it about the specialist role that when it came to the non-core areas, that they immediately said that it was not within their scope of practice and moved on? Based on the findings in this study, I would contend that the specialist grades were better at defining their scope of practice. In general, the specialists were very confident that they were prescribing correctly in their own areas, and very sure in deciding that other cases were outside their scope of practice. The non-specialists were also accurate, but less sure about the boundaries of their scope of practice. Variations in awareness of scope of practice between qualified and candidate prescribers appeared to be linked to whether the participants were in a specialist role or a non-specialist role. One of the implications of this is to strengthen the candidates' understanding of their own scope of practice as they undertake the prescribing programme. While several of the competencies do mention scope of practice (NMBI 2019), and the prescribing decision-making framework (An Bord Altranais 2007c), explicitly asks the prescriber if the prescribing activity they are engaged in is within their scope of practice or competency, the prescribing programme is not clarifying for the candidate their scope of practice. Additional learning pertaining to scope of practice should therefore be included in the prescribing programme. While the specialist and advanced nurse practitioners demonstrated certainty in their scope of practice, revision of scope of practice would add to the safety of prescribers overall.

7.5 Motivation to Prescribe

The motivation of the participants to prescribe can be broadly divided into two categories of reasons, those concerned with benefit to the patient and those concerned with the benefits for the prescriber. Participants spoke about how the nurse prescribing programme being the natural final step in their

education to enable them to care for their clients or it was the right time in their life to focus on themselves after prioritizing the needs of family.

Currently, there is no extra remuneration for nurse/midwives who prescribe in Ireland. The literature has not identified these reasons as ones for which nurses/midwives had undertaken the programme, however the beneficial effects for the patient of nurse/midwife prescribing has been written about by McHugh *et al.* (2020); Scrafton *et al.* (2012); Lockwood and Fealy (2008); Ryan-Wolley *et al.* (2007) and Wilhelmsson and Foldevi (2003). It would consequently appear, that while there was no direct personal gain for the nurse/midwife prescribers in undertaking the programme in terms of financial remuneration, the benefits which the patient receives from this intervention provided by the nurse/midwife prescriber in effect motivates the nurse/midwife to undertake this programme and all the consequential study and time required. In this case the motivation emerges as quite altruistic. Indeed, the study conducted by ONMSD (2014) examining the motivations of RNP in Ireland, career advancement which may include better pay, was ranked fourth as a reason for becoming a nurse prescriber in Ireland. Several of the participants reported being chosen to undertake the programme, due to service needs or their role or the service was being offered the programme free. This would concur with literature again by ONMDS (2014), Scrafton et al (2012). However, Mc Cartney *et al.* (1999), talks about the motivation external to the individual nurse midwife prescriber as being political, to exert control over doctors to destabilize their sense of power in the health service as regarding their indispensability, when a nurse could be trained to prescribe equally as effectively as a doctor. The participants, who reported that, some of their colleagues, spoke to them about doing doctors' work, indirectly reported this political dimension. This need for nurses to engage in more of the clinical activities of the doctor may be borne out of the need to reduce the number of hours worked by junior doctors in accordance with the EU working time directive.

The participants in the study reported a number of reasons, which motivated them to prescribe, some of them personal and professional to the nurse/midwives, some of them for the benefit of their patients and the service. Therefore, in the face of the extra demands of the role of a nurse midwife prescriber and to persuade more nurses/midwives to undertake this role, perhaps additional recognition of the prescriber in terms of support, needs to be considered to encourage more nurse and midwives to undertake this programme.

7.6 Aspects of the programme which were more beneficial to the nurse/midwife prescribers

Inquiring into the prescribing programme was included in this study, largely in part due to the anecdotal evidence that the prescribing programme at level 8 was a difficult programme. Anecdotal evidence from conversations with nurses/midwives the researcher met through her role as a site inspector for NMBI, alluded to this difficulty as one of the reasons for their non-engagement with the programme. Therefore, the researcher wanted to include some evaluation of the programme in this research. In this study, pharmacology featured heavily as either the most beneficial part of the programme, or the part which needed more emphasis. This is very much in keeping with Drennan *et al.* (2009); Lockwood and Fealy (2008); Latter and Courtney (2004); Sodha *et al.* (2002a); Otway (2001, 2002). The report conducted by Drennan *et al.* (2009) had examined the prescribing programme using a retrospective pre-test method, with regard to the participant's understanding and abilities from their engagement with the programme.

The topic areas examined in the survey covered all the indicative content of the programme. However, this study attempted to identify whether the topic areas which scored highest in the Drennan *et al.* (2009) study, were also the same topic areas the participants in this research project identified as helping them to become a nurse/midwife prescriber and some of them did concur. In

this study the parts of the programme which assisted the participants prepare for their role as a nurse/midwife prescriber was pharmacology, however Drennan *et al.* (2009) reported that the applied biosciences were the hardest part of the programme to understand. The part of the programme where the participants developed the best understanding was the regulatory information, prescribing legislation. The participants mentioned these topics as being beneficial to becoming a nurse prescriber. Based on these findings, the teaching of pharmacology needs to be reviewed, to incorporate a more student focused and applied pedagogy, such as problem-based learning and or scenario-based learning. The candidates are working in clinical practice dealing with real people therefore the use of well-constructed simulations would reflect the realities of their practice rather than learning pharmacology in its pure form and in lecture format.

Participants reported that working with and being supervised by the medical mentor was a positive experience, they were aware that there were difficulties in getting mentors in the first place, or getting time with the mentors, however these participants seemed to have benefited from the mentor, mentee experience. Lack of a supportive or engaged mentor seemed to stymie the learning for some of the participants, in effect making the mentor one of the key people to support prescribing.

In Drennan *et al.* (2009), 78.5% of participants felt supported in their new role as a nurse/midwife prescriber by their medical mentor. However, against this Drennan *et al.* (2009) did recommend moving at some stage to having qualified experienced nurse/midwife prescribers as mentors.

In the section on advice-seeking in this study the participants selected the medical mentor as the resource they would consult most frequently to get advice from. If we move to a model, where the medical mentor is no longer used or their input is reduced, could the candidate nurse/midwife prescribers miss this experience, which participants in this study rated so positively. Overall, the participants reported that mentor was the most significant person

in giving them support or encouragement in their role as nurse/midwife prescribers. This suggests that the experience of working under the supervision of the mentor was a key part of their development as prescribers. The programme is balanced between theoretical components, clinical supervision, and attainment of clinical competencies during clinical practice, these components remain a fundamentally vital method to ensure safe prescribers. The maintenance of a clinical component with supervision ensures that the candidates' knowledge skills and attitude, are assessed by an appropriate clinician. However, as the critical mass of nurse/midwife prescribers grows, it may not necessitate supervision exclusively by medical practitioners. The theoretical component of the programme requires a pedagogy, which will increase the accuracy and safety of the candidate prescriber such as clinical scenarios to simulate clinical situations in a safe environment for the learners.

7.7 The effect of the programme on clinical practice and thinking and Prescribing Practices

This study found that nurse/midwife prescribers report that the programme changed their approach to prescribing. They believe that they have become more cautious, more conscious of the whole patient and the non-pharmacological options. This is consistent with findings of other studies by Casey *et al.* (2020); Connor and McHugh (2019); Drennan *et al.* (2009); Latter and Courtney (2004); Otway (2001, 2002) and Luker *et al.* (1997). This finding indicates how prescribing is a holistic activity and rather than just prescribing for a system the participants now see the prescribing activity as potentially having impacts in many systems of the patient's body and their psychosocial aspects, therefore such a consequential activity required review as to its necessity over a non-pharmacological treatment. The new knowledge gained from the programme and reflection on the consequences of medication, gave these participants a modicum of caution in prescribing medication, and because they now had prescriptive authority it was not just

about prescribing, but it was also about stopping, reducing, or maintaining the same dose of medication.

Most participants did report that prescribing had also changed their practice making them more reflective, confident and not to dictate to the doctors what to prescribe for the patients. This finding is interesting as, anecdotally, most nurses and midwives report prior to prescribing themselves, they would almost dictate the treatment, however now the prescribing is their responsibility, and they see the patient themselves before prescribing. These participants talked about the danger of this practice and how they sometimes will recheck vital signs themselves, as the consequences of an incorrect prescription being given to the patient, can have a potentially fatal outcome for the patient and a charge of professional misconduct for them. Again, McHugh *et al.* (2020); Wedgewood (1995) and Koefman and Woods (1995) talk about the practice of nurses/midwives dictating to doctors what to prescribe, and what poor practice it is for the patient and the professional. This insight into how the participants would not dictate to medical practitioners what to prescribe, acknowledges that each patient is an individual and the importance of a thorough assessment to formulate a treatment plan for the individual person is essential and not viewing the patient as someone who fits a particular regime that suits everyone. It also reveals that it is imperative that the health professional who prescribes, requires a therapeutic relationship with the patient. One of the key learnings from this study is that just because a nurse/midwife has prescriptive authority to prescribe medication, they do not have to do so, if in their opinion following the assessment, the patient does not require medication. One of the key elements of the programme, which assists the nurse/midwife prescriber with this reflection, is the decision-making framework (An Bord Altranais 2007c). The minimum data set worked against this, as the system was fundamentally counting prescriptions, therefore if you had no prescription, you were not engaged in prescribing. There is no questioning of medical practitioners, if they do not prescribe medication, and the prescribing decision-making

framework supports the nurse/midwife in their decision not to prescribe if there is no clinical requirement either.

A number of other effects of the programme on practice were, being able to conduct a physical health assessment on their patients, and how they were now more confident dealing with doctors and other members of the multidisciplinary team.

Participants spoke about some of the professional activities, which they now were more aware of, such as being autonomous, accountable, engaging in evidence based practice similar to McHugh *et al*. (2020); Casey *et al.* (2020); Connor and McHugh (2019); Lockwood and Fealy (2008); Rodden *et al.* (2001) and Luker *et al.* (1997). Some participants spoke about the limits or the extent of their scope of practice (McHugh et al. 2020), (Connor and McHugh 2019) and (Bradley *et al.* 2007) and how nurse/midwife prescribing enhanced the nurse/midwife's professional development and enhanced the nursing care they provided to patients (Drennan *et al.* 2009). Nurse/midwife prescribing has had a positive effect on the nurse/midwife's clinical practice and thinking and has made them safe prescribers, better able to assess the needs of patients. The prescribing competencies and the prescribing decision-making framework, assist the nurse/midwife prescribers to reflect on the process of prescribing and realise the consequences of their actions on the patient and their own professional practice.

The participants spoke about prescribing as having a number of outcomes in the prescribing process; prescribing, not prescribing, using non-pharmacological treatments, in addition, the participants reported pressure to prescribe from colleagues and patients. Now they could prescribe some of the qualified participants realized that just because they could prescribe did not mean they had to, and that they sometimes felt under pressure to prescribe but did not, these finding are echoed by McHugh *et al.* (2020); Connor and McHugh (2019); Snowden and Martin (2010) and Bradley *et al.* (2008).

Nurse/midwife prescribing can improve the quality of patient care as the nurse/midwife prescriber is more aware of the whole patient and the medications the patients is prescribed. Having prescriptive authority has increased the nurse/midwife prescribers' awareness of the responsibilities of prescribing for patients and those non-pharmacological treatments could be considered in some situations, just because they can prescribe does not mean they have to prescribe. The responsibilities they learn about include the consequences of medication on the patient's physical, social, and psychological wellbeing. In addition, they learn about the legal and ethical implications on their own practice and the need to maintain their competence through engagement in continued professional development, working collaboratively with other clinicians and also consulting with the patient. Finally, the nurse/midwife prescriber is often best placed, and most informed about the patient, in order to make a prescribing decision.

7.9 The decision-making framework

Some used the prescribing decision-making framework (An Bord Altranais 2007c) to guide their prescribing decision-making. For others, in particular the advanced nurse practitioners, they already used frameworks developed for their specialist grades so did not rely on the prescribing decision-making framework for making clinical decisions. However, when the participants were administered the clinical scenarios the extent and limitations of their scope of practice was illuminated in their response to the core and non-core clinical scenarios. The CNS and ANP specialist grade largely ignored the non-core scenarios responding that they were outside their scope of practice, some not even giving an answer. The staff nurse and managerial grades did not always recognize that something was outside their scope but would either refer on to a doctor or seek advice from a doctor. This specialized practice knowledge and working with the scope is very much a finding of Offredy *et al.* (2009) and Sodha *et al.* (2002a), where the more specialist the clinical area, the less likely the prescriber was to prescribe in that non-specialist area.

The nurse/midwife prescribing decision-making framework asks as part of the process of prescribing whether prescribing is within their scope of practice (An Bord Altranais 2007c). The scope of practice (NMBI 2015c) poses as one of its questions if the person has the necessary competence to carry out the function. As has been illustrated in this study, this question of competence in relation to prescribing 'in this instance' needs to be included. If the notion of combining the competence of prescribing and competence in that clinical area this may clear up the ambiguity for nurse prescribers what is within the prescribing scope of practice/ decision making framework.

7.10 The preparedness of the nurse/midwife prescribers

The participants reported that the programme had largely prepared them to prescribe, however they felt ill prepared for the bureaucracy related to the governance structures and auditing, while this is not the responsibility of the education programme, recommending the students spend more time with the assistant directors of nursing with responsibility for prescribing, may alleviate difficulties in navigating the bureaucracy. Some of them reported colleagues had decided not to register as prescribers or undertake the programme because of what they saw as arduous processes to be traversed, to become registered as a nurse/midwife prescriber.

Again, Drennan *et al.* (2009) reported participants positively also disposed towards the programme, however, did feel there was a heavy burden on the students in the time taken to complete the programme. The participants in this study spoke about the length of the programme being too short.

Finally, the issue of the generic versus a specialist programme was raised, with some of the participants welcoming the opportunity to study with nurses/midwives from other specialities. However, some of the participant spoke about the need to receive more in-depth information regarding their own area of prescribing rather than a generic approach. This has been written

about by Scrafton *et al*. (2012) and Hemmingway and Davies (2005) as a dilemma for nurse/midwifery prescribing programmes in many countries and one which is difficult to address, due to the systemic effect of medicines and the fact many patients are presenting with multiple co-morbidities. However, on balance, the learning that occurs from different disciplines being together, coupled with networks students develop while undertaking the programme, make the generalist prescribing programme a more effective programme rather than narrowing the focus of the students learning within their own specialist area.

Overall, the participants did report that the nurse/midwife prescribing programme did prepare them for their role as a nurse/midwife prescriber, in relation to the clinical scenarios, the respondents who gave a solution to the scenarios their knowledge was good, and they had noticed many of the cues provided in the scenarios. However, the programme did not prepare them for the bureaucracy related to the governance structures and auditing. This area requires more support once the candidates have finished the course and is not necessarily within the remit of the programme. In addition, engagement in continued professional development, within the nurse/midwife own practice area and master classes in prescribing would assist the nurse/midwife prescriber maintain their competence.

7.11 The changes required to the nurse/midwife prescribing programme

New roles and governance structures were developed to support nurse/midwife prescribing in Ireland, and the success or otherwise of prescribing is entirely contingent upon a number of these key support people and structures. From the participants' point of view, the medical mentor was the most vital role, which either helped or hindered their progress through the nurse/midwife prescribing process. Participants reported positive experiences working and collaborating with medical colleagues, feeling confident to talk to the medical staff about prescribing decisions and this would concur with findings from (Casey *et al.* 2020; Drennan *et al.* 2009;

Stenner *et al.* 2009). However, some of them spoke about the difficulties in working/shadowing the mentor, or getting the doctors to sign their CPA, and gaining access to the mentor especially in community settings. While Drennan *et al*. (2009) reports on the positive experience nurse/midwife prescribers with mentors, some of the participants in this study expressed surprise at level of cooperation they experienced in mentors facilitating their learning, but unfortunately, they felt they were at the end of the list of learners the doctor had to facilitate, particularly in the large academic teaching hospitals. The implication of this finding is that NMBI need to revisit the role of Advanced Nurse Practitioners as mentors or co mentor with the medical practitioner for candidate nurse/midwife prescribers.

Overall, the experience of the participants was a positive one with their mentor, during and after the programme. From the analysis of the quantitative data most of the participants would seek advice from a medical colleague over a nursing/midwifery colleague this was slightly higher in the qualified nurses versus the candidate prescribers, however in the clinical scenarios outside the core clinical areas it was almost exclusively the doctor the participants would seek advice from. This points to possibly to the consultative relationship developed by the qualified nurse midwife prescribers with their medical colleagues being stronger than the consultative relationship, which is still developing in the candidate prescribers.

Several of the governance structures which support and ensure the safety of the prescribing initiative, were reported by the participants as not always being altogether helpful, in particular the Drugs and Therapeutic Committee, however the participants' experience seemed in some cases to be dependent on the view of the DTC towards nurse/midwife prescribing in particular sites. Some of the participants were not the first in an organization to become a nurse/midwife prescriber and the previous nurse/midwife prescribers had effectively paved the way for them ,in some cases they were even able to use the same CPA. However, others found the infrequencies of meetings, and the lack of understanding and caution of the committees, delayed their ability to

register. These were some of the findings in Drennan *et al*. (2009) ,however it was disappointing to see that while there were recommendations in the report about the Drugs and Therapeutic Committee, it would appear only some of the DTC have implemented these changes. One noticeable difference among the participants was the nurse prescribers from private clinical setting appear to be able to register more quickly than their HSE colleagues, due to DTC meetings being called on a more ad hoc basis than the restrictive schedule of the public hospital-based DTC.

A number of the participants spoke about the delay in registering because the development of the CPA was not part of the programme. Many of the participants spoke about the need for additional support to develop this document, however in March 2013; the HSE directed that the tender for the nurse/midwife prescribing programme include the development of the CPA as part of the programme. It will take some time to assess if this change in the programme will reduced the time from completion of the programme to registration.

While the HSE online minimum data set monitors the prescribing activities of nurse/midwives in Ireland, many of the participants reported the time-consuming nature and difficult interface of the system and the inability to record discontinued medications or titrate medication. Other saw it as a positive system, to allow them run reports of their prescribing activity and assist their auditing and this finding would be similar to a finding by McHugh *et al.* (2020). The issues identified by Drennan *et al.* (2009) were similar to these, however a number of the participants who were prescribing since 2008 stated they were auditing using their clinical site auditing systems and this was an additional burden to their workloads. In February 2014, the ONMSD published a review of the online minimum data set, this review acted upon some of the recommendations of Drennan *et al.* (2009) to improve the user friendliness of the system. However, it still does not address some of the concerns of the participants, in terms of those episodes of care where this is no prescription as the outcome (ONMDS 2014). The educational significance

of this finding is the need to reinforce with candidate prescribers, that prescribing is an activity, which does not always result in a prescription, and it is about assessing the person holistically and safely. The prescribing programme needs to emphasise the importance of assessment of the patient and the use of the decision-making framework (An Bord Altranais 2007c) to guide the clinical decision-making process. The emphasis is on the entire process of prescribing and not just on whether a prescription is written. The finding also has implications for the mentor in that this emphasis on the entire prescribing process, requires the mentor to demonstrate how they engage with the prescribing process from initial encounter with the patient to completion of the encounter whether it results in a prescription or not.

Finally, some of the participants reported lack of support or understanding of their role by nursing/midwifery colleagues who either would not ask them to prescribe or were asking them to prescribe when it was not within their role, in keeping with findings from Connor and McHugh (2019). This finding points to a need to include at undergraduate level, learning about nurse/midwife prescribing when the student nurses/midwives are learning about medication management. Learning about nurse/midwife prescribing at undergraduate level better prepares the students when working with nurse/midwife prescribers in clinical practice. A number of the participants spoke about the negativity they had experienced by colleagues who chastised them for undertaking the role when they received no recognition for it, or it was taking over the doctors' role or deskilling the junior doctor. The need to educate nurses/midwives about nurse/midwife prescribing can be achieved by the use of case presentation in clinical practice and presentation of prescribing audits. All postgraduate nurse/midwife programmes need to incorporate a session on nurse/midwife prescribing to increase awareness of the practice. However, overall the support from other nursing/midwifery colleagues was positive in keeping with Drennan *et al*. (2009) and Stenner *et al.* (2009). The anxiety expressed by colleagues of taking over the doctor's role and indeed de-skilling the junior doctor is one echoed in the literature by McHugh *et al.* (2020), Lockwood and Fealy (2008) and Dowling *et al.* (1996).

A number of participants mentioned the limited availability of continued professional development (CPD). The requirement for continued competence under the new Nurse and Midwives Act 2011 is explicit and it is also one of the prescribing competencies (Nurses and Midwives 2011). This was highlighted also by Drennan *et al.* (2009), the participants in this study found availability of CPD to be sporadic. Again, pharmacology was the area highlighted by participants in this study as the area they would require ongoing education.

Finally, a number of the participants from the specialist grades spoke about the non-specialist grades, in particular about the nurses/midwives who had not previously been educated to degree level undertaking the prescribing programme. This concern was identified in Drennan *et al.* (2009); Lockwood and Fealy (2008) and Tyler and Hick (2001) particularly in relation to the nurse/midwives not educated to level 9 NQF. However, the non-specialist nurses who answered the clinical scenarios were correct or identified more than half of the cues for the response. In addition, the issue of the programme remaining as a generic programme versus a specialist programme was viewed by the participants as being beneficial to those from very specialist clinical areas having the programme generic as they gained from being in class with nurses/midwives from other disciplines and learning broad pharmacology as opposed to limited to their specific area.

In conclusion, a number of the governance structures and supports roles have been critical to the successful development of nurse/midwife prescribing in Ireland. In terms of the governance structures, the study points to the DTC, the CPA and the HSE online minimum data set as initially difficult to work with but as more nurse/midwife prescribers have registered the governance structures have become easier to navigate particularly in the private sector. The key role in the success or other wise of the nurse/midwife prescriber is the mentor and largely the experience of the participants of the nurse/midwife prescribers was positive. Continued support for the mentor to

facilitate the nurse/midwife prescriber is essential. In 2015 NMBI and the ONMDS published a review of the process involved in implementing nurse/midwife prescribing and recommended that several of the barriers to the implementation mentioned here needed addressing such as the role of the DTC and the compulsory inputting of prescriptions into the online data collection system. Various arms of the HSE, the Department of Health and the regulator NMBI are now tasked with implementing these changes to reduce or remove these identified challenges for nurse/midwife prescribing (NMBI 2015a). Evaluation of these changes are required, to establish their impact on the processes for implementing nurse/midwife prescribing in Ireland.

The continuation of the programme at level 8 will continue to broaden the number of clinical grades and types of experiences potential nurse/midwife prescribers have to offer. The continuation of the programme as a generic programme also offers the candidate prescriber an opportunity to realize that prescribing is holistic and that much can be learnt from nurse/midwives from outside one's own clinical area.

7.12 The Pedagogical Implications of the Study

Throughout this chapter, the educational implications of this study are articulated; however, in this section the broader implications are examined. While some of the participants reported that they found subjects within the prescribing programme such as pharmacology difficult, they did not make suggestions as to how to overcome these issues. The core competency for prescribing is safety, as prescribing is a precise activity which can have life altering /ending consequences for a patient if undertaken incorrectly (Ironside 2015; Nazar et al. 2015). Therefore, pedagogies which support the nurse/midwife prescriber to prescribe safely, are required to be employed to enhance their learning of pharmacology and the components of the programme which support the learning of this core competency (Ironside 2015). From the literature, the precise nature of prescribing activities led to comparisons with other learning such as the learning that occurs for airline

pilots. Pilot learning is rooted firmly in experiential learning through simulation to prepare the pilot for various scenarios, which can occur once the pilot flies in the real-world (Bolt et al. 2014; Naidoo et al. 2014). Another issue pilot education wrestles with, is the theory practice gap in order for the student pilot to be able to apply what they have learnt into the real-world ensuring the safety of passengers and crew (Naidoo et al. 2014; Pasztor 2009).

Pedagogical approaches utilised by pilot education could be incorporated into nurse/midwife prescribing programmes. The simulation exercises pilots experience when learning, could be developed for nurse/midwife prescribing students, similar to the clinical vignettes developed for this study, which were utilised to test the confidence and accuracy of the participants. Nurse/midwife prescribing is a programme undertaken by clinicians in practice with a balance of theoretical modules and a clinical component, however, the experiential learning that occurs in practice reinforces the theory the candidates learn in college. Nursing and midwifery education is focused on preparing the learners for clinical practice where they must be competent, otherwise the consequence for their patients is injury or death. Therefore, learning about real-world examples and applied content is vital. Clinical vignettes when developed in partnership with educators and clinicians may provide the real-world experiences that enhance the students' learning of the core competencies of prescribing through experiential learning. This partnership approach of developing vignettes, requires clinicians to collaborate with lecturers, clinical tutors and educational technologists and patients, to create the real-world problems in which the candidate nurse/midwife prescriber can engage with in order to learn how to deal with the complex issues in prescribing, while maintain safety for the patient. Learning how to prescribe is as much a workplace learning activity as a theoretical or college learning activity and Fenwick (2001) asserts the view that experiential learning that occurs through real-world learning and this is important, as it is not context free i.e. just like the real world. Therefore, a pedagogical approach, which incorporates this context, through simulation

and vignettes, would aid the assimilation of prescribing knowledge, skills and attitudes.

Various pedagogical approaches, which utilise the strengths of the nurse/midwife prescribing students, could be employed. Nurse/Midwife prescribing students are experienced clinicians each having a minimum of three years' clinical experience, and as the programme is a generic prescribing programme, in that the programme attempts to address the learning needs of nurses, midwives from many clinical backgrounds. This depth of experience and diversity of experience could be utilised to assist in pedagogies such as cooperative learning and peer teaching. Nursing and midwifery are not practiced in isolation; largely they are undertaken within a team of clinicians so therefore the prescribing learning requires the same type of team approach such as using cooperative learning. Various strategies to assess the learning could also be explored such as case presentation and written case studies and not to rely on MCQ or written exam, which sometimes focuses on retention of facts rather than the student being able to demonstrate understanding, application, synthesis and evaluation of knowledge. In addition, more applied pharmacological knowledge could be utilised with clinicians as well as pharmacologist or pharmacists to deliver content. There is an argument for interdisciplinary learning, which would give all students medicine , nursing and midwifery an appreciation of each other's role and improve communication and promote a sharing of expertise. Limited examples of this exist. For example, Courtenay in 2013 published a report where the experience of interdisciplinary education between medical students and nurse prescribers that provided opportunities for mutual understanding each other's role (Courtenay 2013). As evidenced in the study by Creswick and Westbrook (2015) where prescribing social networks develop in clinical practice among nurses, pharmacists and medical practitioners ultimately benefited prescribing practices. A first step in moving towards interdisciplinary prescribing education is to develop prescribing competencies for all prescribers in Ireland, regardless of whether they are a medical practitioner, nurse/midwife or dentist. The UK has interdisciplinary prescribing competencies therefore all prescribing practitioners are

prescribing from using the same competencies, which reduces the opaqueness of practice. The pedagogical approach needs to acknowledge the holistic nature of nursing/midwifery care and how it is different to medicine. Though both professions now prescribe, their undertaking of this activity is embarked upon with a different focus, nurse/midwives considering the holistic approach to prescribing and the medical professional working from the perspective of the medical model. At undergraduate level pharmacology could be an interdisciplinary module to develop an understanding of each discipline's role in medication management. Prescribing is a high-risk activity as alluded to throughout this thesis, and the pedagogies employed in the nurse/midwife prescribing programmes, need to foster working in collaboration with other health professionals, a readiness to seek advice, awareness of scope of practice, an ability to make safe and evidence-based decisions and finally engage in critical reflection. Interdisciplinary learning, cooperative learning and simulation learning would assist the candidate prescribers experience that real- word learning within a team approach, mirroring the clinical environment where the nurse/midwife prescriber practices safely in caring for their patients.

7.13 Partnership between the HEIs and Health Service Providers

While a partnership approach could be used to develop experiential learning activities such as simulations, this close collaboration could enhance the working relationship between the HEIs and the health services providers. Several of the barriers to prescribing identified in this chapter may have a mechanism for resolution in a cooperative working relationship that may deliver a responsive programme that meets the needs of the students, the health service providers and ultimately patients. One of the notable points was that the participants are not operating in a clinical vacuum, they are part of a team of clinicians and that if any one of the clinician groups does not understand how or why the nurse or midwife is undertaking prescribing, the process for the nurse or midwife to be a prescriber becomes increasingly difficult. Some of the participants did speak about difficulties they encountered with medical and nursing and midwifery colleagues during the

process to become a prescriber. Perhaps the collaborative relationship between the HEIs and the health service organisations could assist in the understanding of some of these tensions and reduce or eliminate the barriers to prescribing mentioned by the participants. Again, interdisciplinary learning of pharmacology at undergraduate level, would decrease the lack of understanding between health professionals and promote more collaboration in the care of patients.

A more targeted approach in the clinical areas that require nurse/midwife prescribing might be employed also by the HEIs and the health service organisations to prepare sites for implementing prescribing. The directors of nursing/midwifery from the ONMDS are perfectly positioned with their national role, to assist with the role of working with both the HEIs and the health service organisations to plan and implement prescribing. Currently they meet with students while undertaking the prescribing programme and support the public health service providers to implement prescribing and liaise with the HEIs to ensure the HEIs are providing a relevant programme for students.

Finally, as part of this collaborative relationship, cognisance must be taken of the unique relationship between the medical mentor and the nurse/midwife prescribing student. Many of the participants spoke warmly of the benefit for them in having access to the medical mentor a prescribing expert to consolidate and guide their learning. However, mention was also made in the literature about the notion of the professional capital of the medical doctors as prescribers and recognition of the challenges when a group see an aspect of that professional capital, namely prescribing, as being solely within their domain and another group now taking on that role (Correia 2013; Noordegraaf and Schinkel 2011; Luke 2003). As individual medical doctors, many are willing to engage as mentors to the nurse/midwife prescribers, however as a professional group an improvement in overall view of nurse/midwife prescribers by medical doctors might be achieved by interdisciplinary learning around prescribing thereby giving undergraduate

student doctors and appreciation of the experience and competence of each other (Hall and Weaver 2001).

7.14 Reflections on the findings

Polypharmacy was a more pressing issue for the practitioners than expected. It is taught in both undergraduate and postgraduate training, but it seems to become more of a real problem to people once they are in practice. I felt on occasion that in the past with students that they understood the nature of polypharmacy and its consequences on the patient. It slipped off the tongue, they had the language as it were, but the realities of being a nurse/midwife prescriber with the authority, and responsibility to prescribe were quite different. In practice, they were now more concerned about the whole patient and really developed a sense for the potential consequences of drug interactions, rather than thinking about drugs as separate chemicals, which seemed to be inert to other substances. With this real understanding of the implications of polypharmacy appeared to come a questioning of prescribing decisions, with which some expressed that they would not have previously involved themselves. Polypharmacy came alive for them in such an interconnected way in that it promoted cautious behaviour in the participants.

The implications for me as a programme coordinator are that I need to ensure that the assessment of polypharmacy is at the higher levels of Bloom's taxonomy and that a case study may capture the assessment of polypharmacy rather than just multiple-choice questionnaires. Could it be that once we hear someone using the language around a concept, we are too quick to assume the person understands it? It is vital that the student learns about concepts, but that they embed that new knowledge in their practice and values.

Some of the participants used the interview as an opportunity to reflect on how prescribing changed their practice, something to which they gave careful consideration. I had expected them to say that it made them more cautious or safe, but what surprised me was the transference of that caution to their

medical colleagues. The participants now saw the importance of not dictating to medical colleagues what medicines they should prescribe or getting the medical colleagues to prescribe for patients whom they had not examined. Now with their own prescriptive authority, they would not prescribe at the suggestion of other health care professionals or write a prescription without examining the patient first themselves. This valuing their own prescriptive authority had transferred into valuing the prescriptive authority of medical colleagues and this for me was an important insight.

I was surprised to find some ambiguity about scope of practice. I tested the participants with clinical scenarios within their scope of practice and outside, I found that the nurses in non-specialist roles were sometimes vague about their scope of practice. If an area of clinical practice is non-specialist is there something lacking in how students and non-specialist nurses/midwives define the boundaries of their scope of practice. The solution is to spend more time on this at undergraduate level.

When I reflected on the research and what it examined, I realized the shift in my thinking, away from evaluation of training, and more towards the health system, the structures and relationships within it. This was a natural progression in thinking, from the operation of a programme to looking at issues of change and structure on the system in which this programme impacts. On the surface, this research is an investigation of training and accuracy in a technical area. However, there is an underlying story of power and segregation of roles in the health services. Traditionally, prescription was the domain of doctors, and the role of nurses was to administer. As nurses/midwives gain the prescriptive authority, this changes the existing authority structures. It allows nurses more autonomy and, in some cases, can empower nurses/midwives to question the decisions of doctors.

It is not surprising that these changes have encountered some resistance. This initiative breaks the monopoly of the doctors to prescribe in Ireland for patients. The Report of the National Taskforce on Medical staffing more commonly known as the Hanley report (Department of Health and Children

2003), explored how to fill gaps in care due to reduced numbers of doctors by expanding the scope of nurses/midwives to include prescribing medication. Nurse/ midwife prescribers can now fulfil the entire role of doctor particularly in minor injury clinics and nurse led services. This story of power has become more explicit and recognized. In addition, as well as breaking the power of doctors to prescribe, the challenge to the prescribing decisions leaves doctors' decisions open to question.

I was surprised that the part of the course the participants rated least was the reflective element. This may well be because reflection is included with most nurse/midwife programmes at both undergraduates and postgraduate level. There may be a jaded element to reflection for students now, which misses the deeply reflective and learning intention of the exercise.

7.15 Limitations of the study

Clearly the major limitation of a study of this kind is the small sample size. This study captures the opinions of 28 nurse/midwife prescribers in a variety of clinical contexts. While there were consistent trends in the responses, these cannot be assumed to be representative of the entire body of nurse/midwife prescribers. However, the study did capture the confidence and knowledge of two quite different groups. The interviews reveal the insights of both the qualified and candidate prescribers, and as a consequence are a contribution to the deeper understanding of the issues and context of nurse/midwife prescribing in Ireland. If the candidate prescribers could have been interviewed at the start of the programme and again at the end of the programme more evidence may have been gathered on the confidence and knowledge of the candidates, however the time constraints of the period for the data collect made this extremely difficult and not feasible.

Another limitation of the study was due to the voluntary nature of participating in the study; in principle an incompetent prescriber might have

refused to participant so therefore those that did participate perhaps considered themselves to be competent. In addition, the use of paper based clinical scenarios as opposed to the participants' actual patients, did produce a degree of artificiality into the process. However, there would have been ethical difficulties in using real patients, which would have made this study difficult in terms of time and appropriateness of the researcher to accompany the participants while they cared for patients. Finally, there was a restricted range of validated clinical scenarios used, which permitted a complementary set of responses; however, the clinical scenarios, which were developed, were typical clinical situations.

7.14 Further research

Further research is recommended in the following areas

- Examination of outcomes of nurse/midwife prescribing interventions where a prescription is not written to establish if there are implications for the cost and the effectiveness of healthcare.
- A larger scale study of accuracy could be considered using the method developed for this study to investigate examination of extent and limitations of scope of practice in non-specialist nurse/midwife prescribing roles.
- Evaluation of the processes for implementing prescribing identified by the participants as barriers to nurse/midwife prescribing and this evaluation would be timely to explore if the barriers identified by NMBI and the ONMDS in 2015 have been acted upon.
- Development of interdisciplinary prescribing competencies and their evaluation.
- Implementing interdisciplinary prescribing education for health care professionals including nurse/midwife student prescribers and medical students.

7.15 Conclusion

The introduction of nurse/midwife prescribing in Ireland in 2007 has been a significant change in practice. This study has examined the effect of the training by testing and interviewing (n=28) nurse/midwife prescribers. The findings suggest that the impacts have been positive. Nurse/midwife prescribing has been a successful initiative in clinical practice in Ireland, it has benefited patients, expanded the role of nurse/midwives and improved efficiencies in the health care services which are currently overstretched in Ireland because of the recruitment embargos due to budgetary constraints and the requirement to implement the EU working time directive for doctors.

Having conducted testing and interviews with (n=28) nurse/midwife prescribers, including both qualified and candidate nurse/midwife prescribers with validated clinical scenarios and having analysed the data using SPSS and conventional content analysis, evidence from this study, suggested that the nurse/midwife prescribing programme, is effective in preparing nurses and midwives for their role to prescribe medicines and medicinal products to patients in Ireland. Evidence for this, are the levels of confidence and accuracy of the nurse/midwives in this study coupled with the advice seeking and working within the scope of practice. Overall, the introduction of nurse/midwife prescribing in Ireland has introduced efficiencies into the health services, but also a quality enhancement in the care patients receive.

This study also revealed the frustrations with the systems put in place to provide governance and monitor prescribing, the type of monitoring seemed to incentivize prescribing. Many of these frustrations such as the barriers to register as a nurse/midwife prescriber are not within the scope of the

programme but lie within the remit of the organization in which the nurse/midwife is prescribing.

Another outcome of the study was that qualified nurse/midwife prescribers are more confident in their prescribing as compared with candidate prescribers. While all the participants demonstrated that they were safe in their response to the clinical scenarios, the participants in specialist clinical grades appeared to be more conscious of the limitations of their scope of practice.

The study also developed and validated a series of nurse/midwife prescribing clinical scenarios, which could be used to measure levels of confidence and accuracy of the nurse/midwives coupled with the advice seeking and working within the scope of practice. Participants in the study perceived that undertaking the nurse/midwife prescribing programme had changed their practice and their views of prescribing, making them more conscious of the holistic nature of the patient and of safety concerns in prescribing areas such as polypharmacy.

Pharmacology was identified as one of the beneficial parts of the programme, but perhaps how it is delivered requires exploration, varied types of pedagogy could be employed to enhance students' learning of pharmacology, such as experiential learning, peer teaching the use of simulations and cooperative learning. The study in addition highlighted the need for collaboration between the HEIs and the health service providers in ensuring the programmes offered are responsive to the students' learning needs, which ultimately makes for improved care for the patients.

The small sample size of the study limits generalisability of the findings. However further study is recommended to examine the high number of candidates undertaking the programme, not registering, the low up take of nurse/midwife prescribing in Ireland and examination of extent and

limitations of scope of practice in non-specialist nurse/midwife roles against the background of this study.
The study also highlighted the pedagogical implications of this study in terms of nurse/midwife prescribing education and how real-world learning through simulation, cooperative learning and interdisciplinary education, could enhance learning, increase safety and ultimately lead to better patient outcomes.

Finally, the reflective chapter in this study explored some of the tensions between positivism, post positivism and how this has shaped my thinking, my education practice, and my identity as an academic as I engaged in the process of completing this doctoral thesis.

In conclusion this thesis has demonstrated in this small study, that nurse/midwife prescribing is safe with confident prescribers, accurate in what they know and aware when they do not know, and where and when to seek advice to ensure no harm befalls the patients in their care.

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Appendices

Appendix A: Irish Policy Documents concerning Nurse Prescribing

1998 Published: *Report of the Commission on Nursing – A Blueprint for the Future.*	**2000** An Bord Altranais and National Council for the Professional Development of Nursing and Midwifery commence preparatory work on the review of nurse and midwife prescribing project.
2000 Published: *Review of the Scope of Practice for Nursing and Midwifery: Final Report* (An Bord Altranais).	**2005** Published: *Review of Nurses and Midwives in the Prescribing and Administration of Medicinal Products: Final Report* (An Bord Altranais and National Council for the Professional Development of Nursing and Midwifery)
2006 Health Service Executive established as a unitary health system. Department	**2006** *Irish Medicines Board (Miscellaneous Provisions) Act 2006* signed into law.
2006 Department of Health and Children conducts a public consultative process on nurse/midwife prescribing commences.	**2006** Department of Health and Children's public consultation the drafting of regulations for prescriptive authority
2006 With the approval of the Minister for Health and Children the Department of Health and Children establishes the Resource and Implementation Group on Nurse and Midwife Prescribing chaired by the Nursing Services Director, Health Service Executive.	**2007** Regulations for prescriptive authority for nurses and midwives come into effect: • *Irish Medicines Board (Miscellaneous Provision) Act 2006 (Commencement) Order 2007* • *Misuse of Drugs (Amendment) Regulations 2007* • *Medicinal Products (Prescription and Control of Supply) (Amendment) Regulations 2007* • *Nurses Rules 2007* establish a division of Register for nurse and midwife prescribers.
2007 Certificate in Nursing (Nurse/Midwife Prescribing) education programme commences.	**2009** First inspection visit of An Bord Altranais takes place in nurse prescribing sites.
2009 Publication of this report Drennan J, Naughton C, Allen D, Hyde A, Felle P, O'Boyle K, Treacy P, Butler M (2009) *National Independent Evaluation of the Nurse and Midwife Prescribing Initiative*. University College Dublin, Dublin.	**2010** Publication of the new version practice standards for nurses and midwives The nurse/midwife prescribing course is open to additional HEIs.

2011	**2012**
New Nurse and Midwives Act published	New version of the Collaborative Practice Agreement Published
2014	**2015**
New edition of the Code of Conduct for Nurses and Midwives published	All of the Nursing and Midwifery Board documentation have new editions including The standards and requirements for Nurse and Midwife prescribing programmes The Ethics guide for Nurses and Midwives engaging in research The Scope of practice for Nurse and Midwives

Appendix B Clinical Grades of Nurses and Midwives in Ireland

Explanation of the Grades and Roles of Nurse and Midwives in Ireland

Grade of Nurse or Midwife	Academic Level	Years of Experience	Role
Staff Nurse/Midwife	NFQ Level 8	Newly qualified	Clinical
Clinical Nurse/Midwife Manager 1	Minimum NFQ Level 8	3 years post registration experience and 1 year in the specialty or related area	Clinical/Managerial
Clinical Nurse/Midwife Manager 2	Minimum NFQ Level 8	5 years post registration experience and 2 years in the specialty or related area	Clinical/Managerial
Clinical Nurse/Midwife Manager 3	Minimum NFQ Level 8	5 years post registration experience and 2 years in the specialty or related area	Managerial
Public Health Nurse	Minimum NFQ Level 8	Must be on the Public Health nurse register (must have 2 years post registration experience to gain access to the course which when completed allows the nurse register as a public health nurse)	Clinical
Senior Public Health Nurse	Minimum NFQ Level 8	5 years' experience as a Public Health Nurse	Managerial
Assistant Director of Nursing/Midwifery	Minimum NFQ Level 8	No specified number of years , but must have managerial experience	Managerial
Director of Nursing/Midwifery	Minimum NFQ Level 8	No specified number of years , but must have managerial experience	Managerial
Clinical Nurse/Midwife Specialist	NFQ Level 9 Graduate Diploma	5 years post registration experience which includes 2 years in chosen area of specialist practice	Clinical

Advanced Nurse/Midwife Practitioner	NFQ Level 9 Masters	7 Years post registration experience which included 5 years in the chosen area of specialist Practice	Clinical

Appendix C Content of Nurse/Midwife Prescribing Programme in Ireland

Indicative Content of the Nurse/midwife Programme in Ireland

(taken from An Bord Altranais 2007a Pg. 16-17 2007)

Professional Accountability and Responsibility	Professional regulations and guidelines Accountability and responsibility for prescribing practice Critical review and self-audit Reflective practice Risk management in medication management Public health issues for prescribing Evidence-based practice and clinical governance in relation to prescribing
Legal and Ethical Aspects	• Legislation for nursing/midwifery practice and medication management • Legal liability and clinical indemnity for prescribing and expansion of nursing/midwifery practice • Informed consent of patient/client for treatment • Awareness and reporting of fraud • Substance abuse/dependence • Budgetary considerations (e.g. HSE National Shared Services Primary Care Reimbursement Service/medical card) • Licensing of medicinal products • Ethics and prescribing • Documentation requirements of prescribing

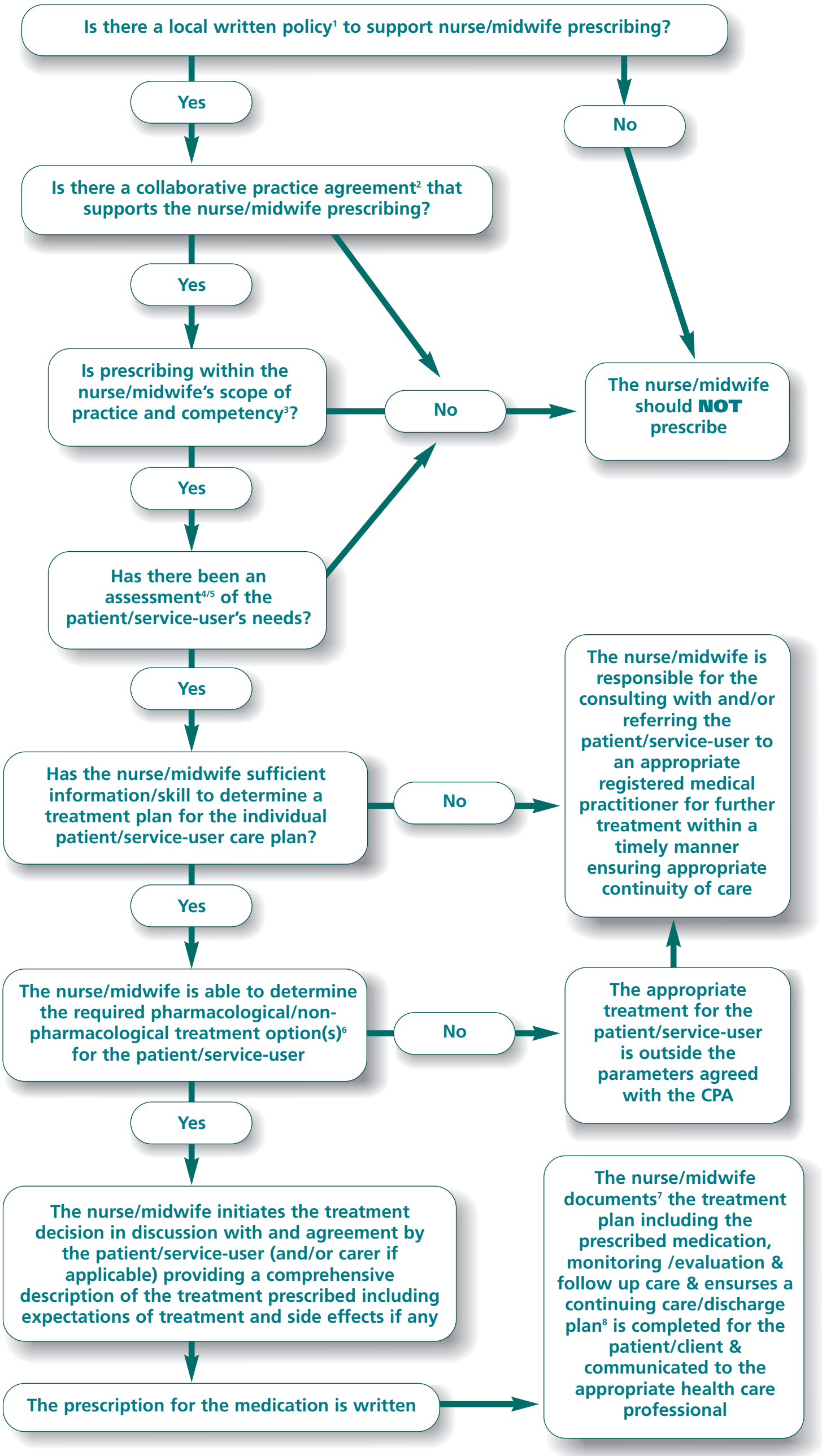
Pharmacology and Pharmacotherapeutics	Pharmacotherapeutics, pharmacodynamics, pharmacokinetics Pharmacovigilance Process for identification and treatment of adverse reactions and interactions Medication error/near miss reporting - organisational policy Prescribing for special populations - the elderly, the young, pregnant or breast-feeding women, the intellectually disabled and those with mental illness Pharmacoeconomics (cost vs. benefit ratio) Influences on and psychology of prescribing • Applied biosciences to prescribing practice
Principles of the prescribing process	• Steps of prescribing process • Assessment of patient/client - history and physical examination • Requesting and interpretation of laboratory and diagnostic tests • Consultation skills - Awareness of cultural and ethnic diversity of patient/client/family - Awareness of patient/client expectation for prescription medicinal products - Knowledge and skills for decision-making and treatment planning - Diagnostic reasoning - data synthesis - Risk vs. benefit ratio in treatment decisions - Use of non-pharmacological interventions in care plan

	• Patient/client education and preventative healthcare advice regarding medicinal products and disease management issues • Prescription writing and documentation of plan of care including patient/client response • National and local health care providers guidelines, policies and protocols for prescribing
Collaboration/Referral with other health care professionals	Interpersonal and communication skills necessary to foster collaborative relationships with allied health professionals Role and functions of other healthcare professionals involved in medication management Interdisciplinary sharing of patient/client medical records - documentation Management of conflict Clinical audit

Appendix D Decision Making Framework for Nurse/Midwife Prescribing

Decision-Making Framework for Nurse and Midwife Prescribing

An Bord Altranais



Explanatory Notes

1 Policy identifies the structures that authorise and provide a framework for the practice of nurse/midwife prescribing in the organisation. This may include reference to the involvement of Drugs and Therapeutics, Risk Management and Clinical Governance Committees.

2 The collaborative practice agreement (CPA) is drawn up with the agreement of the nurse/midwife, the registered medical practitioner, and the employer outlining the parameters of the nurse/midwife's prescribing authority (his/her scope of practice). Refer to the An Bord Altranais publication Collaborative Practice Agreement for Nurses and Midwives with Prescriptive Authority (2007).

3 Scope of practice and competency – Does the nurse/midwife meet the requirements and standards set by An Bord Altranais through completion of the education programme for nurse/midwife prescribing? Is he/she on the Division of the Register of Nurse Prescribers as maintained by An Bord Altranais? Is the registered nurse prescriber undergoing continuing professional development in prescribing practice to enable competency assessment?

4 Assessment includes:
- Physical examination
- History taking (including medications)
- Clinical diagnostic decision* (diagnosis, hypothesis)

5 Orders and interprets laboratory and other diagnostic tests – e.g. bloods and spirometry.

6 If the patient/service-user's assessed needs exceed the nurse/midwife's scope of practice, the patient/service-user is referred to the appropriate registered medical practitioner.

7 Documentation and record keeping for registered nurse prescribers should be outlined in local policy e.g. prescription writing including prescription pad responsibilities, medication administration record and patient/service-user's individual case notes; supporting material for clinical audit of the registered nurse prescriber's prescribing practice.

8 Continuing care/Discharge plan – Monitoring of therapeutic effect of the prescribed treatment by the registered medical practitioner/registered nurse prescriber and other team members.

* An example: a nurse with prescriptive authority is working in the diabetic day care centre. Her patient population includes individuals with known diagnoses of insulin dependent diabetes. A patient presents with a pattern of hyperglycemia. The nurse through her assessment skills checks for ketones in the urine and for any source of infection. She also enquires about any recent changes in the patient's diet. Based on this information the nurse make a clinical diagnostic decision regarding the elevated blood sugars and the insulin dose is adjusted appropriately.

An Bord Altranais has published supporting information for the regulatory framework and professional guidance.

- Requirements and Standards for Education Programmes for Nurses and Midwives with Prescriptive Authority (2007)
- Practice Standards for Nurses and Midwives with Prescriptive Authority (2007)
- Collaborative Practice Agreement for Nurses and Midwives with Prescriptive Authority (2007)

Please refer to these publications in association with this Decision-Making Framework.

An Bord Altranais, 18/20 Carysfort Avenue, Blackrock, Co. Dublin. Telephone: 01 639 8500. Email: admin@nursingboard.ie Web: **www.nursingboard.ie**

Appendix E: Collaborative Practice Agreement

Collaborative Practice Agreement (CPA) for Nurses and Midwives with Prescriptive Authority

Third Edition

FEBRUARY 2012

An Bord Altranais

Collaborative Practice Agreement (CPA) for Nurses and Midwives with Prescriptive Authority

1. Overview of the purpose and extent of a written collaborative practice agreement (CPA)

The *Practice Standards and Guidelines for Nurses and Midwives with Prescriptive Authority* (An Bord Altranais, 2010) are devised by An Bord Altranais to provide regulatory guidance for the professional practice of nurses and midwives engaged in prescribing medicinal products. Registered Nurse Prescribers (RNP) and health service employers should refer to the *Practice Standards and Guidelines* in the development of clinical governance structures at local and national level to support the implementation of nurse/midwife prescribing where it is considered necessary and can be appropriately supported.

The *Decision-Making Framework for Nurse and Midwife Prescribing* (An Bord Altranais, 2007) within the *Practice Standards and Guidelines* states that a nurse/midwife with prescriptive authority (recognised as a RNP) should have a written collaborative practice agreement (CPA) with a medical practitioner that is approved by the health service employer in order for the nurse/midwife to prescribe medications within her/his scope of practice at her/his place of employment.

This document provides standards and guidelines for developing CPAs for the implementation of nurse/midwife prescribing and provides nurses and midwives, medical practitioners and health service employers with a framework for the development (and approval) of CPAs. It also details the notification, renewal and termination processes for CPAs required by An Bord Altranais.

The underlining principles of the CPA include:

- The CPA is the standard that An Bord Altranais developed to ensure that the requirements as outlined in the medicines legislation are upheld and that clear lines of communication have been identified within the health care setting.
- The CPA serves as a tool to ensure that communication structures have been established between the RNP and the medical practitioner regarding the care of their patients/service users and agreed by the employer.
- The CPA defines the parameters of the RNP's scope of practice. While recognising the responsibility of the medical practitioner to the patient/service user, the individual nurse/midwife is accountable for her/his practice. This means that she/he is professionally accountable as an individual for her/his prescribing decisions. This encompasses the consultation and referral arrangements when a patient's/service user's care extends beyond the RNP's scope of practice.
- The CPA is drawn up with the agreement of the RNP, the medical practitioner and the health service employer outlining the parameters of the RNP's prescribing authority (i.e. her/his scope of practice). The principles of professional accountability, responsibility, competence and clinical governance underpin the CPA.
- The CPA provides a template for the development, audit and evaluation of the RNP's prescribing practices within the health care setting.
- The information provided in this document takes cognisance of the *Practice Standards and Guidelines* published by An Bord Altranais and the regulatory requirements of the medicines regulations of the *Medicinal Products (Prescription and Control of Supply) (Amendment) Regulations 2007 (Statutory Instrument (SI) No. 201 of 2007)* and the *Misuse of Drugs (Amendment) Regulations 2007 (SI No. 200 of 2007).* The medicines legislation provides the legal authority to nurses and midwives to prescribe. This authority is based upon the following conditions being satisfied:
  - The nurse/midwife is employed by a health service provider in a hospital, nursing home, clinic or other health service setting (including any case where the health service is provided in a private home).
  - The medicinal product is one that would be given in the usual course of the service provided in the health service setting in which the nurse/midwife is employed.
  - The prescription is issued in the usual course of the provision of that health service.
  - An Bord Altranais Personal Identification Number (PIN) of the registered nurse/midwife must also be stated on the prescription.

In addition, the 2007 Regulations allow a health service provider to determine further conditions for the prescriptive authority of the RNP.

The scope and context of practice for the RNP should be determined with reference to the competencies for prescriptive authority and practice standards that a nurse /midwife should possess and adhere to as part of their professional responsibilities. *Guidance to Nurses and Midwives on Medication Management* (An Bord Altranais, 2007) along with the relevant medicines legislation, national and health service provider health care and medicines policies must also inform the prescribing and medication management practices of the nurse/midwife.

The written CPA should be developed prior to the health service employer authorising the RNP to prescribe in the organisation. An Bord Altranais advises candidate RNPs in the education programme for prescriptive authority to

begin drafting the CPA while undertaking the programme. These guidelines should be used to support CPAs based upon the administrative processes and clinical governance structures of the health service employer. The CPA should contain at a minimum the detailed information as determined by the *Nurses Rules, 2010 Section 3.11b (SI No. 689 of 2010)* and the *Practice Standards and Guidelines for Nurses and Midwives with Prescriptive Authority* (An Bord Altranais, 2010).

2. Criteria for a Collaborative Practice Agreement

In this document, An Bord Altranais provides the criteria for the components of the CPA. The criteria are based upon the review of the literature and international experiences. The national policies for the nurse/midwife prescribing initiative have also been considered.

The CPA should include the following:

- Details of the applicant/RNP to include:

  An Bord Altranais registration number (PIN) of the registered nurse or midwife,

  Full name as registered with An Bord Altranais,

  Place of employment, work address, telephone number, email,

  Clinical area (e.g. Acute Care – A & E, Diabetes, Community),

  Job title (e.g. ANP – Urology, Respiratory Nurse Specialist, Community Midwife).

- Details of the Collaborating Medical Practitioner(s) to include:

  Full name,

  Area of medical specialty,

  Place of employment,

  Work address,

  Confirmation of registration with the Medical Council of Ireland.

- Details of the health service employer authorising the CPA:

  Full name,

  Title/position of the individual (e.g. director of nursing/midwifery or service manager).

- Attachment A which details the description of the practice setting and the specific clinical area of the RNP. This should include the patient/service user population and health conditions for which the RNP has responsibility. This information should represent the scope of practice of the individual RNP.

- Attachment B which details the listing of specific medications (generic names) of the medications the RNP is competent to prescribe and authorised to prescribe as per the local Drugs and Therapeutics Committee. Off label prescribing of authorised medications outside the terms of its product authorisation should also be detailed within this attachment[1].

- Attachment C which details:

  1) the description of the conditions, if any, that the health service provider has placed on the RNP's prescriptive authority.

  2) a description of the RNP's review and audit of her/his prescriptive practices.

  If the local Drugs and Therapeutic Committee's involvement is required for the criteria outlined in 1 and/or 2 of Attachment C above this should also be noted.

- Commencement date of the CPA with the accompanying signatures of the RNP, collaborating medical practitioner(s) and individual within the health service organisation (e.g. director of nursing/midwifery or service manager) authorised to approve the CPA.

- A date must be stipulated for the regular review and renewal of the CPA. (See section 3 for detailed guidance for the review and renewal process of the CPA).

- The RNP is responsible for maintaining continued competence for her/his prescriptive authority as per An Bord Altranais and the health service employer's policy. An Bord Altranais provides a draft portfolio for the RNP to use in recording continued competence activities. The draft portfolio can be downloaded from the website, www.nursingboard.ie.

1 An Bord Altranais supports the use of the HSE RNP Guidance Process for Off-label Medications (Office of the Nursing and Midwifery Services Director, 2010) or similar tool which provides a detailed template for RNPs and health service employers as a guide for the governance structures required for the implementation of off-label prescribing by RNPs. The HSE document can be accessed at www. http://www.hse.ie/eng/about/Who/ONMSD/practicedevelopment/NursePrescribing/.

3. Notification of the Collaborative Practice Agreement to An Bord Altranais

Initial Registration in the Registered Nurse Prescriber Division

The candidate RNP must complete and submit the Application Form for Registration in the Registered Nurse Prescriber Division with the appropriate fee to the Registration Department of An Bord Altranais. Part B of the Application Form requires the candidate to state specific information about her/his CPA.

The CPA is to be completed in full, signed and dated by the candidate RNP. The collaborating medical practitioner(s) and the authorised representative of the health service employer approving the CPA must also sign and date the form. The form and its attachments should be retained by the health service employer. A copy of the form and attachments A, B and C should be retained by the candidate RNP for her/his own records.

The CPA status of a RNP will initially be entered as "Valid" when the application for registration in Nurse Prescribers Division of the Register of An Bord Altranais is complete. This information will be placed with the registrant's information in the Check the Register section which is available for public viewing on An Bord Altranais website.

An Bord Altranias requires all newly RNPs to review and renew their initial CPA in one year's time and thereafter every two years.

For example if a nurse/midwife registers her/his prescribing qualification in Year 2011, the RNP is next required to review and renew their CPA in 2012. They will then be required to do this in 2014, 2016 etc.

Biannual Review and Renewal

A registered nurse/midwife whose name is on the RNP Division of An Bord Altranais Register for two years or more is required to review and renew her/his CPA every two years. An Bord Altranais provides written notification to the RNP in advance of the renewal date

The RNP must complete the CPA form in full, sign and date it. The collaborating medical practitioner(s) and the authorised representative of the health service employer approving the CPA renewal must also sign and date the form. If there are no changes to the criteria for Attachments A, B or C this should be noted on the form itself. If there are changes to any of these Attachments a new attachment should be drafted and included as part of the CPA renewal documentation to be approved by the health service employer.

All CPAs (initial and/or revised) are to be kept on file and stored locally by the RNP's health service employer. The RNP should retain a copy of the approved CPA form and attachments A, B and C for her/his own records.

The RNP Notification Form for CPA Review and Renewal must be submitted to An Bord Altranais by the RNP as evidence of her/his and the health service employer's review and approval of the CPA. Failure to submit the RNP Notification Form for CPA Renewal by the designated date will result in the CPA status becoming "Invalid".

The RNP and health service employer will be informed of the status change and it will be placed on the registrant's information on Check the Register section on An Bord Altranais website facility.

An Bord Altranais has the authority to review a CPA of a RNP if so required and may request and examine any CPA (current or previous ones) of a RNP. The RNP and the health service employer will be notified in writing of this.

The RNP will be in breach of An Bord Altranais regulatory framework for prescriptive authority if he/she prescribes medication without having a valid CPA on file and may be subject to disciplinary action.

4. Termination of the CPA

All CPAs are considered null and void on the termination/movement of employment for which the CPA is originally intended.

CPAs should terminate automatically if the RNP or medical practitioner no longer has an active unrestricted registration. The RNP shall notify An Bord Altranais in writing within five working days of any termination of a CPA. The Notification Form for Collaborative Practice Agreement Termination must be completed and sent to An Bord Altranais by the RNP. The RNP is obliged to notify the employer of this termination.

The registration information details of the RNP held by An Bord Altranais will be revised stating that the CPA status is invalid. The RNP and health service employer will be informed by An Bord Altranais of this status change.

The Collaborative Practice Agreement Form, RNP Notification Form for CPA Review and Renewal, Notification Form for Collaborative Practice Agreement Termination and Draft Portfolio are all available for downloading on the website www.nursingboard.ie

An Bord Altranais

An Bord Altranais, 18/20 Carysfort Avenue, Blackrock, Co. Dublin. Telephone: 01 639 8500.
Email: education@nursingboard.ie Web: **www.nursingboard.ie**

Appendix F Example of a Collaborative Practice Agreement

Attachment A

Collaborative Practice Agreement for Nurse / Midwife Medicinal Product Prescription

Organisation: [redacted]

Telephone: [redacted]
Fax: [redacted]
E-Mail [redacted]

Medical Mentor: [redacted]
Medical Mentor Signature: _____
Date:_____
Reg. No:_____

Candidate Registered Nurse Prescriber: [redacted].
P.I.N. No: [redacted]
Registered Nurse Prescriber Signature: _____
Date:_____

Director of Nursing: [redacted]
Signature: _____
Date:_____

Date of Commencement:

Date of Review:

Collaborative Practice Agreement

Between

[redacted] CNM 2

And

Psychiatric Consultant Staff, [redacted] Mental Health Service

Attachment A: Registered Nurse Prescribing Practice Setting

Location: The Registered Nurse Prescriber to whom this collaborative Practice Agreement applies is employed by the [redacted] Mental Health Services to practice in both In-patient and Community mental health settings. Prescriptive authority only applies to patients cared for by the Registered Nurse Prescriber while undertaking her normal duties with-in this service. The service extends across the following sector areas:

Sector area	Responsible Consultant Psychiatrist
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]

Population: The Registered Nurse Prescriber is responsible for the care of adult patients (over the age of 18 years) living within the sector areas listed above, with or without a primary psychiatric diagnosis, who present to the [redacted] Mental Health Services in the in-patient setting, or in any community setting, where the [redacted] Mental Health Service operates.

The role of the Registered Nurse Prescriber within the [redacted] Mental Health Service is to stabilise and improve the mental health of persons who present with:

- Psychotic Disorders

- Affective Disorders
- Personality Disorders
- Anxiety Disorders
- Alcohol Dependence with/without a diagnosed primary psychiatric disorder

[redacted]:

Focussing Minds (2002) described Mental Health Day Centres as places that provide support both social and personal to mental health consumers and their families, providing training in daily living skills, leisure activities, work related activities and integration into the local community. Referrals to [redacted] day centres now come directly from acute care with a view to promoting a return to home or community living within a reasonable time. The benefits of attending day services have been demonstrated in studies such as Allen's (2000) report which outlines they were "highly valued" by the users who perceived them as having a "key role in preventing mental health deterioration". Users wanted greater access at weekends but the service is only available five days per week. The [redacted] Day Centre is part of the community rehabilitation team, which has the responsibility of looking after all clients who currently suffer from an enduring mental illness within the community area. The nurse prescriber will also be part of the community rehabilitation team responsibility for all the clients within its' care. My role as a Day Centre Manager and Nurse Prescriber will be to collaborate with the Medical Supervisor and the Registrar of the community rehabilitation team with assessments, prescribing and planning of care for all clients within this group.

Attachment B

Collaborative Practice Agreement

Between

[redacted] **CNM 2**

And

Psychiatric Consultant Staff, [redacted] Mental Health Service

Attachment B: List of Specific Medications and Categories of Medications that the Nurse Prescriber is Authorised to Prescribe.

	Drug	Dose	Route/Form	Circumstances	Conditions
1	Chlordiazepoxide	Up to 250mg daily in divided doses	Oral/Caps	Alcohol detox	Doses based on +/- use of CIWA-A Scale + Clinical
2	Thiamine	100-300mg daily	Oral/tabs	Prophylaxis for Wernicke-Korsakoff syndrome.	
3	Pabrinex	7ml x 2 amps daily for 3-5 days	IM/injection	Prophylaxis for Wernicke-Korsakoff syndrome.	During alcohol detoxification. In-patient setting only
4	Paracetamol	Up to 1g QDS	Oral/tabs	Pain	
5	Metoclopramide	10-30mg daily in divided doses	Oral/tabs suspension	Nausea+ vomiting	
6	Loperamide	Up to 8mg daily	Oral/caps	Diarrhoea	

7	Lactulose	Up to 30mls daily in divided doss	Oral/suspension	Constipation	
8	Chlorphenamine	Up to 20mg daily in divided doses	Oral/tabs	Symptomatic relief of allergy	
9	Diazepam	Up to 30mg daily in divided doses	Oral/tabs	Anxiety	Initiate or increase to 20 mg. Review by responsible
10	Lorazepam	Up to 8mg daily in divided doses	Oral/tabs Im/injection	Anxiety and acute agitation	
11	Alprazolam	Up to 4 mg daily in divided doses	Oral/tabs	Anxiety	
12	Pregabalin	Up to 600mgs. daily in divided doses	Oral\Caps	Generalised Anxiety Disorder	
13	Flurazepam	Up to 30mg	Oral/caps	Insomnia	
14	Zolpidem	Up to 10mg	Oral/tabs	Insomnia	
15	Zopiclone	Up to 7.5mg	Oral/tabs	Insomnia	
16	Haloperidol	Up to 30mg daily in divided doses	Oral/tabs /suspension IM/injection	Psychosis/mania/ psychomotor agitation/violent/ dangerous	10mg max IM route.
17	Olanzapine	Up to 20mg daily	Oral/tabs	Psychosis/mania/ psychomotor agitation/violent/ dangerous	

18	Chlorpromazine	Up to 300mg daily in divided doses	Oral/tabs /suspension	Psychosis/mania/ anxiety/agitation	
19	Quetiapine	Up to 800mg daily in divided doses	Oral/tabs	Psychosis/mania	
20	Biperiden	Up to 4mg	Oral/tabs IM/injection	Drug induced extra-pyramidal symptoms	
21	Venlafaxine	375mg daily in divided doses	Oral/tabs	Depression/ Generalised Anxiety Disorder	Initiate or increase to 300mg. Review by responsible consultant before increase to 375mg
22	Venlafxine XL	Up to 225mg daily	Oral/caps	Depression/ Generalised Anxiety Disorder	
23	Mirtazepine	Up to 45mg daily	Oral/tabs	Depression	
25	Ecitalopram	Up to 20mg daily	Oral/tabs	Depression/ panic/ Social Anxiety Disorder	
26	Duloxitine	Up to 120mgs. per day	Oral\ tabs	Anxiety depression	

27	Aripiprazole	Up to Max. 30mgs. daily	Oral\Suspension	Atypical Anti-psychotic.	
28	Sulpiride	Up to max. 1200 B.D.	Oral.	Psychoses	
29	Resperidone	Up to Max 16mgs. Daily,1st Episode.	Oral.	Psychoses.	
30	Citalopram	Up to 60mgs. daily.	Oral Oral drops	Anti-depressant	
31	Sertaline	Up to max 200mgs daily	Oral	Depression\ Anxiety	
32	Tradazone	Up to Max 600mgs. Daily	Oral	Depression.	
33	Mefenamic Acid	Up to Max 1500mgs. Daily.	Oral	Pain Killer.	

Attachment C

Collaborative Practice Agreement

Between

[redacted] **CNM 2**

And

Psychiatric Consultant Staff, [redacted] Mental Health Service

Review & Audit

The Registered Nurse Prescriber will input all medicinal prescription information required for the National Nurse and Midwife Prescribing Minimum Data Set. This will enable the Registered Nurse Prescriber, Medical Mentor and the Prescribing Site Co-ordinator to run audit reports on a regular basis. Reports will be sent six monthly (initially) to the [redacted] Mental Health Service's Drugs & Therapeutics Committee for review.

The Prescribing Site Coordinator or her delegate will audit the practices of the Registered Nurse Prescriber within three months of commencement date of this Collaborative Practice Agreement. The dates of future audits will be agreed between the Registered Nurse Prescriber and the collaborative Medical Mentor following the initial audit

Communication Mechanism:

- The patient medicinal prescriptions are logged in the National Nurse and Midwife Prescribing Minimum dataset
- Record keeping is in line with current service policy
- The Registered Nurse Prescriber will use the existing system of reporting adverse drug reactions
- Where the patient condition exceeds the Registered Nurse Prescriber's scope of practice, the Registered Nurse Prescriber will consult with his medical / nursing colleagues. Consultations and any resulting plans will be communicated to the patient and documented in their records.
- The RNP will provide the patient with verbal and written information, where appropriate on any medications prescribed.
- Policy on nurse prescribing is available in the locations where the RNP will work.
- A collaborating medical practitioner is available to the Registered Nurse Prescriber for consultation, supervision and ongoing learning.

Appendix G HSE Nurse/Midwife Prescribing Quarterly Report

Health Service Executive

National Report on

Nurse and Midwife Medicinal Product Prescribing

31 December 2019

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Advisory Note:

The information/statistics are provided by the Higher Education Institutions, Health Service Providers and the Nursing and Midwifery Board of Ireland at a point in time to update the HSE Nurse/Midwife Prescribing Database. Some of the information in this report may have changed since the data was collected.

Introduction

Since the enactment of legislation and professional regulation in May 2007 giving prescriptive authority to nurses and midwives, 1843 nurses and midwives have been funded by the Office of the Nursing and Midwifery Services Director (ONMSD), Office of the Chief Clinical Officer, Health Service Executive (HSE), to undertake the approved education programme. The candidates and Registered Nurse/Midwife Prescribers (RN/MPs) are from 221 HSE and HSE funded health service providers (51 acute hospitals across the 7 Hospital Groups, 161 primary care services across the 9 CHO areas and 9 Irish Prison Services (IPS)). The RN/MPs work across 204 clinical areas (see Appendix 1).

Education Programmes

The medicinal product prescribing education programmes are provided by the following Higher Education Institutions (HEIs) commencing in either January or September each year

- Royal College of Surgeons Ireland (RCSI),
- University College Cork (UCC),
- University College Dublin (UCD),
- University of Limerick (UL),
- Trinity College Dublin (TCD) and
- National University of Ireland Galway (NUIG).

Funding for the education programme continues to be provided in full by the ONMSD to nurses and midwives working in HSE and HSE funded agencies (Section 38). Applicants are required to complete and sign a *Site Declaration Form* as part of their application process for the prescribing education programme in order to secure HSE funding.

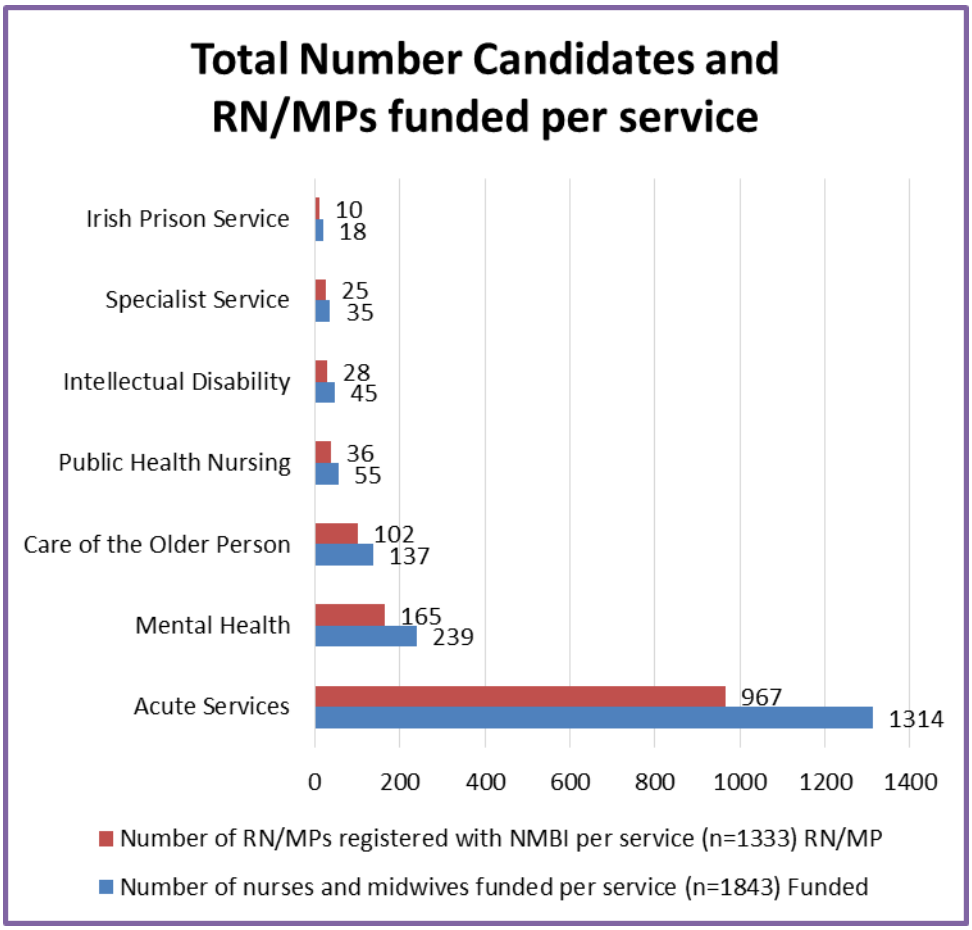
National Summary

Of the 1843 nurses and midwives that have been funded by the HSE, 1333 nurses and midwives are registered as RN/MPs with the NMBI; 967 are from Acute Hospitals, 356 from Primary Care and 10 from the Irish Prison Services (see Table 1) and (Figure 1)

Table 1:

Health Service Providers	Number of nurses and midwives funded	Number of RN/MPs registered with NMBI
	Funded	**RNP**
Acute Services	1314	967
Mental Health	239	165
Care of the Older Person	137	102
Public Health Nursing	55	36
Intellectual Disability	45	28
Specialist Service	35	25
Irish Prison Service	18	10
TOTAL	**1843**	**1333**

Figure 1:



Source: Office of the Nursing and Midwifery Services Director – 31 December 2019

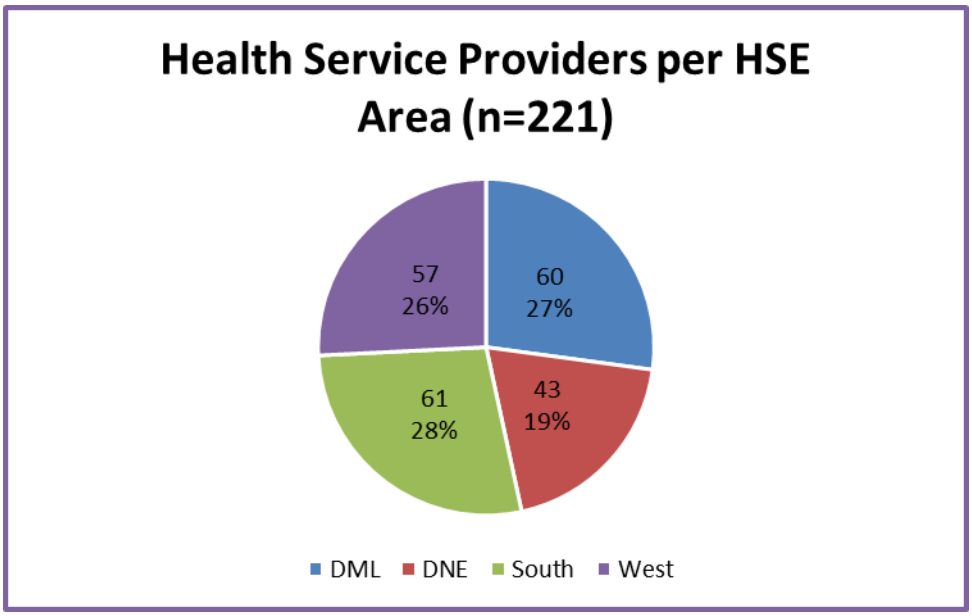
At the time of preparing this report 510 nurses and midwives who were funded by the HSE to undertake the education programme are not yet registered with NMBI as RN/MPs. This number changes on an on-going basis. The reasons are as follows:

- 210 (41%) at various stages of completing their documentation in preparation for registration as RN/MPs with NMBI
- 156 (30.6%) are in college or awaiting examination results
- 57 (11.2%) are not progressing to registration at this point in time for various reasons such as leave of absence, long term sick leave, maternity leave or have changed their work location since completing the education programme
- 77 (15%) are not eligible to register for various reasons of which
    - 47 retired/resigned
    - 30 withdrew from the education programme or failed to complete the education programme within the agreed timeframe by the HEIs (25 of the withdrawals/fails took place prior to 2013).

Number of Health Service Providers by HSE Area

The 221 health service providers (including IPS) where nurse and midwife medicinal product prescribing has been implemented are representative of the four HSE areas. Figure 2 identifies the number of health service providers in each HSE area as follows, South (n=61); West (n=57); DML (n=60) and DNE (n=43).

Figure 2:



Source: Office of the Nursing and Midwifery Services Director –31 December 2019

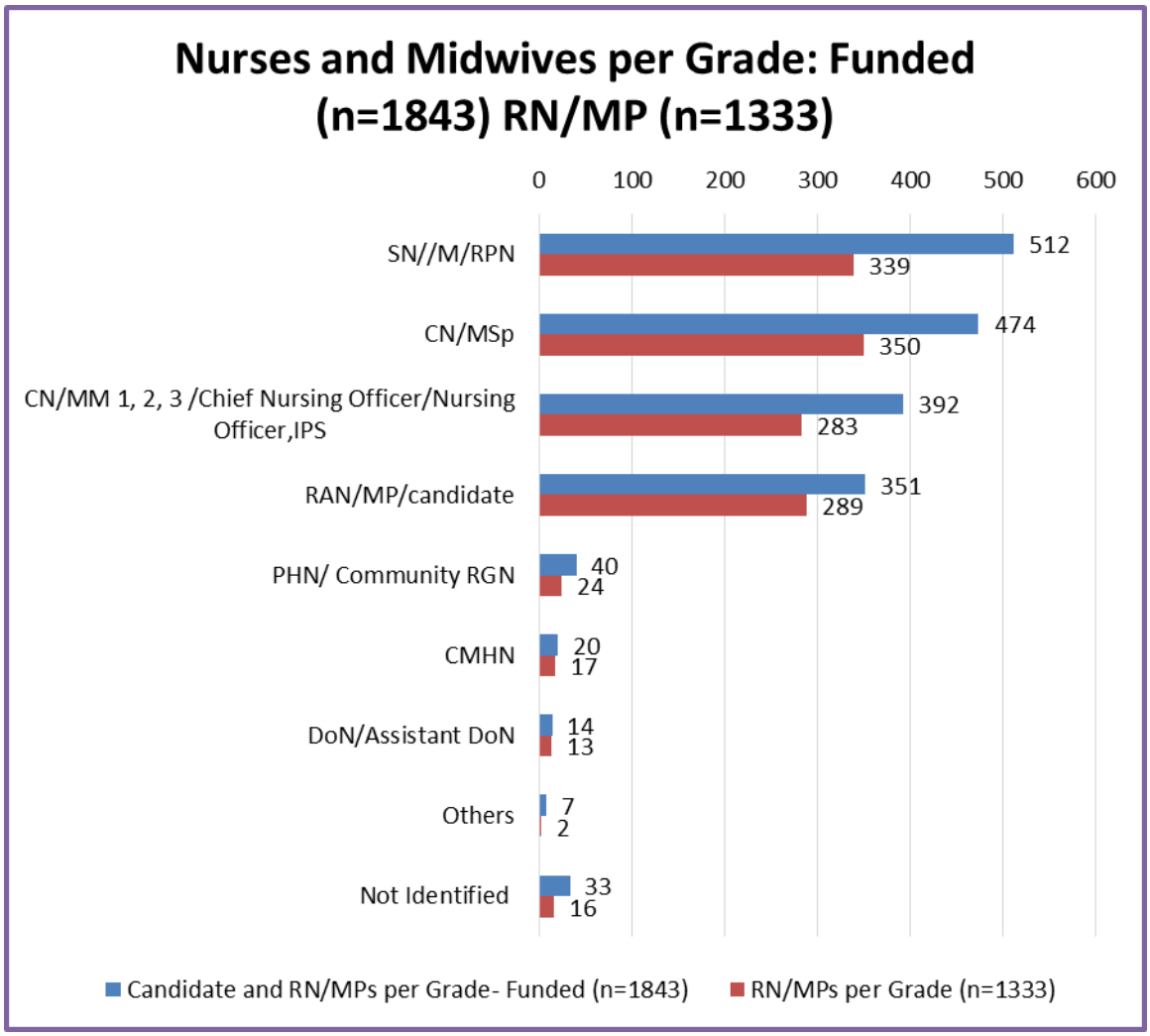
Clinical Areas

The RN/MPs are representative of a broad range of clinical areas. Appendix 1 provides details of the numbers of RN/MPs per clinical area.

Grades

Candidates and RN/MPs are from diverse grades. The highest number of RN/MPs are at staff nurse/midwife, registered psychiatric nurse grade (SN/SM/RPN) (n=512), Clinical Nurse/Midwife Specialist (CNSp/CMSp) (n=474) and Clinical Nurse/Midwife Manger (CN/MM) /Chief Nursing Officer Nursing Officer, IPS (n=392) & Candidate/Registered Advanced Nurse/Midwife Practitioner RANP/RAMP (n=351). Figure 3 presents the number of candidate and RN/MPs by grade.

Figure 3:



Source: Office of the Nursing and Midwifery Services Director – 31 December 2019

HSE Funded Education Programmes

The ONMSD has funded a total of 1843 nurses and midwives across the HSE and HSE funded agencies (Section 38), to undertake the nurse and midwife medicinal product prescribing education programme. Tables 2 and Figures 4, 5 and 6 provide details of the numbers of nurses and midwives funded for the education programme in each of the higher education institutions. Table 3 provides a breakdown of the numbers funded per HSE area.

Table 2:

Breakdown of Nurses Midwives funded per HEI.								
Year	**NUIG**	**RCSI/WIT**	**RCSI**	**TCD**	**UCC**	**UCD**	**UL**	**Totals**
2007	0	0	63	0	41	0	0	104
2008	0	0	86	0	32	0	0	118
2009	0	0	122	0	42	0	0	164
2010	0	0	149	0	38	0	0	187
2011	18	0	109	0	25	18	12	182
2012	26	0	66	6	13	15	0	126
2013	15	5	64	5	10	26	7	132
2014	33	3	40	8	7	19	0	110
2015	20	0	19	5	23	24	0	91
2016	25	0	47	6	23	19	0	120
2017	25	0	51	15	13	21	0	125
2018	36	0	44	16	34	78	7	215
2019	37	0	39	15	11	53	14	169
TOTALS	**236**	**8**	**898**	**76**	**312**	**273**	**40**	**1843**

Figure 4:

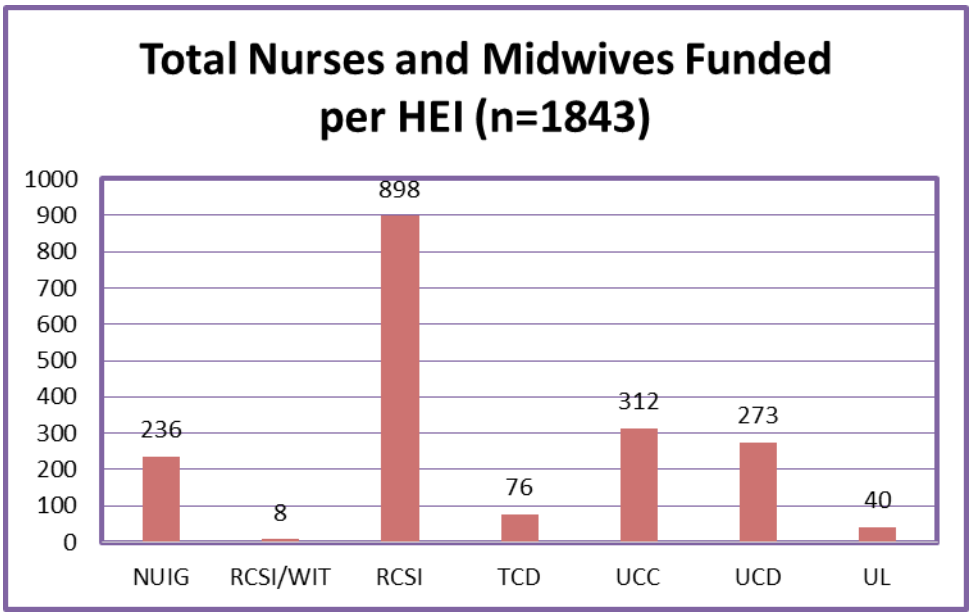


Figure 5:

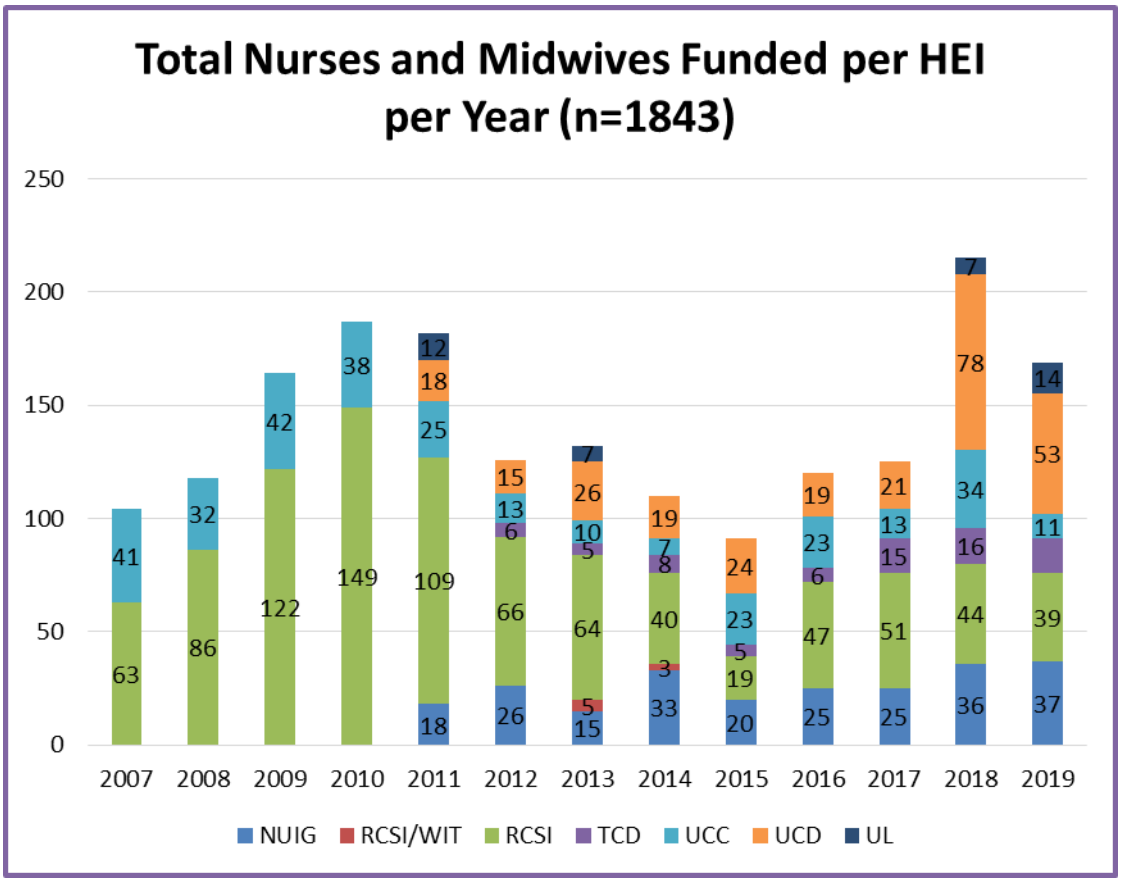


Figure 6:

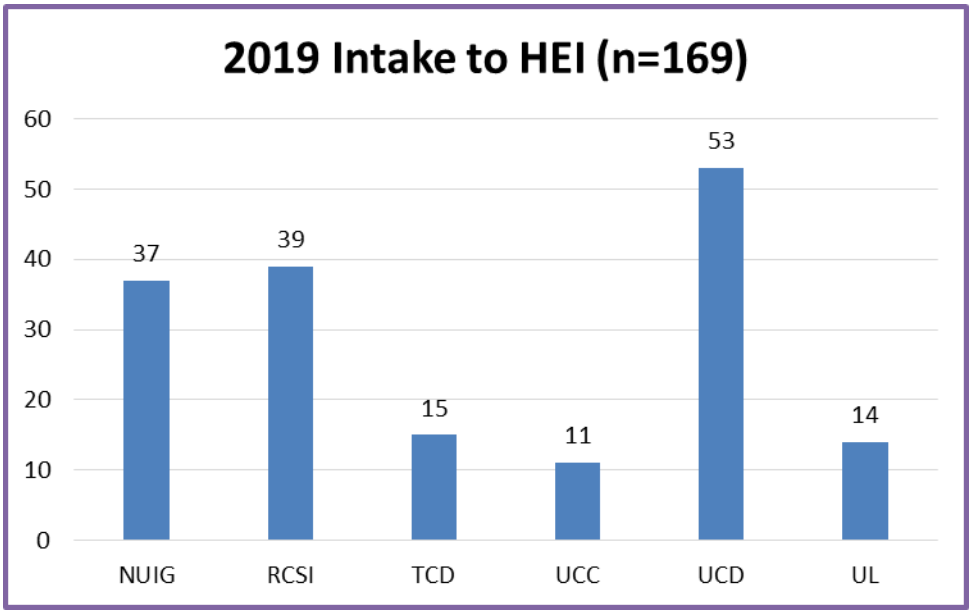


Table 3:

Nurses and Midwives funded per Year per HSE area					
Year	**DML**	**DNE**	**South**	**West**	**Totals**
2007	37	21	42	4	**104**
2008	39	31	28	20	**118**
2009	43	53	29	39	**164**
2010	50	31	41	65	**187**
2011	38	39	41	64	**182**
2012	43	23	25	35	**126**
2013	44	26	30	32	**132**
2014	30	21	17	42	**110**
2015	24	18	27	22	**91**
2016	38	20	30	32	**120**
2017	51	18	24	32	**125**
2018	61	52	54	48	**215**
2019	46	40	29	54	**169**
TOTAL	544	393	417	489	**1843**

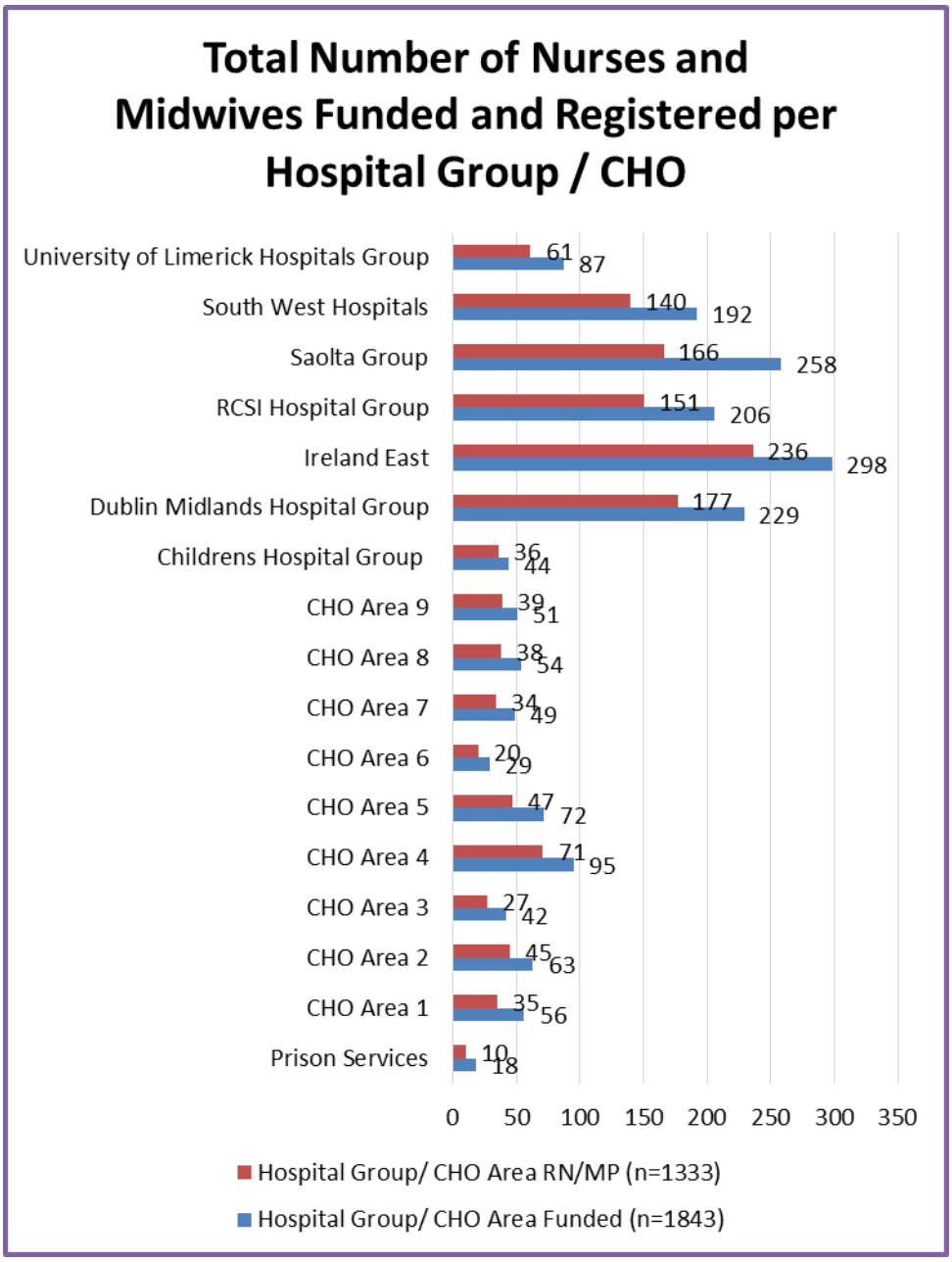
Source: Office of the Nursing and Midwifery Services Director – 31 December 2019

Table 4 and Figure 7 provide the breakdown of the number of nurses and midwives funded and registered with the NMBI as RN/MPs per Hospital Group, CHO Area and the Irish Prison Services.

Table 4:

Numbers of Nurses and Midwives Funded and Registered with NMBI as RN/MPs per Hospital Group and CHO Area		
Hospital Group/ CHO Area	**Funded**	**RN/MPs**
CHO Area 1	56	35
CHO Area 2	63	45
CHO Area 3	42	27
CHO Area 4	95	71
CHO Area 5	72	47
CHO Area 6	29	20
CHO Area 7	49	34
CHO Area 8	54	38
CHO Area 9	51	39
Childrens Hospital Group	44	36
Dublin Midlands Hospital Group	229	177
Ireland East	298	236
RCSI Hospital Group	206	151
Saolta Group	258	166
South West Hospitals	192	140
Prison Services	18	10
University of Limerick Hospitals Group	87	61
TOTAL	**1843**	**1333**

Figure 7:



Source: Office of the Nursing and Midwifery Services Director – 31 December 2019

The benefits of nurse and midwife medicinal product prescribing have been consistently reported in the literature. The evidence suggests that as nurses and midwives take on new roles and responsibilities, the authority and ability to prescribe medicinal products has improved both access to medicines and the timeliness of interventions for those seeking treatment. This is clearly demonstrated from a number of posters/case studies presented at the National Nurse and Midwife Medicinal Product Prescribing Conference – Collaboration and Innovation: Achieving More in Patient Care, April 2018, See Appendix 11 for poster abstracts.

Appendix 1: Number of Registered Nurse /Midwife Prescribers per Clinical Areas

Clinical Area	No of RN/MPs
Acute Medicine	17
Ambulatory Care	1
Anticoagulation	8
Anticoagulation/Haematology	2
Breast Care	1
Cardiac Rehabilitation	7
Cardiology	21
Cardiothoracic	3
Cardiothoracic Intensive Care	1
Care Of The Older Person	110
Care of the Older Person: Frail Elderly	4
Care of the Older Person: Integrated Care	1
Care Of The Older Person: Rehabilitation	2
Care Of The Older Person: Tissue Viability	1
Chest Pain	6
Chest Pain/ Cardiovascular/Heart Failure	1
Chest Pain/Heart Failure	2
Child and Adolescent Mental Health (CAMHS)	1
Children's	14
Children's Asthma	1
Children's Cystic Fibrosis	7
Childrens' Dermatology	1
Children's Diabetes	3
Children's Emergency	10
Children's Epilepsy	4
Children's Haemoglobinopathy	2
Children's ICU	1
Children's Inflammatory Bowel Disease	1
Children's Neurosurgery	1
Children's Oncology /Haematology	3
Children's Operating Department	1
Children's Pain Management	3
Children's Remedial	1
Children's Urology	2
Coloproctology	1
Colorectal	5
Colorectal National Colorectal Screen Service	3

Colposcopy	4
COPD	2
COPD Outreach	1
Coronary Care	2
Cystic Fibrosis	1
Day Ward Medical Assessment	2
Day Ward, Medical/Surgical	1
Dermatology	12
Diabetes	43
Diabetes (Integrated With Primary Care)	4
Diabetes Day Centre	2
Dialysis	1
Dialysis Haemodialysis	2
Dialysis Peritoneal	2
Dialysis Renal	4
Drug Treatment	2
Ear Nose & Throat	7
Emergency	126
Emergency Minor Injuries	7
Emergency Rapid Assessment	1
Emergency Urgent Care Centre	1
Endocrinology	1
Endoscopy	8
Epilepsy	15
Frailty	1
Gastroenterology	6
Gastrointestinal	1
Gay Men's Health	4
General Medicine	12
General Surgical	2
General Theatre	1
Gynaecology	1
Gynaecology Oncology	17
Haematology	2
Hepatobiliary Oncology	3
Heart And Lung Transplant	2
Heart Failure	9
Immunology	1
Infection Prevention & Control	1
Infectious Diseases	1
Intellectual Disability	20
Intellectual Disability: Challenging Behaviour	1

Intensive Care	1
Intensive Care/Critical Care	2
Intensive Care/Special Care	97
Liver And Pancreatic	11
Liver Transplant Co-Ordination	1
Lung Cancer Co-Ordination	5
Medical Assessment Unit	1
Mental Health	85
Mental Health Acute	2
Mental Health Addiction	2
Mental Health Addiction Liaison	1
Mental Health CAMHS	11
Mental Health CBT	1
Mental Health Community	27
Mental Health Home Care	1
Mental Health Home-based Crisis Team	3
Mental Health Intellectual Disability	2
Mental Health Liaison	9
Mental Health Primary Care	1
Mental Health Prison In-reach Liaison	1
Mental Health Promotion	1
Mental Health Psychiatry Of Old Age	3
Mental Health Suicide Crisis Assessment (SCAN)	2
Midwifery	3
Midwifery Continence Advisor	1
Midwifery Diabetes	1
Midwifery Early Discharge	33
Midwifery Emergency	2
Midwifery Fetal Assessment	1
Midwifery Home Birth Service	1
Midwifery Infection Prevention & Control	1
Midwifery Labour Delivery	33
Midwifery Lactation	2
Midwifery Operating Theatre	1
Midwifery, Perinatal Mental Health	1
Migraine	1
Neonatal Intensive Care	3
Neonatology	8
Nephrology/Chronic Kidney Disease	2
Neurology	5
Occupational Health	2
Oncology	40

Ophthalmology	7
Orthopaedics	4
Orthopaedics/Trauma	1
Orthopaedics/Trauma OPD	1
Osteoporosis	2
Outpatients Department	1
Outpatients Department (Plastics)	2
Paediatrics	1
Pain	2
Pain Management	16
Palliative Care	9
Palliative care/ Elderly Care	1
Plastics	1
Preoperative Assessment	6
Primary Care Heart Failure	1
Prison Services	9
Prostate Cancer	1
Prostate Clinic	2
Public Health Nursing	10
Public Health Nursing Diabetes	1
Public Health Nursing Palliative Care	6
Public Health Nursing Tissue Viability	5
Public Health Nursing Vaccination	5
Radiation Oncology	1
Radiotherapy	4
Rapid access lung cancer	1
Renal	5
Renal Dialysis	1
Renal Nephrology	2
Renal Urology	3
Respiratory	33
Respiratory Emergency	1
Respiratory integrated care	1
Respiratory Tuberculosis	1
Rheumatology	28
SAFE	1
Sexual Assault & Treatment Unit (SATU)	6
Sexual Health	6
Sexual Health Guide	2
Sexuality (Rehabilitation)	1
Smoking Cessation	1
Stoma Care	2

Stroke Care	4
Stroke Rehabilitation	2
Substance Misuse	2
Tissue Viability	9
Urgent Care Centre	2
Urodynamics	2
Urology	3
Vascular	1

Appendix 11: Case Studies

A Study on the Need for and Value of Nurse/Midwife Prescribing in Ireland

Presenters:	1. Ms. Anne Fahy, 2. Ms. Jill Murphy, 3. Dr. Donna M Wilson, 4. Ms. Gerardine Kennedy
Organisation:	1. University of Limerick 2. University of Limerick 3. University of Alberta, Canada and University of Limerick, 4. University Hospital Limerick, Limerick

Background
Ireland is one of 34 countries where select nurses and/or midwives prescribe medicinal products. As this scope of practice extension is relatively new, only a small amount of research evidence exists to substantiate the need for and value of nurse/midwife prescribing.

Aims & Objectives
The aims & objectives of this study are to understand the need for and value of nurse/midwife prescribing of medicinal products and determine the value of or outcomes of nurse/midwifery prescribing for patients, clients and pregnant women, the healthcare system as a whole, the individual nurse/midwife prescriber, and the nursing/midwifery profession.

Methods
A qualitative study was undertaken involving interviews of nurse/midwife prescribers in Ireland to gain insight into the need for and value of nurse/midwife prescribing.

Results
Six data themes were identified: More than a prescription; Highly individualized evidence-based specialist care; Assured, timely, and rapid accessibility to needed care for patients; Health system and health care efficiency gains; Satisfaction with nurse/midwife prescriber services; Quality care improvements.

Nurse-led Corneal Collagen Cross-linking (CXL) service at the Royal Victoria Eye and Ear Hospital (RVEEH), Dublin

Presenters:	Diana Malata
Organisation:	Royal Victoria Eye and Ear Hospital

Background

CXL is a treatment for keratoconus, a debilitating eye condition in adolescence and earlier adulthood, in which the normally round domed-shaped cornea progressively thins causing a cone-like bulge to develop. CXL is the only treatment available to halt progression in keratoconus. Before CXL no interventions were available to arrest or slow disease progression and corneal transplantation was required in up to 25% of keratoconic eyes. RVEEH has pioneered the way forward for the first nurse to perform the full CXL procedure in Ireland.

Aims/Objectives:

The objective of the service is to improve patient care, experience and satisfaction by providing nursing expertise and continuity of care and by reducing patient waiting times and patient stay in the hospital.

The Moorefield's Eye Hospital nurse-led CXL protocol was reviewed and adapted to the RVEEH. With the support of the supervising consultant ophthalmologists, the training commenced in January 2016. Five CXL procedures were observed before starting the training programme in January 2016. Twenty CXL procedures were done under supervision, which was completed on the 23rd of February 2016. The Corneal nurse has undertaken the nurse prescribing course to be effective in the role. The Nurse-led CXL service has its own cohort of patients, where patients are referred to the service whereby the nurse assesses, consents, performs the surgical procedure and prescribes medication.

Outcome/Results :

Nurse-led CXL service has reduced patient waiting time for treatment, median waiting time for CXL fell from 71 days (range, 40-293 days) to 53 days (range, 7-194 days) and from January 2017 was even reduced to 48 days (range, 19-97 days). Since undertaking the role of nurse prescriber, the service has also reduced patient stay in the hospital, median patient stay in the hospital fell from more than 3 hours to 1.29 hours (range, 55 minutes – 2 hours). Minimising waiting time promotes better patient experience thus improving patient satisfaction.

Plan for Sustainability/Future Plans:

To develop a nurse-led keratoconus service, a referral centre for all keratoconus patients in Ireland.

The Impact of Nurse Prescribing in Overcoming Barriers to Healthcare Needs Following Rape/Sexual Assault in a Sexual Assault Treatment Unit in Rural Ireland

Presenters:	Connie Mc Gilloway - Clinical Nurse Specialist (CNS) Sexual Assault Forensic Examiner (SAFE)
Organisation:	Donegal Sexual Assault Treatment Unit (SATU), Saolta University Health Group, HSE

Background

Crime statistics suggest that people reporting rape in Ireland increased by 28% in the past year (RCNI, 2018). A recognised concern is the gap in responding to complex needs following rape/sexual assault. Bridging this gap, Clinical Nurse Specialists (CNS) Sexual Assault Forensic Examiners (SAFEs) were initiated in 2009, taking on roles traditionally identified with doctors (O'Shea, 2006). The Donegal SATU is a nurse-led service caring for the forensic and healthcare needs of persons, 14-years-and-over following rape/sexual assault. The service currently employs one CNS SAFE Registered Nurse Prescriber (RNP) and one CNS SAFE, Candidate RNP.

Aims/objectives

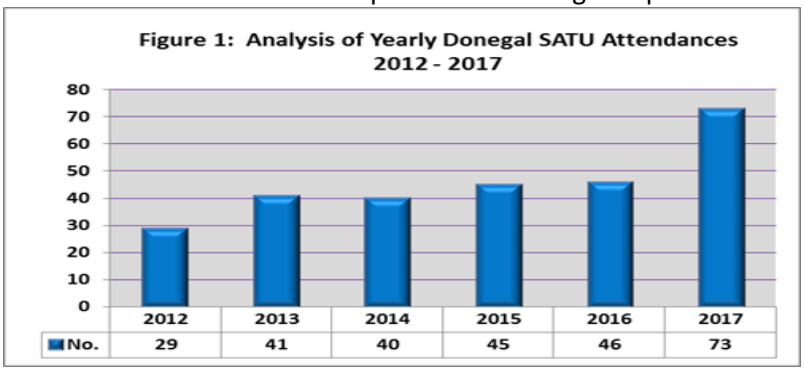
To deliver a high quality service that enhances time-sensitive and appropriate healthcare for persons following rape/sexual assault.

Approaching the Project:

Prior to the introduction of Nurse Prescribing and a 24-hour SATU service in Donegal, the service was fragmented, patients accessed medication from various sources. Many people from Donegal travelled to Dublin accompanied by Gardaí, to attain appropriate forensic and specialised healthcare. The introduction of Nurse prescribing in correlation with an expanded service has minimised barriers; enabling easier access to time-sensitive and appropriate specialist healthcare.

Outcome/results

Since the instigation of awareness-raising-programmes in 2012 regarding the suite of services available within the Donegal SATU, there has been a continuous increase in persons attending for specialised care.



The impact of nurse prescribing in delivering time-sensitive appropriate care and treatment in the Donegal SATU is presented in the 'Quality of Care' Key Performance Indicators developed in 2014 (National SATU Guidelines, 2014).

Plan for Sustainability/Future Plans

Strategic planning and expanding outreach clinics. Maintaining standards and continuing to provide essential high quality specialised healthcare following rape/sexual assault. Nurse Prescribing is an integral part of this development.

Analysis of Nurse prescribed CPAP in Relation to Compliance and Efficacy Nurse Led Sleep Clinic Follow Ups of Patients with Obstructive Sleep Apnoea

Presenters:	M. Nagle, C. O Shea, D. Freire, H. Dias, A. Mulgrew
Organisation:	Department of Respiratory Medicine, Bon Secours Hospital, Tralee, Co. Kerry

Obstructive Sleep Apnoea (OSA) occurs in 4% of women and 9% of men. Continuous positive airway pressure (CPAP) therapy is the most common treatment for OSA. Adequate compliance is crucial in prognosis.

A retrospective study of 67 patients on nurse prescribed CPAP attending a nurse led sleep clinic in Bon Secours Tralee was completed. This study aimed to evaluate nurse prescribed CPAP compliance and the factors that affect it. Apnoea-Hyponea Index (AHI) and epworth sleepiness scale (ESS) was measured at time of diagnosis, after autotitration, at 6 weeks, 6 months and 1year nurse led follow ups. Compliance was also measured at each follow up in the nurse lead clinic.

Patients had excellent treatment outcomes with a mean improvement in AHI of 31.17 (34.74 initially, 3.57 at 1 year) and ESS of 8.94 (12.28 initially, 3.34 at 1 year). Surprisingly, initial OSA severity, as estimated by AHI or ESS, did not influence CPAP compliance (r = -.271 ; -.256 respectively). The study did however demonstrates the value of nurse led sleep clinic follow up as compliance was excellent at one year (5.21 hours/night, range = 2.41 – 10.3). .

It also suggests that in a well-treated group of patients, their initial parameters are not important in predicting CPAP compliance. In conclusion sleep clinic follow up was valuable to good compliance, especially if provided by the nurse prescriber, who met the patient at their initial commencement of CPAP therapy

Registered Advanced Nurse Practitioner (RANP) in Cardiology Prescribed Vernakalant Hydrochloride for Cardioversion and Same Day Discharge of Patients with Recent Onset (≤48 hours) Low Risk Non-Valvular Atrial Fibrillation (NVAF) Reduces Length of Stay (LoS) in the Emergency Department and Prevents Hospital Admission

Presenters:	Paul Stoneman / Richard Sheahan / Peadar Gilligan / Paul Mahon / Joseph Adams / Fiona Colbert
Organisation:	Beaumont Hospital, Emergency / Cardiology Departments

Background

Following successful completion of certificate in nurse/midwifery prescribing, review of local clinical practice agreement (CPA) and entry into prescribing division, the RANP has prescriptive authority to prescribe (amongst other medications) Vernakalant Hydrochloride; a newly licensed anti arrhythmic medication for the conversion of recent onset NVAF.

In patients with non-valvular Atrial Fibrillation (NVAF) that qualify for rhythm control, it's important to perform cardioversion without delay to minimize electric and structural remodelling of the atrium and the risk of stroke. Available treatments include chemical or electrical (DC) cardioversion. DC cardioversion is a highly effective treatment but is resource intensive, requires anaesthesia and for the patient to be fasting for at least 3 hours. Until now, chemical cardioversion agents also exposed patients to potentially lethal arrhythmias including ventricular tachycardia and ventricular fibrillation. Such arrhythmias can occur up to 72 hours post cardioversion. Our novel approach to chemical cardioversion using Vernakalant hydrochloride reduced time in NVAF and avoided admission to an acute hospital bed in 59 out of 61 (97%) ED patients.

Aims and Objectives

We then audited the outcomes of patients managed by RANP with NVAF who were prescribed Vernakalant Hydrochloride with the intention of cardioversion and same day discharge from ED.

From 2012, we began developing and auditing RANP prescribed Vernakalant in patients with NVAF eligible for cardioversion and same day discharge that were managed by RANP.

Results:

Sinus rhythm was restored in 51 out of 6 patients (84%) in an average of 8.8 minutes (median 8 minutes), average CHA_2DS_2-VASc of 0.92, HASBLED of 0.21 and average symptoms duration of 11 hours. 59 out of 61 (97%) patients were discharged after 2 hours of monitoring.

Outcome/ Results:

Same day cardioversion and discharge by RANP of patients presenting with recent onset, low risk NVAF has many potential benefits to the patient and the organization. Vernakalant is safe, practical and effective, reducing potential morbidity and mortality associated with alternative treatment strategies. Vernakalant reduces length of stay in the ED, negates the need for admission, improves patient experience and saves on limited human, capital and stock resources which can then be redeployed to treat other patients.

Plan for Future:

To continue auditing RANP prescribed Vernakalant with a view to eventually extending the protocol to senior ED Doctors in order to emulate the success so far of RANP prescribed Vernakalant and same day discharge of patients presenting to ED with NVAF.

Reduction in Chemical Laxatives Using Natural Substitute

Presenters:	Asha Kardar / Catherine Higgins
Organisation:	Lusk Community Unit

Background

Lusk community unit is an older care facility with 45 long stay residents, 5 respite residents, day care facility and warfarin clinics. It was noticed in the medication audit that the number of residents using laxatives was high. Recent research agrees with this finding,>50% of nursing home residents complain of constipation. This is due to poly pharmacy and multiple pathologies.

A**ims/Objectives**:

As a Nurse Prescriber I took this opportunity to make use of Flaxseeds as natural, colon friendly laxative while reducing the use of other chemical laxatives for the resident's well-being and for Unit benefit.

- To undertake bowel health audit on all residents in the unit
- To provide quality care, wellbeing and safety.
- To reduce the usage of laxatives due to side effects like cramps and diarrhoea.
- To establish any residents with idiopathic constipation that may benefit from introduction of flax seed.
- Reduce significant drive of health care cost.
- To complete a cost analysis after the introduction of flax seed for constipation and well-being.
- Save a lot of nurse's time while administering medical products**.**

Outcome / Results:

- Now we have 21 residents out of 45 on flax seeds with regular bowel movements.
- We have markedly reduced the amount of laxatives order from pharmacy.
- Nurse's time is saved to spend on administering laxatives.
- Compliance is better as it is more palatable.
- People have more comfortable feeling taking food supplement rather than medication.

Registered Nurse Prescribing and the Brothers of Charity Services Ireland – Galway Region

Presenters:	Barbara Cunningham Tierney and Aoife O' Donohue
Organisation:	Brothers of Charity Services Ireland- Galway Region

The Brothers of Charity Services Ireland through the Galway region provide a variety of services and supports to approximately 1,000 adults and children with an intellectual disability or autism and their families throughout counties Galway city and county. The range of supports provided by the Brothers of Charity Services Ireland include: residential, respite, day service provision, host families, home sharing and in-home support, in addition to a wide range of multidisciplinary services.

Among our 800 staff members are three Registered Nurse Prescribers (RNPs), working within our Galway Region. The Brothers of Charity Services Ireland Galway Region embraced Nurse led medicinal product prescribing as an enhancement to service delivery due to the large geographical area in which we provide support services to individuals with an intellectual disability or autism. The RNP's work across a variety of catchment areas in Galway including both rural locations namely: Connemara and South Galway, and central locations including Galway city and suburbs.

The collaborative practice agreements established by our RNP's have facilitated greater continuity in care, ensuring person centered care is provided for all individuals supported by the RNP. In conjunction to working closely with General Practitioners within the community, collaborative practice has enabled shared responsibility for the provision of service user assessment and medicinal product prescribing for individuals in receipt of additional mental health support.

Furthermore, each RNP acts as a liaison and a support developing improvements to the care provided through the review and development of medication management plans, identifying complex medication regimen, reducing polypharmacy and improving practice through further education of individual with an intellectual disability that may present with additional challenges including: End of Life care, Dementia, Diabetes, Pain management, Respiratory care and Wound care. Our future plan includes; targeted introduction of additional RNP's throughout the Brothers of Charity Services Ireland.

Nurse prescribing for common childhood presentations to the ED

Presenters:	Orla Callender
Organisation:	Emergency Department, Temple Street Children's University Hospital

Background:
The role of the nurse in providing health care to children is constantly changing and diversifying. Nursing skills can enhance patient care with flexible and safe practice and by including prescribing for nurses is a step towards meeting these aims. This poster is a reflective account of the professional, legal and ethical issues faced by a nurse prescriber by using two case studies to discuss issues in relation to the diagnosis and management of two common childhood presentations to the ED.

Aims/ Objectives:
The decision to prescribe or not prescribe antibiotics is based on clinical evidence that is available to all clinician's. Concerns exist about antibiotic resistance. Nurse's must treat patient's holistically by respecting the patient as an individual, assessing their symptoms, taking an appropriate history and understanding expectations as well as clinical findings.

This reflective account was carried out to assess the standard of RNP prescription of common childhood presentations in the Emergency Department and compliance with guidelines as defined in the relevant policies.

Outcome / Results:
This reflective account confirms that nurse prescription in the Emergency Department is complaint with national and hospital set standards.

Prescribing Practice of Diabetes ANP over 3 years in SVPH

Presenters:	Trish Harkin
Organisation:	St Vincent's Private Hospital

Background:
Nurse prescribing in Diabetes (outpatient and inpatient) commenced in October 2014.

Aims/Objectives:
To analyse my prescribing practice over 3 years and to compare the 3 audits during this period. The audits were completed at three, six and eighteen months.

How you went about the Project:
The nurse prescribing audit tool was used and consists of 23 questions to be completed on a random selection of 10% of prescriptions. Questions include: prescribing rationale, dose accurate and appropriate, evidence of drug interaction, whether the prescription is legible, relevant clinical details were recorded, the PIN of RNP was included and the prescription dated.

Outcomes/Results:
Prescribing practice was found to be safe and compliant. Most prescribing is for inpatients and the majority of items are subcutaneous administration. Compliance in documenting rationale, clinical details and follow up plan improved over the 3 cycles of audit. Nurse prescribing added to the ANP role. Patient morbidity and mortality improves, waiting times decreased, and it supports early access to care, decreased readmission rates and increased patient throughput (SCAPE, 2010).

Medicinal Prescribing and the COPD Patient Journey through the Respiratory Nurse Services

Presenters:	Paula Ryan / Maria Cullinan / Carmel Mc Inerney
Organisation:	University Hospital Limerick Group

Background

Chronic Obstructive Pulmonary Disease (COPD) is a major cause of chronic morbidity and mortality throughout the world. Many people suffer from this disease for years and die prematurely from it or its complications. COPD is the fourth leading cause of death in the world, and further increases in its prevalence and mortality can be predicted in the coming decades.

One strategy to help achieve the objectives of GOLD is to provide health care workers, health care authorities, and the general public with state-of-the-art information about COPD and specific recommendations on the most appropriate management and prevention strategies. Medications are central to the symptomatic management of COPD. They are given either on an as-needed basis for relief of persistent or worsening symptoms, or on a regular basis to prevent or reduce symptoms**.**

Aims/Objectives

The aim of this review is to look at medicinal prescribing practice across the Respiratory Nurse Specialist Group and how care is optimised as per GOLD guidelines 2017 for COPD patients.

Outcome / Results:

An excellent patient centered quality service provided across the respiratory nurse group. This leads to best practice management of COPD patients according to GOLD guidelines which will lead to a reduction in exacerbations, hospital admissions and hospital avoidance.

The Role of the Registered Nurse Prescriber in an Intellectual Disability Service

Presenters:	Avril Keating / Geraldine O 'Donoghue / Geraldine O'Callaghan
Organisation:	Cope Foundation

Background

Cope Foundation provides services to people who have an intellectual disability (ID) and/or autism in sixty four locations throughout Cork City and County. Registered Intellectual Disability Nurses (RNID's) are unique, being the only group of professionals who are educated solely to work with people with an (ID). The way nursing care is delivered is changing, particularly in the ID sector

Aims/Objectives:

To outline the value of being an RNP in an intellectual disability service. Registered Intellectual Disability Nurses (RNID's) are unique, being the only group of professionals who are educated solely to work with people with an intellectual disability (ID). The way nursing care is delivered is changing, particularly in the intellectual disability sector. Nationally, we have an aging population and recent studies have shown that people with ID are living longer with increasing complex health and mental health needs such as dementia.

Nurse prescribing allows us to respond and support people in a timely manner, the benefits for the people we support are countless; the advantage of knowing the persons overall health status and lifestyle, decrease in anxiety for the people we support, commencing prescribed therapy in a timely manner, knowing how to complete an assessment of the illness, knowing how to communicate with the person.

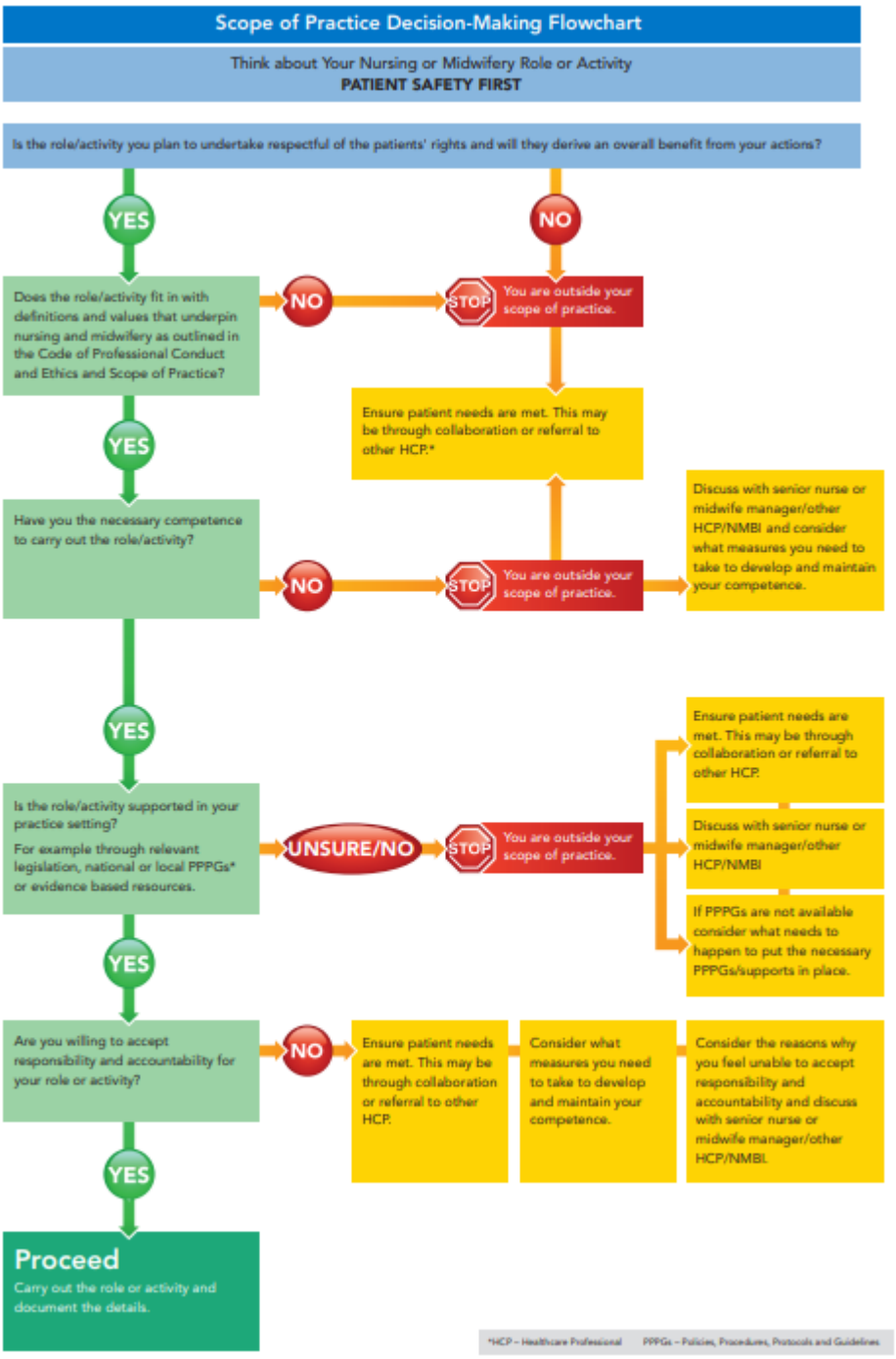
An RNID has many skills and values regarding the people we support, Nurse prescribing allows further expansion of this ever changing and dynamic role.

Person centred approaches are an everyday practice and this is reinforced by nurse prescribing.

How you went about the Quality Improvement measure

Each Individual is consulted about their participation in prescribing by the Nurse Prescriber. The individual's capacity to consent is assessed in as far as is reasonably practicable and with the required supports.

Appendix H Scope of Practice


Scope of Practice Decision-Making Flowchart
Think about Your Nursing or Midwifery Role or Activity
PATIENT SAFETY FIRST
Is the role/activity you plan to undertake respectful of the patients' rights and will they derive an overall benefit from your actions?
YES
NO
Does the role/activity fit in with definitions and values that underpin nursing and midwifery as outlined in the Code of Professional Conduct and Ethics and Scope of Practice?
NO
STOP
You are outside your scope of practice.
Ensure patient needs are met. This may be through collaboration or referral to other HCP.*
YES
Have you the necessary competence to carry out the role/activity?
NO
STOP
You are outside your scope of practice.
Discuss with senior nurse or midwife manager/other HCP/NMBI and consider what measures you need to take to develop and maintain your competence.
YES
Is the role/activity supported in your practice setting?
For example through relevant legislation, national or local PPPGs* or evidence based resources.
UNSURE/NO
STOP
You are outside your scope of practice.
Ensure patient needs are met. This may be through collaboration or referral to other HCP.
Discuss with senior nurse or midwife manager/other HCP/NMBI
If PPPGs are not available consider what needs to happen to put the necessary PPPGs/supports in place.
YES
Are you willing to accept responsibility and accountability for your role or activity?
NO
Ensure patient needs are met. This may be through collaboration or referral to other HCP.
Consider what measures you need to take to develop and maintain your competence.
Consider the reasons why you feel unable to accept responsibility and accountability and discuss with senior nurse or midwife manager/other HCP/NMBI.
YES
Proceed
Carry out the role or activity and document the details.
*HCP – Healthcare Professional
PPPGs – Policies, Procedures, Protocols and Guidelines

Appendix I Clinical Scenarios

Scenario1

Emergency Department Scenarios

Scenario One

A 29 year old lady presents with a dog bite to her left arm. She is 30/40 weeks pregnant and has no known drug allergies. As a nurse prescriber how would you proceed?

Scenario 2

Emergency Scenario Two

An 80 year old gentleman presents with a painful swollen ankle. There is no history of trauma. He takes Nuseals aspirin following a history of transient ischaemic attacks and diuretics for blood pressure management. As a nurse prescriber how would you proceed?

Scenario 3

Emergency Scenario Three

A 22 year old male presents with a crush injury to his right hand when it was caught in a fire door at work. He suffers from asthma and is taking several inhalers daily. X-rays show no fracture. As a nurse prescriber how would you proceed ?

Scenario 4

Emergency Scenario Four

A 30 year old male presents with an avulsion of his right index fingernail with subsequent nail bed laceration. The wound is bleeding profusely and requires the nail removal and closure. His pain levels are high and he is up to date with his tetanus vaccination. As a nurse prescriber how would you proceed ?

Scenario 5

General Practice Scenarios

GP Scenario 1

A 42 yr old male attending the gp surgery regularly for dressings of an ulcer left lower shin. Reason for ulcer (History) - fracture tibia and fibula and crush injury to lower leg 25 yrs ago from RTA motorbike- reconstruction and soft tissue skin grafting carried out. Increased pain and redness and oozing more last couple of days. As a nurse prescriber how would you proceed ?

Scenario 6

GP Scenario 2

24 yr old female fell over step, lost balance and hit face on pavement. Laceration on chin 3 cm straight and grazing to forehead and left cheek. This lady suffers with asthma and takes Ventolin inhaler prn; Becotide Inhaler BD No known drug allergies. As a nurse prescriber how would you proceed?

Scenario 7

GP Scenario 3

38 year old female referred in from work- occupational injury. Was kneeling down stacking shelves and recieved puncture wound to right knee from dirty rusted thumb tack. How would you proceed?

Scenario 8

GP Scenario 4

56 yrs old diabetic patient presents to surgery with painful right big toe and redness. Had been taking paracetamol for few days at home. Now hardly weightbearing and feeling very unwell. This lady has a history of hypertension and her medications are Glucophage 500mg tds, Aspirin 75 mg od, Tritace 2.5mg od

As a nurse prescriber how would you proceed?

Scenario 9

Diabetes Scenario 1

A 72 year old man with type 2 diabetes mellitus and diabetic nephropathy presents with a creatinine level of 150 umol/l HBA1c is 56 mmols (7.2%)
Current oral hypoglycemic agents are
Glicizide MR 120mgs once daily plus Metformin 500 mgs bd
As a nurse prescriber how would you proceed?

Scenario 10

Diabetes Scenario2
A 45 year old female with type 2 diabetes diagnosed 3 years ago who has a BMI of 38 presents with a HBA1 c of 69 mmols (8.5 %.) Current diabetes medication is Metformin 1000 mgs BD She is poorly compliant with healthy lifestyle. As a nurse prescriber how would you proceed?

Scenario 11

Diabetes Scenario 3
A patient with type 1 diabetes mellitus seeks your advice on whether he should get the Flu vaccine and would it upset his glucose control. As a nurse prescriber how would you proceed?

Scenario 12

Diabetes Scenario 4
A 21 year old with type 1 diabetes mellitus contacts you for advice because in the past week he has woken up with glucose levels ranging from 12-18 mmols
His current insulin regime is
Novorapid 8 units with breakfast
Novorapid 9 units with lunch
Novorapid 8 units with dinner
Levimer 12 units BD
As a nurse prescriber how would you proceed?

Scenario 13

Intellectual disability Scenario 1

A 45 year old woman with Down Syndrome and moderate degree of ID is accompanied to the clinic by her carer. Over recent months the carer describes odd behaviours such as the service user puts clean clothes in laundry bin, tea bags in the fridge and on occasion has got dressed

for work on a Sunday morning. Presently service user is prescribed Eltroxin for hypothyroidism.

As a nurse prescriber how would you proceed?

Scenario 14

Intellectual disability Scenario 2
Young man with Down 's syndrome and a moderate degree of ID accompanied to clinic with his parents. He presents with reduced interest in participating in activities, refusal to go to work, lethargic in his movements through every day activities. Service user shows significantly reduced interest in interacting with others and occasionally tearful especially at night. Noticeable increase in obsessional/compulsive behaviours which are now affecting his everyday life.

As a nurse prescriber how would you proceed?

Scenario 15

Intellectual disability Scenario 3
27 year old man Down's syndrome referred to service with mild learning disability. He was diagnosed with schizophrenia. At present the service user appears well with no evidence of psychosis. Present medication: Haloperidol 10mg bd and Seroquel (Quetiapine) XR 400mg daily. Service user reports that he experiences short episodes of pain in both eyes, eyes turn upwards during same and difficulty to focus. On examination patients Blood pressure appears elevated. There is evidence of mild tremor and also evident was increased salivation
As a nurse prescriber how would you proceed?

Scenario 16

Mental Health Scenarios. 1

A 37- year old male presents at clinic and asks about reducing his clozapine medication due to feeling sedated. He is also on kwells for excess salivation which occurs in the early administration of clozapine. As a nurse prescriber how would you proceed?

Scenario 17

Mental Health Scenario 2

A 29 year old female who has been on a SSRI antidepressant for four years is planning to start a family and is looking for advice, she is unwilling to change medication or to stop taking the SSRI. As a nurse prescriber how would you proceed?

Scenario 18

Mental Health Scenario 3
A 24 year old male , recently commenced on clozapine complains of tachycardia and low blood pressure is evident. Anxious to discontinue clozapine, but admits to experiencing hallucinations and paranoia. As a nurse prescriber how would you proceed?

Scenario 19

Midwifery Scenario 1.

A 34-year old primigravida presents in labour with a history of ruptured membranes for twenty hours. The liquor draining is clear and fetal heart rate 140 and regular. She does not wish to have pharmacological pain relief at present .is there any other treatments you should consider in you role as a midwife prescriber?

Scenario 20

Midwifery *Scenario 2.*

A 29-year-old primigravida has just delivered her baby following a long second stage of labour .she found this more difficult as a result of an asthma attack in early labour. She reports a pain score of 6/10 how would you proceed?

Scenario 21

Midwifery *Scenario 3.*

A 39-year-old multiparous woman is admitted in labour. She has a history of epilepsy is on medication and has not had a seizure for three years. She is requesting analgesia, does not wish to have an epidural. How would you proceed?

Scenario 22
Midwifery *Scenario 4.*
Mrs Jones is admitted to the ward following delivery she received triple antibiotic therapy and paracetamol for pyrexia in labour two hours ago.

She is requesting analgesia with a pain score of seven and tells you that tramadol was fantastic for the pain last time. How do you proceed?

Scenario 23

Midwifery Scenario 5.

Mary has just been admitted to the ward and is requesting pain relief following normal delivery. She feels a little nauseated but has not had her meds for peptic ulcer disease today. Her pain score is 8/10 and she requests "something stronger than paracetamol" how do you proceed?

Scenario 24

Older person scenarios one:

A 70 year old lady needs her warfarin (for a-fib) charted. She has been stabilised on 5mgs of warfarin daily, total of 35mgs per week. Her INR comes back today at 2.7 (range 2-3, target INR 2.5). The GP has commenced her on allopurinol today as she has completed her colchicine for an acute episode of gout. As a nurse prescriber how would you proceed ?

Scenario 25

Older person Scenario two:

An 80 year old Male is on Furosemide 20mgs daily, omeprazole 40mg daily, digoxin 0.625mcg daily and asprin 75mgs daily. He has no history of bleeding ulcers, the PPI is for gastric oesophageal reflux disease. Digoxin for a-fib and furosemide for chronic heart failure. You are asked to review the patient as he is feeling generally unwell, nauseated and he is seeing objects with a yellowish tinge. A bit dizzy and confused. As a nurse prescriber how would you proceed?

Scenario 26

Older person Scenario three

An 80 yr old Male requires a syringe driver for palliative care pain management. He has a diagnosis of lung ca. The Gp has commenced him on a regime of morphine 10mg/24hrs, cyclizine 50mg/24hrs and hyoscine butylbromide 20mg/24hrs. The prescription is completed and the ward staff wants you to renew it. Patient is well controlled on same and not requiring medication for breakthrough. As a nurse prescriber how would you proceed?

Scenario 27

Older Person Scenario four.
A 69year old Alzheimer's patient is suffering from regular falls, 4 in the last 3 months. His medication needs to be reviewed.
Zopiclone 7.5mg nocte, Quetiapine 25mg tarde, citalopram 10mg mane, phenytoin 100mg mane, betahistine 16mg daily. Tamsulosin 400mcg mane and donepezil 5mg nocte. As a nurse prescriber how would you proceed

Scenario 28

Oncology Scenarios Scenario 1

You are asked to review a 70yr woman complaining of nausea who is receiving chemotherapy. She is on adjuvant 5Fluorouracil weekly for Colo-rectal cancer and is taking Cyclizine 50mg PO TDS and Prochlorperazine 5mg TDS but still has nausea and finds the tablets make her sleepy. As a nurse prescriber how would you proceed?

Scenario 29

Oncology Scenario 2

A 40yr old female patient rings the Oncology Unit complaining of diarrheoa. She is receiving Docetaxel/Cyclophosphamide regime for adjuvant breast cancer. As a nurse prescriber how would you proceed?

Scenario 30

Oncology Scenario 3

You are asked to review a patient complaining of a sore mouth. He is on PO chemotherapy (Capecitabine) and due his 4th cycle today. He is taking Biotene mouthwash and Mycostatin suspension BD. As a nurse prescriber how would you proceed?

Scenario 31

Oncology Scenario 4

A patient with metastatic breast cancer rings the unit complaining of constipation. She is receiving chemotherapy (Carboplatin / Navelbine) every two weeks. As a nurse prescriber how would you proceed?

Scenario 32

Paediatric Scenarios One

Anna aged 5 yrs(weight 20 kgs) has attended the ED with a cellulitis to her right upper arm post her booster vaccine 2 days ago. No allergies. Generally well and healthy. Systemically very well. As a nurse prescriber how would you proceed?

Scenario 33

Paediatric Scenario Two

Billy aged 14yrs (weight 50 kgs) has sustained a 3 cm minor laceration to his forearm. CMS/ROM is intact. No evidence of vascular or nerve injury distal to the injury but he will require suturing of the wound. As a nurse prescriber how would you proceed?

Scenario 34

Paediatric Scenario 3

Charlie aged 3 yrs (15kgs) has fallen on outstretched arm. Very distressed. Swollen, deformed elbow. CMS/pulses intact distally. Skin integrity intact. As a nurse prescriber how would you proceed?

Scenario 35

Paediatric Scenario 4

A 3 year old boy with neuroblastoma stage 4 is admitted with a pyrexia of 38.5, you note that his FBC result is Hb 90g/l, platelets are 30 and his white cell count is 1.0 with a neutrophil count of 0.2 . As a nurse prescriber how would you proceed?

Scenario 36

Pain Scenario One

A retired lady, 76 years old, has pain under her right arm. She developed the pain two days ago. In the last 24 hours the pain has increased, described as "sharp, like an electric shock, near her right shoulder blade and radiating under her right arm and breast". It hurts

when she raises her right arm. Today, it is so bad, she cannot put on her dress or tolerate the material of the dress near her skin.

As a nurse prescriber how would you proceed?

Scenario 37

Pain Scenario 2

- 61 year-old female
- Post operative day 3 [Radical Nephrectomy-tumour]
- Fibroids past - hysterectomy age 45
- History epilepsy
- Good support family.
- Allergies:
    - Aspirin
    - Codeine
    - Penicillin
    - Losartan
    - Morphine
- Epidural Fentanyl + Bupivacaine [5 mls hour] which is to be stopped now and removed.
- Regular Paracetamol / Bloods Unremarkable/Oral Intake-light diet.
- Minimal discomfort at rest, pain related to movement 5/10 VAS. Transfer to oral analgesic-Suggestions As a nurse prescriber how would you proceed?

Scenario 38

Pain Scenario 3

- Male -70-looks emaciated, 43 kgs
- Admitted 6 days ago-open cholecystectomy
- Colonic Carcinoma x 3 years
- Depression-heavy smoker
- History pancreatitis - alcohol induced
- Type 2 Diabetes
- Severe Abdominal Pain-Pain Team Review ASAP
  As a nurse prescriber how would you proceed?

Scenario 39

Pain Scenario 4

- 75 year old female
- Admitted with exacerbation of rheumatoid arthritis
- Past medical history:
    - Surgical history-hip replacement (L), knee replacement (L).
    - Medical history-osteoporosis, NSTEMI, high cholesterol.
- Lives son, attends day hospital 4 days week.
- Severe pain right knee, during the day for the last 2 days.
- Sleeps well at night.
- Blood work – see slide
- Pain Team Review Please.
  As a nurse prescriber how would you proceed?

Appendix J Interview Questions Guide

Questions for the interview

Interview questions for how well nurse prescriber courses prepare nurses and midwives to prescribe medicine and medicinal products.

Warm up

Introduction – My role in the research

Thanks for participating in the research

Explain the purpose of the research and the importance of their participation in the research. Reiterate informed consent.

Invite any questions that they may have at this point in time.

Questions

1 What was your motivation for doing the course?

2 What parts of the course have helped you prepare to become a nurse prescriber?

3 Has the course changed your practice and if so , how ?

5 How do you think the course has changed your thinking?

4 How has the course influenced or changed their view on prescribing decisions?

Use scenarios now

6 How has the decision-making framework from an Bord Altranais assisted your decision making or is it useful?

7 Do you think the nurse prescribing course prepares you for your role as a nurse prescriber?

8 If there were changes to be made to the prescribing course what do you think they should be/

9 What needs more emphasis?

10 Is there anything that needs to be included that not already part of the course and if so what?

11 Is there anything you would like to add or clarify?

Results of scenarios

Debriefing

Thank the participant for their time and explain that a copy of the transcript will be provided to them to allow them to validate the data. Also to keep the scenarios confidential so as to not affect the study.

Appendix K Research Tool

Interview Details

Participant code number:

Time:

Date:

Venue:

Length of Interview Start : Finish:

Plan of room:

Refreshments:

Participant information

Number of year Qualified:

Number of Years Prescribing:

Gender:

Area of Prescribing:

Grade:

Scenario :

Level of Confidence

Is your answer to the above clinical scenario correct, how would you respond ?

Scale : one to five , one being confident and five not being confident at all

One: ☐ Strongly agree

Two: ☐ Agree

Three ☐ Neither agree nor disagree

Four: ☐ Disagree

Five: ☐ Strongly disagree

What has informed you to come to this decision? Has the prescribing course helped you make your decision and if so how?

_____
_____
_____
_____
_____
_____

In the real world how would you proceed?

A. Proceed as described ☐
B. You might proceed with advice ☐
C. You would not proceed as described ☐
D. It is beyond my Scope of practice ☐

If you were seeking further advice would it be from

a. A Nursing /Midwifery Colleague ☐

b. A reference text ☐

c. An online resource ☐

d. A medical colleague ☐

Clinical Scenarios Number :

Rating of response:

☐ 3 A score of 3 indicated that the nurse had correctly identified all the issues and proposed a correct solution to the problem

☐ 2 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.

☐ 1 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.

☐ 0 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 L Ethical Approval Letter

NATIONAL UNIVERSITY OF IRELAND, MAYNOOTH
MAYNOOTH, CO. KILDARE, IRELAND

NUI MAYNOOTH
Ollscoil na hÉireann Má Nuad

Dr Carol Barrett
Secretary to NUI Maynooth Ethics Committee

4 April 2012

Áine McHugh
Adult and Community Education
NUI Maynooth

RE: *Application for Ethical Approval for a project entitled*:
"An exploration of the effectiveness of the nurse and midwifery prescribing course in Ireland in preparing nurses and midwives for prescribing medicine and medicinal products"

Dear Áine,

The Ethics Committee evaluated the above project and we would like to inform you that ethical approval has been granted.

Kind Regards,

Dr Carol Barrett
Secretary, NUI Maynooth Ethics Committee

cc. Aidan Mulkeen

Appendix M Research Protocol

National University of Ireland Maynooth

Social Research Ethics Sub-Committee

Protocol for Ethical Review of a Research Project Involving Participation of Humans

The purpose of this review process is to draw attention to the ethical dimensions of research and to inspire and assist researchers to design their research in the most ethically appropriate way. It is a university requirement that research projects involving humans carried out by NUIM staff, postdoctoral researchers, and MSc / MLitt / PhD students must undergo this review before data collection begins. It is the conviction of this committee, as members of NUIM's academic community, that collegial review of our protocols for carrying out research in an ethical manner is a constructive process that will lead to better research.

INSTRUCTIONS: Please complete all sections below. Place your cursor inside the box that follows each question and begin to type – the box will expand as you type. While attachments may be appended, it is important that you do not simply refer to them, but that you fully address all points here in the text of this form – do not leave any section blank. Please keep in mind that your protocol could be read by someone who is not a specialist in your field, so it is important to make your explanations as clear and thorough as possible. Please submit this completed form, with all supporting documentation, to the NUIM Research Support Office Ethics Committee Secretariat: research.ethics@nuim.ie

1. Information about the researcher(s)

Name:

Áine McHugh

Qualifications:

Registered General Nurse, Registered Psychiatric Nurse, Registered Nurse Tutor, Bachelors in Nursing Studies (hons) MSc Health Informatics, Diploma in Gerontology

Appointment or position held:

Lecturer,

Department:

UCD School of Nursing, Midwifery and Health Systems

Contact details (must provide NUIM details):

E-mail:	AINE.MCHUGH.2011@NUIM.IE aine.mchugh@ucd.ie	Telephone:	01 7166433 or 087 2205604

(If there are additional researchers, please copy the above fields and paste here as needed)

2. If the researcher is a postgraduate student:

Name of supervisor:

Dr Aidan Mulkeen

Supervisor's appointment or position held:

Head of Department

Supervisor's department:

Education Dept

Supervisor's contact details (must provide NUIM details):

E-mail:	Aidan.Mulkeen@nuim.ie	Telephone:	01 708 3466

NOTE: *If the researcher is a student, a letter from the supervisor must be included outlining how the student is suitably prepared and will have adequate support to carry out the type of research proposed.*

3. Title. Brief title of the research project:

An exploration of the effectiveness of the nurse and midwifery prescribing course in Ireland in preparing nurses and midwives for prescribing medicine and medicinal products.

4. Funding agency (if applicable):

None

5. Other ethical review.

a. Is the research project being, or has it been already, reviewed by any other institutional ethics committee or board?

[ ] Yes [no] No

b. If yes, please list the other committees(s) or board(s) involved, and attach relevant documentation.

Once ethical approval is obtained from NUI Maynooth Ethics committee, the letter of approval will be submitted to other Universities and the Nursing Board to gain access to the prescribing students and qualified nurse and midwifery prescribers

6. Research Objectives. Please summarize briefly the objective(s) of the research, including relevant details such as purpose, research question, hypothesis, etc. (about 150 words).

The purpose of this study is to examine the effectiveness of the nurse/ midwife prescribing course in adequately preparing the nurse/ midwife to prescribe safely and correctly for the benefit of their patients. The research question is how well the Nurse and Midwife Prescribing course in Ireland prepare nurse and midwife prescribers. In examining this question the study will examine the accuracy, confidence and thought process of the prescribers.

The working hypothesis is the course does prepare the nurse/ midwife adequately to prescribe , however, while the nurse/midwife prescriber may be technically correct in the decisions they make , how confident are they in making those decisions, how helpful are the decision tools to assist the inexperienced prescribers to make their decision, how do the experienced prescribers make their decision and what elements of the programme are most useful in building a person's competence and confidence.

If the student participants are incorrect in the scenarios they will be informed at the conclusion of the interview, the course leader will be alerted that a topic may need revision.
The qualified prescribers will be informed at the conclusion of the interview if they have been inaccurate and it will be recommended that they restudy that area of knowledge.
The type of information about errors made by participants will be reported as themes, such as could not identify the correct drug, unfamiliarity with the condition, beyond the prescribers scope of practice for example. Identifying information about the nurse prescriber will not be used except that they are nursing prescribing student undertaking a course in an Irish university or are a qualified nurse/midwife prescriber.
The ethical implications of the nurse prescribers getting something wrong actually places the responsibility for pointing out the error back onto the researcher and the prescriber. As the nurse prescribers and the researcher are all nurses ,we all have a duty of care to protect the public as professional and accountable individuals , consequently if the researcher comes across a nurse prescriber who is inaccurate she has an ethical and professional duty to point out the error/errors and recommend further study otherwise she becomes complicit in potentially poor practice.

On completion of this research project the findings will be disseminated to the relevant stakeholders including the Health Service Executive, the Higher Educational Institutions offering the Programmes and An Bord Altranais.

7. Methodology.

a. Where will the research be carried out?

At the nurse/ midwife's place of work, or on a University campus

b. What is the timeframe of the research project?

Pilot study April 2012, data gathering from end of April 2012 to October 2012

c. Please describe briefly the overall methodological design of the project.

This research will use a structured interview with participants.

Random sampling will be used to select the participants to over sample the smaller group of practice nurses as opposed to the larger Health Service Executive employed nurses/ midwives. Two groups will be selected
Group one unqualified Nurse / Midwives prescribers undertaking the prescribing programme, who will be interviewed towards the end of the programme
Group two qualified Nurse/ Midwife prescribers who are currently prescribing

During the structured interview the participants will be asked to use paper clinical scenarios developed in consultation with a clinical expert and validated by different clinicians to decide on the treatment they would prescribe for the patient.

The interview will be conducted to explore the aspects of the course that helped their thought processes, competence , accuracy and confidence.

d. Depending on the methods/techniques to be used, please elaborate upon the research context(s), potential questions / issues to be explored, tasks/tests/measures, frequency/duration of sessions, process of analysis to be used, as appropriate.

The research will be conducted using case scenarios with the participants and their responses will be recorded by digital audio recording device, participants come to their conclusion regarding their response to the case scenario and their level of confidence with that response. It is anticipated that the interview will take 30-40 minutes. The qualitative data will be analysed using software such as MAX qda

8. Participants.

a. Who will the participants be?

Students undertaking the Professional Diploma in Nurse Prescribing and Registered Nurse/Midwife Prescribers

b. Approximately how many participants do you expect will be involved?

30

c. How will participants become involved in your project? If you have formal recruitment procedures, or criteria for inclusion/exclusion, please outline them here.

- All persons must be able to communicate in English in order to understand the questions.
- All persons must give informed consent to participate in the study, having read the information sheet about the study as this.

- All persons must be undertaking a nurse prescribing programme or have completed a nurse prescribing programme .
- All persons must be on the live register of nurses, midwives, and in the case of the qualified participants, the prescribers register.

d. What will be the nature of their participation? (e.g. one-time/short-term contact, longer term involvement, collaborative involvement, etc.)

All the student prescribers will be interviewed twice once at the beginning of the programme and once prior to completion of the programme.
The qualified nurse prescribers will be interviewed once only. Once the interviews have been transcribed the transcripts will be emailed back to the participants to check for accuracy. On conclusion of the study the participants will be furnished with the findings of the study.

e. If participants will include the researcher's own students or employees, explain how the possibility of conflict of interest will be minimized.

The researcher's own students will be used in the pilot phase only . The pilot will be testing that the clinical scenarios are clear , the questions are clear, the students are not being asked to make any judgements about the course they are studying. The students will be randomly selected using assigning random numbers and asked to consent to be in the pilot study using the sample information leaflet and consent form. Participation will be voluntary

f. Will the participants be remunerated, and if so, in what form?

No

9. Persons Under 18.

a. Will the research be carried out with persons under age 18? [ ]
Yes [no] No

b. If yes, will the sessions be supervised by a guardian or a person responsible for the individual(s)?

[ ] Yes [ ] No

***NOTE**: If the sessions are to be unsupervised, you are required to undergo Garda vetting. Research cannot begin until Garda clearance has been completed. For NUIM researchers, this is facilitated by the NUIM Admissions Office (708-3822, admissions@nuim.ie).*

10. Vulnerable Persons.

a. Will the research be carried out with persons who might be considered vulnerable in any way?

[ ] Yes [no] No

b. If yes, please describe the nature of the vulnerability and discuss special provisions/safeguards to be made for working with these persons.

NOTE: *Depending on the nature of the vulnerability, sessions may need to be supervised or the researcher may need to undergo Garda vetting as stated above under point 4. In such cases, the researcher must also be prepared to demonstrate how s/he is suitably qualified or trained to work with such persons.*

11. Risks.

a. Please describe any possible risks to research participants that your research and the techniques or procedures involved might cause, such as: physical stress or threats to their safety; psychological or emotional distress; risk of repercussions beyond the research context, etc.

If the participants are inaccurate in their assessment of the clinical scenarios a strategy will be employed.

b. If you anticipate the possibility of risks, how will these potential risks be addressed?

If the student participants are incorrect in the scenarios they will be informed at the conclusion of the interview, the course leader will be alerted that a topic may need revision. The qualified prescribers will be informed at the conclusion of the interview if they have been inaccurate and it will be recommended that they re study that area of knowledge.

12. Informed Consent. Please answer the following questions about how you inform participants about your research and then obtain their consent:

NOTE: *Please attach the* ***information sheet(s)****,* ***consent form(s),*** *and/or* ***script(s) for oral explanation*** *to be used in this project. Please see the template at the end of this form showing standard information that must be included on all consent forms.*

a. Do research participants sign a written consent form and receive a copy for their records? If not, do they receive an information sheet that provides what they need to know before deciding to participate?

The participants will be asked to sign a written consent form and receive an information sheet

b. When, where, and by whom is consent obtained?

The informed consent will be obtained at the start of the interview. The student prescribers will be asked to sign two consent forms one at the first interview and a second one the second interview. The qualified prescribers will be interviewed only once and will consequently sign one consent forms

c. If children or vulnerable persons are involved, please explain your procedure for obtaining their assent.

d. For projects in which participants will be involved over the long term, how will you ensure that participants have an ongoing opportunity to negotiate the terms of their consent?

T participants will be able to contact me as I will furnish my contact details to them.

e. What will the participants be told about the study?

They will be told, that the interviews will be anonymous and confidential, the purpose of the research and about the interview format, the use of clinical scenarios and that they can withdraw at any time.

f. What information, if any, will be withheld about the research procedure or the purposes of the investigation? Please explain your justification for withholding this information. If any deception will be involved, please be sure that the technique is explained above under methodology, and explain here why the deception is justified.

There will be no deception

13. Follow-up. As appropriate, please explain what strategies you have in place to debrief or follow up with participants.

The feedback will occur at the end of the interview and when getting the participants to review the transcripts.

14. Confidentiality/Anonymity of Data.

a. How are confidentiality and/or anonymity assured?

Only the researcher will know the identity of the participants, any information which could identify the participants will be removed from the transcripts and the final document.

b. Will you record any personally identifiable information about research participants?

[ ] Yes [no] No

c. If yes, please explain the following: how you will safeguard this information; if identifiers will be removed from the data, at what point will they be removed; if identifiers will not be removed, why they must be retained and who will retain the key to re-identify the data.

d. Will you record any photographs, video or audio in which individuals could be identified?

[Yes] Yes [ ] No

e. If yes, please explain who will have access to this material and how you will safeguard this material.

The researcher and the transcriber will have access to the data, the transcriber will not know the identities of the participants, the audio files will be kept in a locked filling cabinet and the audio files and subsequent text files will be password protected.

f. After data analysis has taken place, will the data be destroyed or retained?

The digital audio files will be deleted, the text files will be retained for five years

g. If the data will be destroyed, please explain how, when, and by whom?

The audio files will be deleted by the researcher

h. If the data will be retained, please explain for how long, for what purpose, and where it will be stored; if there is a key code connecting subjects' data to their identity, when will the link be destroyed?

The anonymised text files will be kept for 5 years in order to use the qualitative comments in conference presentations and in journal articles

***NOTE**: Include this information in the consent form, information sheet, or consent script.*

15. Ethics in subsequent outputs. What are your plans for protecting the safety and integrity of research participants in publications, public presentations, or other outputs resulting from this research? How will subjects' permission for further use of their data be obtained?

Specific clinical settings, geographical areas, Higher Education institutions, and names will be anonymised . In addition subjects permission for further use of their data will be obtained through the consent form to participate in the study.

***NOTE**: If the data is not anonymised, additional consent would have to be obtained before the data could be deposited in an archive such as the Irish Qualitative Data Archive (http://www.iqda.ie/) or the Irish Social Science Data Archive (http://issda.ucd.ie/).*

16. Professional Codes of Ethics. Please append a professional code of ethics governing research in your area to this protocol, and/or provide a link to the website where the code may be found.

Please find attached An Bord Altranais (2007) Guidance for Nurses and Midwives Regarding Ethical Conduct of Nursing and Midwifery Research, An Bord Altranais, Dublin.

Consent Form

Qualified Nurse Prescribers

My name is Áine McHugh I am inviting you to take part in research which will be an exploration of the effectiveness of the nurse and midwifery prescribing course in Ireland in preparing nurses and midwives for prescribing medicine and medicinal products.

The purpose of this study is to examine the effectiveness of the nurse/ midwife prescribing course in adequately preparing the nurse/ midwife to prescribe safely and correctly for the benefit of their patients.

You have been randomly chosen to participate in this research. If you agree to participate in this research, you will be asked to participate in an interview and assess paper based clinical scenarios. At the conclusion of the

interview I will indicate how you have performed on the clinical scenarios. If you have been incorrect I will inform you and recommend revision of the topic.
I may ask to contact you by telephone or mail if I have any follow-up questions after and to thank you for your participation.
There are no known risks to you from taking part in this research, and no foreseeable direct benefits to you. However, it is hoped that the research will benefit nursing prescribing education.

The audio files will be kept in a locked filling cabinet and the digital audio files and subsequent text files will be password protected. The digital audio files will be deleted by the researcher, the pass word protected text files will be retained for five years.

All information obtained from you during the research will be kept confidential
Identifying information about you will not be used except that you are nursing prescribing student undertaking a course in an Irish university or are a qualified nurse/midwife prescriber.

I intend to analyse the data from the interviews , use it in the final thesis, to write journal articles, present the findings at a conference and disseminate the findings back to the Health Service Executive, An Bord Altranais and any Higher Education Institutes involved in providing prescribing courses.

DECLARATION

I have read this consent form and have had time to consider whether to take part in this study. I understand that my participation is voluntary (it is my choice) and that I am free to withdraw from the research at any time without disadvantage. I agree to take part in this research.

I understand that, as part of this research project, I understand that my name will not be identified in any use of these records.

I consent to have the data used in this study and subsequent publications

Name of Participant (in block letters)

_____

Signature_____ **Date**_____

My contact details are AINE.MCHUGH.2011@NUIM.IE 01 7166433 Room B3.19 Health Sciences Centre, University College Dublin, Belfield Dublin 4.

My supervisor's contact details are Dr Aidan Mulkeen Aidan.Mulkeen@nuim.ie or 01 708 3466 Room 214 Education Department, Education House, NUI Maynooth.

If during your participation in this study you feel the information and guidelines that you were given have been neglected or disregarded in any way, or if you are unhappy about the process, please contact the Secretary of the National University of Ireland Maynooth Ethics Committee at research.ethics@nuim.ie or +353 (0)1 708 6019. Please be assured that your concerns will be dealt with in a sensitive manner.

Consent Form

Student Nurse Prescriber

My name is Áine McHugh I am inviting you to take part in research which will be an exploration of the effectiveness of the nurse and midwifery prescribing course in Ireland in preparing nurses and midwives for prescribing medicine and medicinal products.

The purpose of this study is to examine the effectiveness of the nurse/ midwife prescribing course in adequately preparing the nurse/ midwife to prescribe safely and correctly for the benefit of their patients.

You have been randomly chosen to participate in this research,. If you agree to participate in this research, you will be asked to participate in two interview and assess paper based clinical scenarios. The first interview will take place soon after you commence the nurse prescribing course, the second will take place just prior to the completion of the nurse prescribing course. At the conclusion of both interviews I will indicate how you have performed on the clinical scenarios. If you have been incorrect I will inform you and recommend revision of the topic. If you are currently attending a prescribing course and are incorrect on the clinical scenarios, I will be recommending to the course coordinator to revise the topic, but not who may need the revision.

I may ask to contact you by telephone or mail if I have any follow-up questions after and to thank you for your participation.
There are no known risks to you from taking part in this research, and no foreseeable direct benefits to you. However, it is hoped that the research will benefit nursing prescribing education.
The audio files will be kept in a locked filling cabinet and the digital audio files and subsequent text files will be password protected. The digital audio files will be deleted by the researcher, the pass word protected text files will be retained for five years.

DECLARATION

I have read this consent form and have had time to consider whether to take part in this study. I understand that my participation is voluntary (it is my choice) and that I am free to withdraw from the research at any time without disadvantage. I agree to take part in this research.

I understand that, as part of this research project, I understand that my name will not be identified in any use of these records.

I consent to have the data used in this study and subsequent publications

Interview one

Name of Participant (in block letters)

_____

Signature_____**Date**_____

All information obtained from you during the research will be

kept confidential. Identifying information about you will not be used except that you are nursing prescribing student undertaking a course in an Irish university or are a qualified nurse/midwife prescriber.

I intend to analyse the data from the interviews , use it in the final thesis, to write journal articles, present the findings at a conference and disseminate the findings back to the Health Service Executive, An Bord Altranais and any Higher Education Institutes involved in providing prescribing courses.

_____

My contact details are AINE.MCHUGH.2011@NUIM.IE 01 7166433 Room B3.19 Health Sciences Centre, University College Dublin, Belfield Dublin 4.

My supervisor's contact details are Dr Aidan Mulkeen Aidan.Mulkeen@nuim.ie or 01 708 3466 Room 214 Education Department, Education House, NUI Maynooth.

If during your participation in this study you feel the information and guidelines that you were given have been neglected or disregarded in any way, or if you are unhappy about the process, please contact the Secretary of the National University of Ireland Maynooth Ethics Committee at research.ethics@nuim.ie or +353 (0)1 708 6019. Please be assured that your

concerns will be dealt with in a sensitive manner.

Consent Form

Nurse Prescriber Pilot Interview

My name is Áine McHugh I am inviting you to take part in research which will be an exploration of the effectiveness of the nurse and midwifery prescribing course in Ireland in preparing nurses and midwives for prescribing medicine and medicinal products.

The purpose of this study is to examine the effectiveness of the nurse/ midwife prescribing course in adequately preparing the nurse/ midwife to prescribe safely and correctly for the benefit of their patients.

You have been randomly chosen to participate in this research. If you agree to participate in this pilot , you will be asked to participate in one interview and assess paper based clinical scenarios. At the conclusion of the interview I will indicate how you have performed on the clinical scenarios. If you have been incorrect I will inform you and recommend revision of the topic.

I may ask to contact you by telephone or mail if I have any follow-up questions after and to thank you for your participation.
There are no known risks to you from taking part in this research, and no foreseeable direct benefits to you. However, it is hoped that the research will benefit nursing prescribing education.

The audio files will be kept in a locked filling cabinet and the digital audio files and subsequent text files will be password protected. The digital audio files will be deleted by the researcher, the pass word protected text files will be retained for five years.

DECLARATION

I have read this consent form and have had time to consider whether to take part in this study. I understand that my participation is voluntary (it is my choice) and that I am free to withdraw from the research at any time without disadvantage. I agree to take part in this research.

I understand that, as part of this research project, I understand that my name will not be identified in any use of these records.

I consent to have the data used to inform the main study.

Name of Participant (in block letters)

_____

Signature_____Date_____

All information obtained from you during the research will be kept confidential and used only to inform the researcher for the main study.

_____

My contact details are AINE.MCHUGH.2011@NUIM.IE 01 7166433 Room B3.19 Health Sciences Centre, University College Dublin, Belfield Dublin 4.

My supervisor's contact details are Dr Aidan Mulkeen Aidan.Mulkeen@nuim.ie or 01 708 3466 Room 214 Education Department, Education House, NUI Maynooth.

If during your participation in this study you feel the information and guidelines that you were given have been neglected or disregarded in any way, or if you are unhappy about the process, please contact the Secretary of the National University of Ireland Maynooth Ethics Committee at research.ethics@nuim.ie or +353 (0)1 708 6019. Please be assured that your concerns will be dealt with in a sensitive manner.

Appendix N Nursing and Midwifery Board of Ireland Ethical Conduct in Research Professional Guidance

ETHICAL CONDUCT IN RESEARCH

Professional guidance

Bord Altranais agus Cnáimhseachais na hÉireann
Nursing and Midwifery Board of Ireland

This professional guidance was originally published in January 2007 as *Guidance to Nurses and Midwives Regarding Ethical Conduct of Nursing and Midwifery Research* (First Edition).

This document was re-issued in November 2015 for the relaunch of the NMBI website. This involved reviewing the content for updating dated NMBI references and redesigning the document. However, the content reflects what is in the 2007 edition.

About NMBI

The Nursing and Midwifery Board of Ireland (NMBI) is the independent, statutory organisation which regulates the nursing and midwifery professions in Ireland. For more information about our role and functions, visit www.NMBI.ie/What-We-Do

Glossary

A full glossary of all the terms used in this and other NMBI publications is published on our website on www.NMBI.ie/Standards-Guidance/Glossary

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INTRODUCTION

The Research Strategy for Nursing and Midwifery in Ireland (Department of Health and Children, 2003), charged NMBI (formerly An Bord Altranais) with developing a position statement concerning ethical conduct of nursing and midwifery research. Following consultation with a range of nurses and midwives, the Ethics Committee developed this guidance document. Its purpose is to provide nurses and midwives with general guidance on ethical matters relating to research and to ensure the protection of the rights of all those involved in research.

This guidance document is for use by registered nurses and midwives who are:

- In clinical practice and who may be caring for patients and clients who are participants in research
- Involved in research as research assistants, research nurses/midwives or who are collecting data for a research team
- The lead researchers of research projects, including masters or doctoral students undertaking research
- Clinical staff, managers and administrators responsible for patients, clients and staff and who are involved in reading, interpreting and using research as a basis for practice
- Members of ethics committees who are involved in reviewing research proposals
- Educators with responsibility for teaching and supervising research projects.

Nursing and Midwifery Research

It is widely acknowledged that scientific research is central to the development of nursing and midwifery as professional disciplines and to ensuring that they provide the highest quality and most cost-effective services to society. Nursing and midwifery research may be described as systematic scientific inquiry conducted to develop knowledge for the profession, and includes clinical practice, management, education and informatics. The definition of research used in the Research Strategy for Nursing and Midwifery is as follows:

The process of answering questions and/or exploring phenomena using scientific methods; these methods may draw on the whole spectrum of systematic and critical inquiry (p.16).

As practice disciplines, nursing and midwifery are particularly concerned with developing knowledge to guide practice and to improve the health and well-being of those they serve (Polit and Beck 2004). Nursing and midwifery research also encompasses the use of research findings to guide practice and is a significant component of evidence-based practice.

THE CODE OF PROFESSIONAL CONDUCT AND ETHICS FOR REGISTERED NURSES AND REGISTERED MIDWIVES

Professional nurses and midwives are required to develop scientific knowledge which guides their practice; therefore, a commitment to research is essential. The Code of of Professional Conduct and Ethics for Registered Nurses and Registered Midwives (NMBI, 2014) Principle 3 Quality of Practice focuses on the professions' role for research.

"Nurses and midwives use evidence-based knowledge and apply best practice standards in their work.

Nurses and midwives value research. Research is central to the nursing and midwifery professions. Research informs standards of care and ensures that both professions provide the highest quality and most cost-effective services to society.

You should deliver safe and competent practice based on best available evidence and best practice standards." (pages 20-21).

Health care organisations have a responsibility to ensure that policies and procedures are in place to guide those involved in all aspects of research. In addition, nurses and midwives are encouraged to use the findings of research. The Code gives reference to this by stating:

> "You should deliver safe and competent practice based on best available evidence and best practice standards"

Nurses and midwives must be familiar with and understand the importance of Board's most current version of standards and guideline documents and should apply them in any professional settings. These include:

- The Code of Professional Conduct and Ethics for Registered Nurses and Registered Midwives
- Practice Standards for Midwives
- Scope of Nursing and Midwifery Practice Framework
- Recording Clinical Practice, Guidance to Nurses and Midwives

The principles underpinning the scope of nursing and midwifery practice include respecting the dignity and rights of patients, promoting and maintaining patient safety, providing quality care, facilitating patient autonomy, informed choice and evidence-based decision-making. These principles apply equally to research activity. The Scope of Practice framework is also relevant to the nurse's or midwife's role in research. The framework takes cognisance of the overall benefit to the patient, legislation, local national, and international evidence-based clinical practice guidelines guidelines/policies and the concepts of responsibility, accountability and autonomy, and competency.

ETHICAL PRINCIPLES

Good ethical conduct implies adherence to ethical standards. In undertaking research, certain ethical principles are used as a framework to guide the researcher through the research process and its subsequent use. These principles help to ensure the highest possible standards in every aspect of research and must be adhered to by nurses and midwives. The ethical principles have been identified by many authors in the professional literature and include respect for persons/autonomy, beneficence, non-maleficence, justice/fairness, veracity, fidelity and confidentiality (ICN, 1996, Beauchamp and Childress, 2001, Polit and Beck, 2004, Storch et al, 2004).

Respect for Persons/Autonomy

Respect for autonomy considers the individual as an independent person who is able to make choices for him/herself (Rogero-Anaya 1994). Within the research context, the researcher is required to make certain that the principle of autonomy is adhered to for those participating in healthcare research by ensuring:

- The right to self-determination, which means that a person has the right to choose whether or not to participate in a research study
- The right to full disclosure, ensuring that a person has received information outlining the nature of the study, including the likely risks and benefits, allowing them to make an informed choice
- The participant has the right to withdraw at any time with no consequences.

The right to self-determination and the right to full disclosure are major components on which informed consent is based (Burns and Grove, 1999, Polit and Beck, 2004).

For some groups in society, it may not always be possible to assure the principle of respect for autonomy (O'Neill, 1977). Some may have diminished levels of autonomy and need additional protection regarding participation in research studies, because of their inability to give true informed consent.

Beneficence and Non-maleficence

Beneficence means "to do good" and positively help a person, and non-maleficence means "to do no harm". Research should benefit client/patient participants and contribute to their welfare (Treacy and Hyde, 1999) and it should benefit both individual participants and society as a whole (Parahoo 1997). Participants have the right not to be harmed. Researchers have an ethical duty to balance potential benefits against potential risks and to minimise potential risk to the greatest extent possible, thus safeguarding and protecting participants.

Justice

The principle of justice is synonymous with fairness and equity and researchers are obliged to treat participants fairly and equitably before, during and after the research study.

Veracity

Veracity involves the concepts of truth about the research study and the absence of deception. Individuals have the right to be told the truth and not to be deceived about any aspect of the research. All aspects of a research project require explanation by the researcher, who must make every effort to ensure the participants understand the implications throughout the study. The principle of veracity is linked with respect for autonomy (Gillon, 1994).

Fidelity

Fidelity involves the concept of trust (ICN, 1996). Participants place trust in researchers and this necessitates a commitment to protect them. The researcher must ensure that the participants have an understanding of the risks, and thus foster a trusting relationship.

Confidentiality

The researcher is responsible for ensuring confidentiality and privacy of the research participants and the data obtained from them. Personal information obtained by the researcher must not lead to identification of research participants and this information should not be made available to others without their consent. There are exceptional circumstances where information may have to be disclosed without the permission of participants, thus breaching confidentiality. These circumstances include public interest and safety and when the researcher believes that there may be a risk in non-disclosure. The researcher must have clear justification for the disclosure of information and should seek support from the research supervisor, ethics committee and other relevant persons. The decision should be clearly documented.

Personal information obtained through group research needs vigilance from both the researcher and research participants to maintain confidentiality.

Researchers can ensure that confidentiality is maintained by assigning an identification number to each participant, so that identifying information is effectively secured and that identifying information is not entered on a computer system or other potentially accessible database. (Polit and Beck, 2004).

CONSIDERATIONS WHEN UNDERTAKING RESEARCH

Informed Consent

The purpose of informed consent is to protect research participants and allow them to make informed choices. Obtaining written informed consent to participate in research is one of the most important ethical considerations in the research process and it ensures that the principle of "respect for persons" is acknowledged and adhered to. Consent to participate in research should never be presumed. The Nuremberg Code defines informed consent (1947) as follows:

> "The voluntary consent of the human subject is absolutely essential. This means that the person involved should have legal capacity to give consent; should be so situated as to be able to exercise free power of choice, without the intervention of any element of force, fraud, deceit, duress, over-reaching or other ulterior form of constraint or coercion; and should have sufficient knowledge and comprehension of the elements of the subject matter involved as to enable him to make an understanding and enlightened decision." (Boomgaarden 2003 et al, p.108).

The four essential components required for a valid informed consent are:

a. Disclosure of information
b. Comprehension
c. Competency
d. Voluntariness (Beauchamp and Childress, 2001).

a. Disclosure of Information

Participants must be fully informed of all aspects and proceedings of the research project, including the risks, benefits and the right to withdraw from the project at any time. The information provided must be sufficient, and communicated accurately in an understandable way and using appropriate language or mechanisms. With regard to the comprehension of information, the participant should be given time to consider the research so that questions can be asked of the researcher. The opportunity for participants to ask questions about the proposed research on a continuous basis is also required.

Disclosure includes:

- Aims of research
- Methodology to be used
- Anticipated risks and benefits
- Anticipated discomfort or inconvenience
- Participant's right to withdraw from the research at any time without prejudice.

b. Comprehension

The researcher must ensure that every effort has been made to ensure the participant understands the information disclosed.

c. Competence

If a person is to make a decision regarding participation in research, he/she must be competent to understand and be able to come to a decision about what is involved. Certain groups may be excluded from participating in research because they are unable to give a valid consent. Some clients who are cognitively impaired may understand simple explanations and therefore give informed consent. Clients with severe mental health problems may at times be capable of providing informed consent. Nurses and midwives at the earliest possible opportunity must seek the direction of the appropriate/ relevant Ethics Committee.

Children may not be competent or able to give an informed consent and therefore the concept of assent is utilised. Assent takes into consideration the participant's rudimentary understanding of what will result from involvement in the research, the purpose of the research and their ability to decide on participation (Mitchell, 1984; Beidler and Dickey, 2001). This is in addition to the consent from a legally competent person such as a parent.

The Declaration of Helsinki (1964) implies that those who are unable to give an informed consent can participate in research. If there is another mechanism provided to obtain informed consent that research should only be carried out if it is in the best interests of the participants. In Irish law, the consent of non-capacious clients can be obtained only through the mechanisms of wardship and enduring power of attorney.

d. Voluntariness

Consent to participate must be given voluntarily and is only valid if given without intimidation (Watts, 1997), coercion, persuasion, manipulation or inducement. The researcher must ensure the right of each participant to determine his or her voluntary participation in research.

Written informed consent is required for all research. The consent form should provide a written explanation about the research study, including the purpose of the study, study design, sampling procedure and potential benefits and risks and voluntary nature of the study. A consent form is signed and dated by the research participant and theresearcher. Where research involves the use of questionnaires, completion of the questionnaire implies consent is being given. This is appropriate, as it contains all the elements of informed consent.

Elements Of Informed Consent:

- Title of study
- Researcher(s) and credentials identified
- Study population identified
- Purpose of study
- Study procedures and steps for data collection described
- Potential risks described
- Potential benefits described
- Anonymity or confidentiality assured
- Assurance given that participation is voluntary
- Right to refuse to participate or withdraw at any time assured
- Offer made to answer all questions
- Means of obtaining study results provided
- If signed consent, consent form should have dated signatures of participant and researcher (Meehan, 2004).

Research Ethics Committees

It is important that research practices are continually monitored, audited and evaluated. Many healthcare services/institutions and higher education institutions utilise research ethics committees to ensure proper scrutiny of research and clinical trials. These committees have stringent standards, guidelines and policies to which researchers must adhere. Before undertaking a project, the researcher needs to be aware of the ethical considerations in relation to the research project and the particular guidelines, policies and procedures necessary to obtain approval from the healthcare services/institutions or higher education institute.

It is the responsibility of the researcher to obtain ethical approval prior to initiating a research study. When applying to ethics committees for approval, all the ethical issues must be identified clearly in the written proposal and the researcher must demonstrate how these will be addressed in the conduct of the research study. The purpose of a research ethics committee in reviewing a study is to protect the rights, dignity, well- being and safety of participants in a research study, thus ensuring that participants are protected from unethical practices. The committee is also required to ensure that the interests, needs and safety of the researcher undertaking the study are assured, but the dignity, rights and safety of the participants must not be secondary to this.

Questions Which Ethics Committee Will Consider:

- Is the study scientifically sound?
- Is there a clear indication of the type of research proposed?
- What is the rationale for the research?
- What are participant recruitment procedures, including inclusion and exclusion criteria?
- How are the well-being and safety of the participants being safeguarded?
- What facilities are in place to deal with unexpected physical, psychological and emotional consequences resulting from the research process?
- What procedures are in place to obtain informed consent, including consent form?
- Will the research be adequately supervised by an experienced researcher who is sensitive to the ethical issues involved?
- Will the researcher adhere to existing codes, policies and guidelines in relation to confidentiality, data protection and local, national and international legislation? (Tierney, 1995; National Health and Medical Research Council, 2002).

Vulnerability

Vulnerability needs consideration in relation to the research process. Individuals who are the recipients of nursing and midwifery care/intervention may be vulnerable because of patient and client status and require additional protection because of their vulnerability. Likewise children and certain groups of

adults such as unconscious patients, the terminally ill, some elderly people and those with mental health problems may be viewed as vulnerable participants. Potentially vulnerable groups should not be chosen simply because they are readily available. They may lack insight and competence to make an informed decision to participate in a research project. It is vital that the nurse and midwife, irrespective of their role in the research process, protect vulnerable individuals and respect their right to self-determination and autonomy.

Groups With Potentially Vulnerable Persons:

- Patients
- Those who are disabled, physically, intellectually, socially and emotionally
- Those who are hearing or visually impaired
- Persons who reside in institutions and residential settings
- Pregnant women
- The unborn
- Children and adolescents
- Elderly
- Prisoners
- Students
- Those whose first language is not English.

ETHICAL CONDUCT AND THE RESEARCH PROCESS

Care must be taken to ensure that the research design is ethically rigorous. Many steps within the research process need to be considered from an ethical perspective such as sampling, data collection, data analysis, storage and disposal of data. The researcher must ensure that the sampling procedures take cognisance of ethical and research principles and take guidance from a research ethics committee. It is important that the researcher ensures that participants receive adequate knowledge about the data collection methodology and the measurement instrument(s) to be used so that they can make an informed decision and give consent to their participation in the research.

Furthermore, it is imperative that the researcher ensures that all collected information is disclosed and that data analysis is complete and not selective (Noble-Adam, 1999). Data should not be manipulated in any circumstances. Local policies and the research ethics committee will determine the storage and disposal procedures of the research data.

The role of the nurse	Ethical questions
The nurse/midwife as researcher	• What is the responsibility of researcher to the patient? • Is the researcher competent to undertake research?
The nurse/midwife as a research assistant	• Are there conflicting responsibilities because of the role of the nurse/midwife as care provider and the role of the nurse/midwife as research assistant?
The nurse/midwife as a research facilitator	• Is it in the best interests of the patient that research takes place in the clinical area?
The nurse/midwife as a research subject	• Are there conflicting responsibilities because of the role of the nurse/midwife as research subject?
The nurse/midwife as a consumer of research	• Have nurses/midwives a duty to update themselves and implement new knowledge?

(van der Arend, 2003)

USE OF RECORDS IN RESEARCH

When patient/client records are utilised in research, they are subject to the same ethical considerations as any other type of research. The principles of privacy, confidentiality and anonymity must be respected. Competence in research requires that confidentiality be ensured in respect of records.

In addition, the researcher must:

- Adhere to the institutional policy regarding records
- Abide by the Data Protection Acts, 1988 and 2003
- Consider the rights of patients past and present, whose records are to be utilised in research and which may involve seeking their written consent.

CLINICAL TRIALS

Much advancement in health science and therefore the improvement of patient/client care is due to the use of clinical trials. The role of the nurse and midwife in clinical trials may involve the recruitment of participants, implementation of protocols, recording of data, and monitoring and evaluation of the results of the clinical trial. Nurses and midwives are in a key position to ensure that participants are protected at all times. Those involved in clinical trials need to be aware of the potential risks and benefits if patients in their care are to participate in clinical trials. It is important that voluntary informed consent has been obtained and documented before any trial. Those involved in clinical trials must refer to Statutory Instrument S.I. Number 190 of 2004 European Communities (Clinical Trials on Medicinal Products for Human Use) Regulations as amended.

SUMMARY

- All nurse/midwife researchers are required to take cognisance of the principles within the Nuremberg Code (1947), the Helsinki Declaration (1964), human rights legislation, Freedom of Information Act, 2014 and the Data Protection Acts, 1988 and 2003
- It is the responsibility of the researcher is to ensure that no harm, risk, or injury occur to the participants
- At all times, the rights and dignity of the participants must be respected. It is important to ensure that the principles of confidentiality, privacy and equity are assured
- All participants must be fully informed about the research and its implications and, if they are willing to participate, a written informed consent is required
- All participants need to be made aware of their right to withdraw at any time without any repercussion
- Nurses/midwives involved in research activities must adhere to the Code of Professional Conduct and Ethics for Registered Nurses and Registered Midwives (NMBI, 2014)
- Nurses, midwives and students who are research participants must be assured of their rights within the research process.

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Appendix O Participant Information Leaflet

NUI MAYNOOTH
Ollscoil na hÉireann Má Nuad

Participant Information Letter

An exploration of the effectiveness of the nurse and midwifery prescribing course in Ireland in preparing nurses and midwives for prescribing medicine and medicinal product.

Dear Participant,

I am conducting a study into the effectiveness of the nurse and midwife prescribing course in Ireland, in preparing nurses and midwives for prescribing medicine and medicinal product.

This study is scheduled to be completed by September 2013 and involves gathering information from nurse and midwife prescribers about prescribing. It is hoped that the information from this study will inform, nurse and midwife prescribers, An Bord Altranais, the Health Service Executive and the Higher Educational Institutes about the effectiveness of the of the nurse prescribing courses in Ireland and inform any further policy development in this area of nurse and midwife practice.

You have been randomly chosen to participate in this research. If you agree to participate in this research, you will be asked to participate in an interview lasting approximately 40 minutes, involving assessment of paper based clinical scenarios and questions about your process of thinking in making decisions about prescribing. At the conclusion of the interview I will indicate how you have performed on the clinical scenarios. If you have been incorrect I will inform you and recommend revision of the topic. Interviews will be audio recorded.

I may ask to contact you by telephone or mail if I have any follow-up questions after and to thank you for your participation. There are no known risks to you from taking part in this research, and no foreseeable direct benefits to you. However, it is hoped that the research will benefit nursing prescribing education.

NUI Maynooth and those conducting this study subscribe to the ethical conduct of research and to the protection of the interests, comfort, and safety of participants. Participation in this study is voluntary. You may refuse to participate, you may also refuse to answer any questions or withdraw from the study at any time. All personal information about participants will be kept confidential; the password protected digital audio files will be deleted after the analysis is completed, the anonymised password protected text files will be kept for 5 years in order to use the qualitative comments in conference presentations and in journal articles. This research is being conducted under the supervision of Dr Aidan Mulkeen at the Department of Education NUI Maynooth.

If during your participation in this study you feel the information and guidelines that you were given have been neglected or disregarded in any way, or if you are unhappy about the process, please contact the Secretary of the National University of Ireland Maynooth Ethics Committee at research.ethics@nuim.ie or +353 (0)1 708 6019. Please be assured that your concerns will be dealt with in a sensitive manner.

On completion of the study, I will send you a summary of the results of the research. Should you have any questions or need clarification about the study, or wish to participate in the study please do not hesitate to contact me at the details below.

Thank you for your interest in this research,

Kind regards,

Áine McHugh

Email AINE.MCHUGH.2011@nuim.ie Telephone: [redacted]

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Appendix P Scenario Thirteen Results

Clinical Scenario Thirteen

Clinical scenario thirteen was administered to all of the participants as either a core or noncore scenario. A brief analysis of the responses follows, there were only two nurses with an intellectual background in the study, both were correct and almost immediately stated the need to assess for dementia. Most of the specialist grades stated this scenario was outside of their scope of practice and would refer the patient on , a number of them giving a response indicating the assessments which could be completed ,but that they wouldn't have completed the assessments as it was beyond their scope of practice. A number of the ANPs did not even give a response automatically they just said it was beyond their scope of practice. From the non-specialist grades, a number of them did not say the scenarios was beyond their scope of practice, but did provide a solution but stated that the person needed to be referred on to a doctor. Finally a number of the non-specialist grades gave a solution, but indicated to proceed with advice. Overall, the outcomes provided by the participants were, either to refer on or proceed with advice, none of them would proceed independently, which was reassuring.

The types of response in some of the participants was very logical, complete a set of vital signs which would be to take the person's pulse, temperature, blood pressure and respirations. Check the bloods, etc., interestingly when the mental health nurses were asked most of them suggested using the psychiatric nursing assessments to assess the patient. While one of the anticoagulant nurses gave no response and said the scenario was beyond her scope of practice, the other nurse focused on interactions with other drugs, this may due largely to the fact that the drugs this nurse prescribes are affected by any over the counter drugs so her questioning of her own patients

would be to investigate fully what drugs they were taking and how they potentially interact.

Some participants, while the scenario was outside their scope of practice, knew the answer though experience, but even in knowing the answer they acknowledged it was outside their scope of practice and would refer the patient on to a doctor.

The participants were all safe with this scenario, as even if they knew or did not know the answer none of them would proceed independently, they would refer on to a doctor or seek advice from a doctor.

Participant /Grade/ Clinical Area	Response	Reason	Outcome
Q1/ANP/Practice Nurse	Assess, check bloods, check compliance with medications, but refer on to GP	Outside Scope of Practice	Refer on
Q2/CNM2/Intellectual services	Assess , bloods and urine check, history from carer, are there any changes in the staff or residents in the house, but needs referral to check for dementia	Experience Diagnosis of dementia	Refer on
Q3/CNS/Infection Control	Assess, bloods, thyroid function test ,	Outside scope of practice Experience of working with adults but not with clients with ID	Refer on
Q4/SN/Anti coagulant clinic	Refer on to Doctor	Outside Scope of practice	Refer on
Q5/CMM2/ Midwifery	Assess, bloods, check is she taking it refer on	Outside Scope of practice	Refer on
Q6/ANP/Emergency	Assess, history, vital signs, check medication, allergies and refer on	Outside Scope of practice	Refer on

Q7/ ANP/Emergency	Outside Scope of practice	Outside Scope of practice	Refer on
Q8/CNS/PAEDS	Assess, history of routines, thyroid bloods, on account of age dementia	Outside Scope of practice	Refer on
Q9/SN/Mental Health	Assess using mental state examination, contact team, order investigations on thyroid	Medication not on drug list , did not mention outside scope of practice	Refer on
Q10/ANP/Emergency	Outside Scope of practice	Outside Scope of practice	Refer on
Q11/SN/Anticoagulant	How long is patient on medication, are they taking any over the counter medications , which could be interfering with it	Experience, did not mention outside scope of practice	Refer on
Q12/CSN/Tissue Viability	Refer on to GP, check if anything has happened in home life, but likely it is dementia	Diagnosed ?dementia Outside Scope of practice	Refer on
Q13/SN/Mental Health	Confused, hypothyroidism, needs bloods for thyroid level, investigate confusion	Experience	Refer on
Q14/ANP/Older person	Assess, blood , outside scope of practice	Outside Scope of practice	Refer on
Q1/CNM2/Mental Health	Assess, monitor bloods, check thyroid function	Said it was outside her scope in the discussion, but when asked about how they would proceed in the real world opted to proceed with advice	Assess, monitor bloods, check thyroid function to proceed with advice
Q2/SN/Paeds	Full investigation and get back ground on the behaviour, check eltroxin levels	Outside Scope of practice	Refer on

Q3/CNS/Practice Nurse	Get a history of the medication, social history, family history, bloods for thyroid levels, vital signs, ? infection , but also , check for dementia	Diagnosis of ? Dementia Outside Scope of practice	Refer on
Q4/SN/Mental Health	Thyroid function tests, thyroid examination, interview patient to determine any psychological reason for the change in behaviour	Outside Scope of practice	Refer on
Q5/SN/Mental Health	Bloods, fbc, tft,lft, review eltroxin, assessment to include mini mental investigate confusion ? organic cause dementia	Diagnosis of ? Dementia Outside Scope of practice	Refer on
Q6/ CNS/clozapine (Mental Health)	Assess physical and mental state carry out Mental State Examination, get collateral history? Dementia	Diagnosis of ? Dementia Outside Scope of practice	Refer on
Q7/ CNM2/Mental Health	Mini mental state examination, /MRI scan, bloods, ?Organic cause	Diagnosis ? Organic Cause did not see it as outside scope of practice	Refer on
Q8/CNS/Cardiology	Outside scope of practice , take a history but refer on	Outside Scope of practice	Refer on
Q9/ SN/Older person	Review patient overall, vital signs, urinalysis, mental health checks, check thyroid levels, check BNF for side effects, discuss with team and refer on	Outside Scope of practice	Refer on
Q10/SN/Older person	Query the dose of eltroxin and the thyroid blood levels	when asked about how they would proceed in the real world	Query the dose of eltroxin and the thyroid blood levels to

		opted to proceed with advice	proceed with advice
Q11/CNM2/Pre assessment	History, take thyroid function tests, adjusts medication where appropriate	when asked about how they would proceed in the real world opted to proceed with advice	History, take thyroid function tests, adjusts medication where appropriate proceed with advice
Q12/CNM1/Intellectual Disabilities	Check thyroid levels, find out how long they were on the eltroxin therapy, check if the dementia scale has been used need to rule out dementia	Experience Diagnosis of dementia Proceed with advice	Refer on
Q14/ CNM1/Older person	Query the eltroxin is causing the problem	Outside Scope of practice	Refer on
Q15/CNS/Mental Health	Full assessment , could be confused due to hypothyroidism or dementia CT Scan,	Diagnosis of dementia Outside Scope of practice	Refer on