



# National Independent Evaluation of the Nurse and Midwife Prescribing Initiative

UNIVERSITY COLLEGE DUBLIN



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# Executive Summary

## Background to the Evaluation

The development of nurse and midwife prescribing in Ireland was initiated by recommendations in two key reports, the *Commission on Nursing* (Government of Ireland, 1998) and the *Review of Scope of Practice for Nursing and Midwifery: Final Report* (An Bord Altranais, 2000). Following on from the recommendations in these two key reports An Bord Altranais and the National Council for the Professional Development of Nursing and Midwifery undertook a joint project with the aim of exploring the potential of extending prescriptive authority to nurses and midwives. This collaborative project resulted in the publication of *A Review of Nurses and Midwives in the Prescribing and Administration of Medicinal Products* (An Bord Altranais/National Council for the Professional Development of Nursing and Midwifery 2005). This review recommended that prescriptive authority should be extended to nurses and midwives. Following this recommendation the Minister for Health and Children, Mary Harney TD, published the *Irish Medicines Board (Miscellaneous Provisions) Act, 2006* allowing for the introduction of nurse and midwife prescribing. By 2007 these recommendations were signed into law. In effect the Act for the first time in Ireland allowed nurses to prescribe independently. The Minister for Health and Children gave a commitment to conduct a review of the regulations two years following their implementation to ensure they were working as planned. This report outlines the findings from a national independent evaluation of the nurse/midwife prescribing initiative that was undertaken as part of the two year review. A research team from the School of Nursing, Midwifery and Health Systems, the School of Medicine and Medical Science and the School of Biomolecular Science, University College Dublin undertook the evaluation.

## Purpose of the Evaluation

The purpose of the evaluation was to examine the effectiveness in practice of the introduction of independent nurse and midwife prescribing and to establish if the model adopted for implementation had achieved the stated objectives in terms of quality, patient safety, communication and patient/client benefits and satisfaction.

## Aims of the Evaluation

The aims of the evaluation were based on the specific research questions identified by the Steering Group for the Independent External Evaluation of the Nurse and Midwife Prescribing Initiative and included: 1) to evaluate nurse and midwife prescribing from a service perspective; 2) to evaluate the current and potential outcomes of nurse and midwife prescribing in terms of patient/client benefits, safety and satisfaction; 3) to take into account the views of key stakeholders, particularly employers, nurses and midwives, medical and pharmacy professions and the Regulatory bodies (Office of the Nursing Services Director, Health Service Executive 2008a).

## Phases of the Evaluation

Five distinct but interlinked phases of research were carried out. The overall aim of this approach was to enable key stakeholders have a voice in the evaluative process. The five phases were as follows:

1. Evaluation of Educational Preparation of Nurses and Midwives for Prescribing Practice.
2. Audit of Nurse/Midwife Prescribing.
3. Evaluation of Patient Satisfaction with the Prescribing and Consultation Process.
4. Nurses' and Midwives' Perceptions of Outcomes from the Prescribing Initiative including Patient/Client Benefits, Safety and Communication.
5. Evaluation of Health Professionals' Perceptions of Outcomes from the Prescribing Initiative including Patient/Client Benefits, Safety and Communication.

## Key Stakeholders Involved in the Evaluation

Those who have an interest in the nurse/midwife prescribing initiative were identified in the evaluation as stakeholders and were an important part of the evaluation process. Therefore the evaluation took into account the views of key stakeholders, including employers, nurses and midwives (including prescribers and non-prescribers), the medical and pharmacy professions, regulatory bodies and patients and clients

who had contact with nurse/midwife prescribers. For each phase of the evaluation a sample of stakeholders was generated. In total 138 nurses/midwives who had completed the prescribing educational programme, over 300 patients from eighteen health service providers who had received a prescription from a nurse/midwife with prescriptive authority and 456 key stakeholders were surveyed. Key stakeholders included nurse/midwife clinicians, managers and administrators, pharmacists (both hospital and community based), academics and medical doctors as well as key stakeholders in each of the regulatory and policy bodies including An Bord Altranais, National Council for the Professional Development of Nursing and Midwifery, Department of Health and Children, the Health Service Executive and unions representing nurses and midwives. Chairs of hospital drugs and therapeutics committees were also surveyed, as were representatives from the Irish Medicines Board, the Irish Medical Council and the Pharmaceutical Society of Ireland. In addition a total of eighteen nurses and midwives who had completed the prescribing preparation programme were interviewed for the qualitative phase of the study. Furthermore, an audit of nurse/midwife prescribers' prescriptions and consultations was undertaken in eight separate health service providers.

Of the 138 nurse/midwives who completed the educational preparation programme for prescribing practice 102 responded to the education and prescribing practice survey resulting in a response rate of 74%. A total of 335 stakeholders out of a total of 456 contacted completed the stakeholder component of the survey which resulted in a response rate of 71.5%. Of the 310 patients surveyed 140 returned questionnaires, this resulted in a response rate of 45%.

## Data Collection

Data for the evaluation was collected from a number of sources including surveys, audit of prescriptions and patient records and interviews. A number of survey questionnaires were developed or modified specifically for this evaluation and included instruments that measured outcomes associated with the prescribing preparation programme and a questionnaire that measured the quality of the course completed by candidate prescribers. A questionnaire was also developed that measured patients' attitudes towards nurse/midwife prescribing,

their satisfaction with the level of advice and education received on the medication prescribed, their intention to comply with the prescription administered by a nurse/midwife prescriber and their overall satisfaction with the nurse/midwife prescriber consultation process. Survey instruments were developed that measured nurse/midwife prescribers and other stakeholders' evaluation of key areas related to prescribing including regulation and guidance, educational preparation, factors facilitating and inhibiting prescribing opportunities, monitoring processes, patient safety, teamwork and communication, impact of nurse/midwife prescribing on the work of other health professionals, quality of care and overall merit of nurse/midwife prescribing. Furthermore key clinical stakeholders who had day-to-day contact with nurse/midwife prescribers evaluated the impact that the prescribing initiative had on patient care, and the impact that it had on nursing, midwifery and medical teams. A separate survey was administered to nurses and midwives who had completed the prescribing preparation programme but were not yet prescribing. The aim of this phase of the survey was to identify reasons why this cohort had not yet commenced prescribing and to identify their future plans in relation to developing their prescribing practice. The qualitative phase of the evaluation consisted of semi-structured in-depth interviews with nurses and midwives who were currently prescribing and those who had not yet commenced prescribing at the time of the evaluation. In the audit phase of the study an instrument entitled the *Medication Appropriateness Index* evaluated the appropriateness of the prescription administered by the nurse/midwife prescriber for the treatment of a patient in their care. This audit resulted in a review of twenty-five nurse/midwife prescribers' prescriptions and consultations. Data was collected on 208 drug items prescribed to a total of 142 patients.

## Findings

### Key Findings from the Evaluation of the Educational Preparation Programme for Prescribers

Nurse and midwife prescribers who had completed the prescribing preparation programme had extensive clinical experience and the majority were employed at higher nursing grades. Practically all respondents held a third-level qualification with over half educated to master's level. Course participants reported that

## Executive Summary (continued)

they had gained ability in a number of key areas as a consequence of their prescribing preparation programme not least in areas related to accountability, legislation, pharmacology and application of the prescribing process to professional practice. The greatest gains were made by course participants in relation to their overall ability and self-confidence to prescribe, an understanding of pharmacology and pharmacotherapeutics and an understanding of the legal and ethical aspects of prescribing practice. The majority of course participants were satisfied with the quality of teaching on their education programme. The assessment process was also highly rated by candidate prescribers with high levels of satisfaction recorded for the both the theoretical and clinical assessment processes used throughout the preparation programmes. Respondents also reported that the programme had prepared them for prescribing practice, however a number of participants were dissatisfied with the level of preparation they received for their particular area of specialist practice. There was also variability in respondents' perception of the workload throughout the course and it was the only aspect of the prescribing preparation programme that was rated negatively overall. The most positive aspect of the prescribing programme was the high level of satisfaction expressed by course participants at the support they received from their medical practitioner mentor. Course participants generally perceived that the education programmes were well organised however there was some variation in respondents' understanding of the level of work expected of them throughout the course. In conclusion the educational preparation programmes provided students with a broad range of educational experiences in the area of prescribing practice. It is evident that the education delivered through these programmes had a positive impact on student learning and led to substantial change in course participants' ability to prescribe. It is also evident from the overall findings that course participants received a quality educational experience and that students were generally satisfied with the organisation and delivery of the programmes.

### **Key Findings from the Audit of Nurse/Midwife Prescribing**

Twenty-five nurse/midwife prescribers were included in the audit; this represented 81% of registered nurse/midwife prescribers from eight hospitals and 44% of all registered nurse/midwife prescribers in practice at the time of the evaluation. In total 142 patient records,

which contained evidence of Nurse/Midwife prescribing, were audited. Two hundred and eight drug items were prescribed for the 142 patients included in this audit. This component of the study found that, overall, the evidence showed that the majority of nurse/midwife prescribing audited was appropriate and safe. There was some variability in quality of the recording of consultations however there were also examples of excellent practice. Furthermore, the context of the consultation and the rationale for the prescription issued was indicated in the majority of documented consultations reviewed. Prescriptions were, overall, written to a high standard with the name of the drug, dosage and frequency of the medication clearly identified in the majority of prescriptions audited. However there was some variability in the recording of the duration of therapy. The vast majority of medications prescribed were identified as being the correct treatment for the medical condition identified in the consultation and medical records. A small number of drugs prescribed were identified as having the potential to interact with other medications that the patient was taking but overall in the vast majority of prescriptions reviewed there were no potential interactions identified. Furthermore in the vast majority of prescriptions and consultations audited there was no evidence of an adverse reaction to the medication prescribed by the nurse/midwife prescriber.

### **Key Findings from Patients'/Clients' Evaluation of the Nurse/Midwife Prescribing Initiative**

Patients and parents of children who received a prescription from a nurse/midwife with prescriptive authority were highly satisfied with the care they received from nurse/midwife prescribers and the majority were of the opinion that nurses and midwives should be able to prescribe. Patients/parents also reported that they received comprehensive education and advice from the nurse/midwife prescriber on the medication prescribed. Waiting time was also perceived to have been impacted upon with over ninety per cent of patients reporting that it had reduced their waiting time for treatment. Patient's intent to comply with the advice regarding the medication prescribed was high, indicating that patients trusted the education and advice provided by the nurse/midwife prescriber. Overall satisfaction with the consultation process was also high with the majority of patients surveyed of the opinion that the nurse/midwife prescriber was comprehensive in the delivery of their care, listened to their concerns and treated them as a

person. Patients were also satisfied with the time the nurse/midwife prescriber spent with them during the consultation process; however some patients, especially those reporting poorer health, would like to have spent more time with the nurse/midwife. Overall there were high levels of support for the prescribing initiative with the vast majority of patients in favour of nurse/midwife prescribing. Patients were also satisfied with the care and advice provided by prescribers and reported high levels of intent to comply with the prescription administered by a nurse or midwife.

### **Key Findings from Stakeholders' Evaluation of the Nurse/Prescribing Initiative**

There was a high level of support from key stakeholders (nurses, midwives, medical practitioners, pharmacists, regulatory and policy personnel) towards the introduction of the initiative with the majority of respondents of the opinion that nurse/midwife prescribing was a good service for patients, that it had a positive impact on patient care and that it also met the needs of patients. There was also agreement that extending prescriptive authority to nurses and midwives was safe with the majority of stakeholders in agreement that nurses and midwives would prescribe correctly, that they had the knowledge to prescribe and that prescribers had received appropriate education and training for their role. The majority of stakeholders were also of the opinion that nurses and midwives had a role in the prescribing process and there was a need to extend prescribing beyond the remit of the medical profession. Stakeholders were very supportive of the initiative overall and two-thirds of respondents were of the opinion that its introduction had been a success. However, a quarter had no opinion on the success or otherwise of the introduction of the prescribing initiative reflecting the recent introduction of nurse/midwife prescribing in some sites. Stakeholders that worked directly with a nurse/midwife prescriber in their organisation identified the ability of patients to access medication more quickly and efficiently as a key outcome from the prescribing initiative. There was also a perception that it had reduced the number of health professionals a patient had to interact with during their visit or stay in hospital. Clinical stakeholders were also of the opinion that nurse/midwife prescribing impacted positively on a number of patient outcomes such as patient satisfaction and compliance. Although there was variability in opinion on the impact of nurse/midwife prescribing on the frequency with which patients with

long-term illness had to visit their doctor for a prescription and the extent to which it reduced delays in the discharge of patients, a small majority of clinical stakeholders agreed that nurse/midwife prescribing had impacted positively on these outcomes. However, whilst the majority of nurse/midwife prescribers agreed that the prescribing initiative reduced the delay in the discharge of patients, the majority of medical practitioners disagreed. There was consensus amongst clinical stakeholders that the extension of prescriptive authority had freed up doctors' time. Furthermore medical practitioners perceived that supervising a nurse/midwife prescriber was not, overall, a burden on their workload. It was also evident that the majority of clinical stakeholders were of the opinion that nurse and midwife prescribers were supported in their role by other health professionals within the organisation within which they were based.

### **Key Findings from Nurse/Midwife Prescribers' Evaluation of the Prescribing Initiative**

Since commencing prescribing the vast majority of nurses and midwives reported that they were prescribing on a frequent basis with, on average, each prescriber administering approximately nine prescriptions per week. Over half of the prescribers reported that they administered less than five prescriptions per week. A majority of prescribers reported that there were drugs and medications that they would like to prescribe as part of their clinical practice but were unable to do so. The principal reason for this constraint was their inability to prescribe unlicensed medications. Another constraint on prescribing practice, especially for those prescribers working in pain management, was the limits placed on the prescribing of controlled drugs by Schedule 8 of the *Misuse of Drugs (Amendments) Regulations 2007*. In certain sites nurse/midwife prescribers were prohibited from prescribing antibiotics by their local Drugs and Therapeutics Committee.

The majority of prescribers agreed that they could prescribe safely and effectively and that they had received the necessary skills and training to fulfil their role as a prescriber. They were also aware of their scope of practice and the issue of accountability associated with a prescribing role. Although a majority of respondents were confident in their ability to make a diagnosis and to write a prescription a minority expressed some concern regarding these facets of their role. A substantial minority of prescribers also expressed concern at the possibility of litigation associated with their role.

## Executive Summary (continued)

The evaluation found that the extension of prescriptive authority to nurses and midwives has had a positive impact on their clinical role; in particular it had enhanced their professional development, increased their overall job satisfaction and enhanced the care that they can now deliver to patients. Furthermore, nurses and midwives were of the opinion that their ability to prescribe had improved the quality of care they could deliver to patients, ensured better use of their skills and increased their professional autonomy. Nurses and midwives did not perceive that the addition of a prescribing role had impacted on their core nursing and midwifery skills however a majority reported that it had resulted in an increased workload. There was a general consensus among prescribers that the introduction of prescriptive authority for nurses has had a positive impact on a number of aspects of patient care including enabling patients access medications quicker than before, enabling in-patients to commence treatment earlier and increasing patient compliance with the medication prescribed. In comparing prescribers' opinions with that of clinical stakeholders on the benefits of nurse/midwife prescribing it was evident that there was consensus amongst the two groups that it had been a positive addition to the provision of patient care.

Nurses and midwives with prescriptive authority were highly satisfied with the level of support they received for their role at both local and national levels. It was evident that prescribers were overall supported within their organisation to help them develop their role. Support was high from medical and pharmacy colleagues as well as from their nursing and midwifery colleagues. At national level prescribers reported that they were well supported in their role by both the HSE and An Bord Altranais. The level of support nurse and midwife prescribers received from other health professionals and the structures put into place by the HSE and An Bord Altranais was conducive to the overall success of the initiation of the initiative.

The experience of prescribers in relation to continuing professional development was variable. While the majority reported that they had not accessed any form of formal continuing professional development related to prescribing following the completion of their prescribing education programme all prescribers reported that they engaged in some form of informal continuing professional development. The area in which prescribers identified that they required ongoing professional development was pharmacology.

The majority of nurses and midwives who had completed the prescribing preparation programme but were not yet prescribing at the time of the survey intended to do so in the near future. Of those who intended to commence prescribing, agreeing their Collaborative Practice Agreement with their local Drugs and Therapeutics committee was the main barrier to initiating prescribing practice.

### Conclusion

In conclusion the extension of prescriptive authority to nurses and midwives has been a positive development, not only for the impact it has had on the professional development of nurses and midwives but also for the impact that it has had on patient care. From the perspective of nurse/midwife prescribers it has increased their autonomy, increased levels of job satisfaction, ensured better use of their skills and ultimately has allowed them to provide holistic care to patients. For many nurses and midwives this was an aspect of their role that was missing. Patients are highly supportive and accepting of the initiative and it is evident that it reduces waiting times and facilitates them in accessing treatments that previously they would have had to wait for. It is also evident that overall there is support for nurse/midwife prescribing from those surveyed from the nursing, midwifery, medical and pharmacy professions although levels of support in some cases are variable. There are a number of issues that need to be resolved including further communication with the various groups of health professionals, issues associated with the documentation of prescribing consultations, the reduction of the administrative burden on prescribers and the further development of the initiative to ensure that nurses and midwives with prescriptive authority become independent in their prescribing practice. The principal barriers to the further development of prescribing practice for nurses and midwives include issues surrounding the prescribing of unlicensed medications and the limitations placed on the prescribing of controlled drugs. Candidate prescribers agreeing collaborative agreements with their local Drugs and Therapeutics Committees has also been identified as a barrier in some areas to the development of the role. Overall, based on the findings from this evaluation the independent national evaluation recommends that the national rollout of independent nurse/midwife prescribing continue and be further supported and strengthened.



# Recommendations

## 1.1 Conclusive Finding and General Recommendation

This evaluation has found that overall the initiative for independent nurse and midwife prescribing has been safely developed and implemented on a national basis.

### 1.1.1 Recommendation I

The independent national evaluation recommends that the national rollout of independent nurse/midwife prescribing continue and be further supported and strengthened through the implementation of the recommendations outlined below.

## 1.2 Supporting Recommendations

### 1.2.1 Recommendation II – Unlicensed Medications

It is evident from the findings of this independent evaluation that a major barrier for nurse and midwife prescribers is their inability to prescribe unlicensed medications. This is a particular problem for prescribers in the areas of children's nursing and neonatal care, however it also extends to prescribers in other specialities. Therefore it is recommended that:

- Nurses and midwives should be enabled to prescribe unlicensed medications once they come within their scope of practice and nurse/midwife prescribers are cognisant of best practice in the prescribing of unlicensed medications<sup>1</sup>.

1 When reviewing this recommendation the independent evaluation would suggest that the following should be taken into consideration: 1) the unlicensed medication is regularly used to treat patients in the prescriber's area of practice, 2) the unlicensed medication to be prescribed must be agreed in advance with the prescriber's Drugs and Therapeutics Committee, 3) it is acknowledged by the prescriber that an alternative licensed medication would not be more suitable, 4) unlicensed medications that are new or on clinical trail should not normally be prescribed by nurse/midwife prescribers, 5) the patient should be made aware that the drug being prescribed is unlicensed.

- The Department of Health and Children review all relevant medicines regulations to enable nurses and midwives prescribe unlicensed medications once they come within their scope of practice<sup>2</sup>.
- An Bord Altranais be asked to review their Practice Standards in light of any changes arising from implementation of the above recommendations.
- An Bord Altranais be asked to develop guidance for nurses/midwives on the best practice for prescribing unlicensed medications.

### 1.2.2 Recommendation III – Prescribing Medications Outside their Terms of Licence (Off-Label Medications)

It is evident from the findings of this independent evaluation that a barrier for nurse and midwife prescribers is their inability to prescribe medications outside their terms of licence (Off-Label Medications). Therefore it is recommended that:

- Nurses and midwives should be enabled to prescribe off-label medications once they come within their scope of practice and nurse/midwife prescribers are cognisant of best practice in the prescribing of medications outside their terms of licence<sup>3</sup>.
- The Department of Health and Children review all relevant medicines regulations to enable nurses and midwives prescribe off-label medications once they come within their scope of practice.

2 *Medicinal Products (Control of Wholesale Distribution) Regulations 2007 (S.I. no. 538 of 2007)*  
*Medicinal Products (Control of Manufacture) Regulations 2007 (S.I.) no. 539 of 2007)*  
*Medicinal Products (Control of Placing on the Market) Regulations 2007 (S.I. no. 540 of 2007)*  
*Medicinal Products (Licensing and Sales) Regulations 2007 (S.I. no. 540 of 2007)*

3 When reviewing this recommendation the independent evaluation would suggest that the following should be taken into consideration: 1) the off-label medication is regularly used to treat patients in the prescriber's area of practice, 2) the off-label medication to be prescribed must be agreed in advance with the prescriber's Drugs and Therapeutics Committee, 3) it is acknowledged by the prescriber that an alternative medication would not be more suitable, 4) the patient should be made aware that the drug being prescribed is off-label.

## Recommendations (continued)

- An Bord Altranais be asked to review their Practice Standards in light of any changes arising from implementation of the above recommendations
- An Bord Altranais be asked to develop guidance for nurses/midwives on the best practice for the prescribing of off-label medications.

### 1.2.3 Recommendation IV – Prescribing of Controlled Drugs

The prescribing of controlled drugs by nurses and midwives with prescriptive authority is regulated by MDA Schedule 8. This was introduced specifically to identify the drugs and route of administration for which a schedule 2 or 3 medication can be prescribed by an RNP. In its present format Schedule 8 is inhibiting the prescribing practice of nurses/midwives, especially those working in the area of pain management, due to the restrictions on the type of controlled drugs that they are permitted to prescribe. It is therefore recommended that:

- The Department of Health and Children review the relevant medicines products regulations for Schedule 8 with a view to enabling all nurses and midwives prescribe controlled drugs in Part II of Schedule 8 where the drug is normally used in a specific clinical setting and falls within a nurse's/midwife's scope of practice.

### 1.2.4 Recommendation V – Education of Nurse/Midwife Prescribers

The independent evaluation considers that there are three educational pathways for the development of nurse/midwife prescribing: maintenance of stand-alone prescribing programme, integration with post-registration education and consideration of prescribing practice at pre-registration level. Therefore it is recommended that:

- The current stand alone Certificate in Nursing (Nurse & Midwife prescribing) continue, remain at level 8, and that requirements for entry to the programme remain unchanged.
- The relevant modules be integrated into existing and future post-registration nursing and midwifery programmes where prescribing is relevant to clinical practice.

- The provision of prescribing practice within pre-registration education should be debated within the proposed review of undergraduate nursing education being undertaken by the Department of Health and Children.
- Innovative forms of education should be considered to deliver the prescribing preparation programme such as blended learning, online learning and distance learning.
- Higher Education Institutions providing nurse/midwife prescribing education programmes in the future should have access to expertise in pharmacy and medicine.
- Accreditation of prior learning is considered for applicants to the programme.
- Experienced nurse/midwife prescribers should be considered to act as mentors to candidate prescribers.

### 1.2.5 Recommendation VI – Registration of Nurse/Midwife Prescribers

The independent evaluation has found satisfaction with the registration process and therefore recommends that the process remain unchanged. However it does recommend that:

- An Bord Altranais should be requested to consider putting a timeframe on an acceptable period between completion of the course and registration as a nurse prescriber.

### 1.2.6 Recommendation VII – Continuing Professional Development

The independent evaluation has found that there is variability to the extent to which nurse/midwife prescribers access continuing professional development. Therefore it is recommended that:

- All nurse and midwife prescribers should maintain their professional competence in prescribing on an ongoing basis; this recommendation will be informed by proposed legislation related to professional competence in the forthcoming Nurses and Midwives Act.

### 1.2.7 Recommendation VIII – Collaborative Practice Agreement (CPA)

It is evident from the findings of this independent evaluation that the Collaborative Practice Agreement has utility in the early development of the nurse's/midwife's prescribing practice. It is also identified that the CPA over time may add an administrative burden to prescribers and Drugs and Therapeutics Committees. Furthermore, the CPA may be a barrier to the development of independent prescribing by nurses and midwives in the future. Therefore it is recommended that:

- The Collaborative Practice Agreement remains in place as a requirement for registration as it establishes the clinical, management and corporate governance arrangements within each organisation. It also officially records prescriptive authority given by an employer to the nurse/midwife, thus facilitating a clinical indemnity requirement.
  - Once the prescribing initiative has been further developed consideration should be given by An Bord Altranais to phasing out the requirement for the Collaborative Practice Agreement on an ongoing basis.
  - In light of the above recommendation An Bord Altranais give consideration to providing guidance to RNPs on establishing clinical, management and corporate governance arrangements on prescribing practice with their health service employer.
  - Drugs and Therapeutics Committees review their current arrangements for assessing Collaborative Practice Agreements with a view to expediting the process for nurse/midwife prescribers.
  - In light of the above recommendations the health service employer should assure itself that it has established clinical, management and corporate governance arrangements on prescribing practice with each nurse/midwife prescriber.
- The health service provider put into place the appropriate arrangements to ensure that prescribing practices are congruent with HSE national policies<sup>4</sup> for nurse and midwife prescribing including security of prescription pads, recommendations on Photostat copies of patient consultations, and legibility of prescriptions and documentation.
  - The independent evaluation team considers that consideration should be given to the introduction of electronic prescribing system. This system would significantly reduce duplication of documentation while improving clarity and communication between multidisciplinary teams.
  - An Bord Altranais, in conjunction with health service providers, should review Practice Standards with a view to outlining the criteria that should be recorded on patient/service-user case notes and medication administration records following a prescribing consultation by an RNP. These standards, once agreed, should be reflected in prescribing education preparation programmes.
  - Health Service Providers should continue to develop a culture of critical review and multidisciplinary audit to ensure a good practice develops and to promote a culture of mutual respect and learning among health care professionals.

### 1.2.8 Recommendation IX – Prescribing Practice

The independent evaluation found that overall nurse/midwife prescribing was safe and efficient however there are a number of areas in which prescribing practice can be improved. Therefore it is recommended that:

- The *Nurse and Midwife Prescribing Data Collection System* for monitoring nurse and midwife prescribing should continue.

### 1.2.9 Recommendation X – Future Developments

The independent evaluation further recommends that:

- A further evaluation of the nurse/midwife prescribing initiative is undertaken two years following the publication of this report. The rationale being that a critical mass of prescribers will be in place and there will have been a roll out of the initiative in a number of diverse clinical settings.
- The implementation framework developed, designed and rolled out by the HSE provides a model of best practice for the implementation of prescribing for health service providers external to the Executive.

<sup>4</sup> Health Service Executive (2009) *National Policy for Nurse and Midwife Medicinal Product Prescribing in National Hospitals Office*. HSE.



# Chapter 1

## Introduction

### 1.1 Background to the Evaluation

This report outlines the findings from a national independent evaluation of the nurse/midwife prescribing initiative. A research team from the School of Nursing, Midwifery and Health Systems, the School of Medicine and Medical Science and the School of Biomolecular and Biomedical Science, University College Dublin undertook the evaluation. The aims of the evaluation were to: 1) to evaluate nurse and midwife prescribing from a service perspective; 2) to evaluate the current and potential outcomes of nurse and midwife prescribing in terms of patient/client benefits, safety and satisfaction; 3) to take into account the views of key stakeholders, particularly employers, nurses and midwives, medical and pharmacy professions and the Regulatory bodies. The research design was informed by best practice in evaluative research and measured the prescribing initiative from a number of perspectives. The aim of the research design was to include the perspectives of key stakeholders including nurse prescribers, health professionals, key policy makers and patients and clients who received care from a nurse or midwife with prescriptive authority. These key stakeholders formed the sample in the evaluation. The research consisted of five distinct but interlinked phases. Phase 1 evaluated the educational programme completed by nurses and midwives that prepared them for their prescribing role; Phase 2 consisted of an audit of nurse/midwife prescriptions and consultations; Phase 3 evaluated patients' perspectives of nurse/midwife prescribing including their levels of satisfaction with the initiative; Phase 4 evaluated health professionals' perceptions of outcomes that occurred as a consequence of the prescribing initiative including patient/client benefits, safety and interprofessional communication and finally; Phase 5 evaluated the prescribing initiative from the perspective of nurses and midwives who had returned to clinical practice following the completion of the prescribing preparation programme.

### 1.2 Organisation of the Evaluation

The evaluation of the prescribing initiative is outlined in 11 chapters. Chapter 1 outlines the aims of the evaluation. Chapter 2 delineates the developments that led to the implementation of the prescribing initiative including the legislation that regulates nurse and midwife prescribing in Ireland. This chapter also

outlines the role of the Department of Health and Children, the Health Service Executive and An Bord Altranais in developing, implementing and regulating the initiative. Chapter 3 explores the national and international literature on nurse and midwife prescribing and outlines the findings from research studies that measured outcomes that occurred as a consequence of implementing nurse/midwife prescribing in other countries. Literature discussed includes the impact of nurse/midwife prescribing on patient care, the attitudes of the medical and pharmaceutical professions towards nurse and midwife prescribing, the safety of extending prescribing outside its traditional remit and the impact of the prescribing initiative on the nursing and midwifery profession. Chapter 4 discusses the methods used in the five phases of research to evaluate the prescribing initiative. This includes an overview of the instruments used, the methods of data collection, the sampling procedure, the ethical processes and the data analysis techniques employed. Chapter 5 presents the findings from the evaluation of the educational preparation of nurse and midwife prescribers. Within this chapter the extent to which course participants changed in capabilities related to prescribing as a consequence of the programme are evaluated. Chapter 5 also evaluates course participants' perceptions of the quality of their Certificate in Nursing (Nurse/Midwife Prescribing) educational programme. Chapter 6 describes the results of an audit of nurse/midwife prescribers' prescriptions and consultations, the overall aim being to evaluate the safety and clinical appropriateness of prescribing by Registered Nurse Prescribers (RNPs). The method used in this phase of the evaluation entailed a documentary audit of a random sample of patient prescriptions and associated consultations of patient records. Chapter 7 reports on the results of a survey of patients' and service users' level of satisfaction with their experience of being prescribed a medication by a nurse or midwife with prescriptive authority. The survey measured patients' attitudes towards nurse/midwife prescribing, patients' level of satisfaction with the consultation process, patients' perceptions of education received and their intention to comply with the advice and direction provided by the nurse prescriber. Chapter 8 outlines the results of the evaluation of the prescribing initiative from the perspective of key stakeholders such as nurses, midwives, medical practitioners, pharmacists, and

those involved in regulation, guidance and education of nurse/midwife prescribers. Key stakeholders were surveyed on their attitudes towards the introduction of nurse/midwife prescribing, the impact of the initiative on patient care, the perceived safety of the initiative, the need for nurse/midwife prescribing and their level of knowledge of the initiative. In addition, key stakeholders whose work brings them into day-to-day contact with nurse/midwife prescribers were further surveyed on the impact that the initiative was having on patient care and how the initiative impacted on the workload of prescribers and other health professionals. Chapter 9 reports the findings of the evaluation of the prescribing initiative from the perspective of nurses and midwives on their return to clinical practice following the completion of the prescribing preparation programme. This chapter in particular explores the barriers and facilitators to the development of a prescribing role for nurses and midwives. The final findings chapter reports on the qualitative component of the study in which the accounts of 18 participants who had successfully completed the nurse/midwife prescribing educational programme are drawn on to facilitate the overall evaluation of the initiative. This chapter discusses how participants came to undertake the nurse/midwife preparation programme, and how they viewed their educational preparation for their prescribing role. The barriers, supports and processes involved as participants prepared to practise as nurse/midwife prescribers are also considered. Chapter 11 discusses the overall findings from the evaluation and concludes with recommendations for the further development of nurse/midwife prescribing in Ireland.

# Chapter 2

## Development of Nurse/Midwife Prescribing in Ireland

### 2.1 Introduction

The development of nurse and midwife prescribing in Ireland was initiated by recommendations in two key reports, the *Commission on Nursing: A Blueprint for the Future* (Government of Ireland, 1998) and the *Review of Scope of Practice for Nursing and Midwifery: Final Report* (An Bord Altranais, 2000a). The Commission noted that limited administration of non-prescribed drugs should be considered to enable nurses and midwives comprehensively care for patients in their day-to-day practice. This observation was further expanded upon in the *Review of Scope of Practice for Nursing and Midwifery* where it was recommended that there was a need to review legislation relating to the prescription of medical preparations to facilitate prescribing by nurses and midwives. The rationale for this recommendation was that there was a view within the profession that an inability to prescribe was resulting in the delivery of fragmented care and was negatively impacting on the quality of care delivered to patients.

Following on from the recommendations in the Commission on Nursing and the Review of Scope of Practice for Nursing and Midwifery An Bord Altranais and the National Council for the Professional Development of Nursing and Midwifery undertook a joint project with the aim of exploring the potential of extending prescriptive authority to nurses and midwives. This collaborative project resulted in the publication of *A Review of Nurses and Midwives in the Prescribing and Administration of Medicinal Products* (An Bord Altranais/National Council for the Professional Development of Nursing and Midwifery 2005). This review recommended that 'prescriptive authority should be extended to nurses and midwives, subject to regulations under the relevant legislation by the Minister for Health and Children and regulation by An Bord Altranais' (p. 31). Following this recommendation amendments were made by the Minister for Health and Children, Mary Harney TD, to the *Irish Medicines Board (Miscellaneous Provisions) Act, 2006* allowing for the introduction of nurse and midwife prescribing. By 2007 these recommendations were signed into law. In effect the Act for the first time in Ireland allowed nurses to prescribe independently. Following the Minister's signing of the 2006 Act the *Nurses Rules 2007* (under the Nurses Act 2005) (An Bord Altranais 2007a) were published. Within these rules a Registered Nurse

Prescriber division of the Nurses' Register was created. This division contains the 'names of persons admitted to the Register as qualified and competent to practice as Registered Nurse Prescribers' (An Bord Altranais 2007a, p. 6).

### 2.2 Legislation Guiding Nurse/Midwife Prescribing in Ireland

The legislation that regulates nurse/midwife prescribing in Ireland includes:

- *Irish Medicines Board (Miscellaneous Provisions) Act – 2006.*
- *Medicinal Products (Prescription and Control of Supply) (Amendment) Regulations – 2007.*
- *Misuse of Drugs (Amendment) Regulations -2007.*
- *Nurses Rules - 2007.*

#### 2.2.1 Irish Medicines Board (Miscellaneous Provisions) Act – 2006

The *Irish Medicines Board (Miscellaneous Provisions) Act (2006)* provides amendments to the following regulations: *Medicinal Products (Prescription and Control of Supply) Regulations 2003* and the *Misuse of Drugs Regulations 1998* as amended by the *Misuse of Drugs (Amendment) Regulations 1993*. This Act is the primary legislation and together with its associated regulations *Medicinal Products (Prescription and Control of Supply) (Amendment) Regulations 2007*, *Nurses Rules 2007* and *Misuse of Drugs (Amendment) Regulations 2007* provides the legislative framework that guides nurse/midwife prescribing in Ireland.

#### 2.2.2 Medicinal Products (Prescription and Control of Supply) (Amendment) Regulations 2007

*The Medicinal Products (Prescription and Control of Supply) (Amendment) Regulations (Stationery Office 2007: 3)* outline the conditions that guide prescribing by a registered nurse/midwife:

... a registered nurse shall not issue a prescription for a medicinal product referred to in Regulation 5(1) unless the following conditions are satisfied:

- (a) the nurse 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);
- (b) the medicinal product is a medicinal product which would be given in the usual course of the provision of the health service provided in the health service setting in which the nurse is employed; and
- (c) the prescription is in fact issued in the usual course of the provision of that health service.

The *Medicinal Products (Prescription and Control of Supply) (Amendment) Regulations* (2007: 3) also outlined the role of the health service provider in restricting a nurse or midwife from prescribing under certain conditions:

Nothing in this Regulation shall be construed as restricting –

- (a) a health service provider from -
  - (i) prohibiting a registered nurse employed by the provider from issuing, in the course of that employment, a prescription for any medicinal product, or any class of medicinal product, for which the nurse may otherwise issue a prescription pursuant to these Regulations; or
  - (ii) imposing conditions, in addition to those referred to in paragraph (1), which must be satisfied before a registered nurse employed by the provider may issue a prescription pursuant to these Regulations.

Furthermore the *Regulations* provide guidelines on the information that must be provided by the prescriber including the name and ‘the registration number assigned to the nurse in the register of nurses established under section 27 of the Nurses Act 1985’ (2007: 4).

### 2.2.3 Nurses Rules 2007

The *Nurses Rules 2007* (An Bord Altranais 2007a) made under the *Nurses Act 1985* created a separate division of the register for nurse prescribers and allows the prescriber to practice as a Registered Nurse Prescriber (RNP). The *Rules* state that only nurses and midwives practicing as

RNPs are permitted to issue a prescription. The *Rules* also outline that the education programme for nurse/midwife prescribers should be in accordance with a ‘curriculum approved by the Board and carried out in educational institution(s) and hospital(s) approved by the Board for that purpose’ (An Bord Altranais 2007a: 11).

### 2.2.4 Misuse of Drugs (Amendment) Regulations -2007

The prescribing of controlled drugs by nurses and midwives with prescriptive authority is regulated by *Misuse of Drugs (Amendments) Regulations 2007* Schedule 8. This was introduced specifically to identify the drugs and route of administration for which a schedule 2 or 3 drug can be prescribed by a Registered Nurse Prescriber. Schedule 8 is divided into three parts. Part 1 includes morphine sulphate and codeine phosphate for the relief of pain in hospital and includes pain associated with a probable myocardial infarction, pain following trauma or post-operatively for patients with pain. Part 2 includes morphine sulphate, hydromorphone, oxycodone, buprenorphine, fentanyl, methylphenidate and codeine phosphate for use in palliative care. Part 3 includes the use of pethidine in midwifery and morphine sulphate and fentanyl for neonatal care in hospital.

## 2.3 The Role of the Department of Health and Children and the Health Service Executive in Nurse/Midwife Prescribing

A Resource and Implementation Group on Nurse and Midwife Prescribing (RIG), established by the Department of Health and Children on behalf of the Minister of Health and Children, directed the implementation of nurse/midwife prescribing through the provision of advice on drafting of the regulations and co-ordinating the national expansion of the initiative. The formation of this group was initiated by the support from the Minister for Health and Children, Mary Harney TD, toward the introduction of nurse/midwife prescribing in Ireland. Membership of the group included key stakeholders from nursing, midwifery, medicine, pharmacy, education, policy and regulation and was chaired by the Nursing Service



Director of the Health Service Executive.<sup>5</sup> In addition to the Resource and Implementation Group, a Director and four Assistant Directors of Nursing & Midwifery were appointed within the Health Service Executive to oversee the implementation of the initiative. Four key objectives underlined the roll out of the prescribing initiative by the HSE including: 1) the development and implementation of a plan for the roll out of nurse and midwife prescribing; 2) the identification of clinical governance structures with service delivery to support appropriate safe prescribing; 3) the development of a mechanism for the evaluation of nurse and midwife prescribing and; 4) the development of an inclusive communication strategy (Office of the Nursing Services Director, HSE 2008). These objectives were achieved through the implementation by the Office of the Nursing Services Director, HSE and the Resource and Implementation Group of a number of structures which included guidelines for the role of prescribing site co-ordinators<sup>6</sup>, guidelines for the audit of nurse and midwife prescribing practices, and the development of national policies for the introduction of nurse and midwife prescribing in intellectual disability services, primary, community and continuing care and the national hospitals office. Advice and terms of reference were also developed for Drugs and Therapeutics Committees and the development and use of prescription pads for nurse and midwife prescribers. To monitor the prescribing practices and identify the number and type of prescriptions being written by nurse/midwife prescribers the Office of the Nursing Services Director, HSE also put into place an IT based *National Nurse and Midwife Prescribing Data Collection System*. A number of documents to support the initiative were also published by the HSE and these included:

- *Guiding Framework for the Implementation of Nurse and Midwife Prescribing in Ireland* (Office of the Nursing Services Director, Health Service Executive 2008b).
- *Patient and Service User Information Leaflet* (Office

of the Nursing Services Director, Health Service Executive 2008c).

- *Information on Application Guidelines for the Nurse and Midwife Prescribing Initiative* (Office of the Nursing Services Director, Health Service Executive 2008d).
- *Nurse and Midwife Data Collection System* (Office of the Nursing Services Director, Health Service Executive 2008e)
- *An Introduction to the Audit of Nurse and Midwife Prescribing* (Office of the Nursing Services Director, Health Service Executive 2008f)<sup>7</sup>

One of the key implementations put into place by the Office of the Nursing Services Director, HSE was the development of a *Nurse and Midwife Prescribing Data Collection System*<sup>8</sup>. This data system allows prescribers to enter details of each prescription written. This system allows patterns of prescribing practices to be collated and is only accessible by directors of nursing/midwifery/public health, prescribing site coordinators and nurse/midwife prescribers. The system contains the *National Nurse and Midwife Minimum Dataset* through which twelve distinct items are collected. These items include the prescribers' clinical site and clinical area of practice, their An Bord Altranais Registration number and the date and the shift on which the medication was prescribed. The patient's medical record number (MRN), the mode of prescription (medication record, prescription pad or electronic), the medication prescribed, the dose, frequency and route and the clinical indication (prophylaxis, diagnosis and treatment) are also collected on the *Minimum Dataset*. Through this system health service providers associated with the prescribing initiative can also access the *Journal of Nurse Prescribing*.

The Office of the Nursing Services Director, HSE highlights the centrality of audit to the development of the prescribing initiative. In the document *An Introduction to the Audit of Nurse and Midwife Prescribing* (Office of the Nursing Services Director, HSE 2008e: 4) it states:

Audit of nurse and midwife prescribing is considered essential in order to support best practice. It is also

5 A full list of the members of the Resource and Implementation Group can be accessed at: [http://www.hse.ie/eng/About\\_the\\_HSE/Nursing\\_Services/Prescribing\\_of\\_medicinal\\_products/Appendix\\_1.pdf](http://www.hse.ie/eng/About_the_HSE/Nursing_Services/Prescribing_of_medicinal_products/Appendix_1.pdf)

6 Prescribing Site Coordinator: 'The person nominated by the Director of Nursing on behalf of the health service provider to be a prescribing link. The person takes responsibility for the initiative locally, liaises with the education provider and with the Office of the Nursing Services Director' (Office of the Nursing Services Director, Health Service Executive 2008: 74)

7 These reports/documents can be accessed at: [http://www.hse.ie/eng/About\\_the\\_HSE/Nursing\\_Services/Prescribing\\_of\\_medicinal\\_products/](http://www.hse.ie/eng/About_the_HSE/Nursing_Services/Prescribing_of_medicinal_products/).

8 The system is accessed at <https://www.nurseprescribing.ie>. Access to the system is restricted to certain users.

a requirement of the Health Service Provider to ensure there is a mechanism in place to audit the introduction of the initiative.

This document provides guidelines for individuals and audit groups in developing audit structures in relation to planning an audit, monitoring prescription activity, auditing prescription writing and identifying resources that can be used for auditing prescribing practice.

In November 2008 the Office of the Nursing Services Director, HSE published a *Guiding Framework for the Implementation of Nurse and Midwife Prescribing in Ireland*. This document provides comprehensive information on the initiation and ongoing development of the prescribing initiative for health service providers. In addition an electronic communication system has been put in place to facilitate interaction, support and an exchange of ideas between nurse prescribers and prescribing site co-ordinators (Office of the Nursing Services Director, HSE 2008b).

## 2.4 The Role of An Bord Altranais in the Nurse/Midwife Prescribing Initiative

An Bord Altranais undertakes three key functions in relation to nurse/midwife prescribing: professional regulation, setting of education standards and clinical governance/professional guidance.

### 2.4.1 Professional Regulation

Professional regulation of prescribers is outlined under the *Nurses Rules 2007*, which established a division of the Register for nurse prescribers (see section 2.2.3 for a discussion of the *Nurses Rules 2007*).

### 2.4.2 Education

On the granting of prescriptive authority to nurses and midwives through the *Irish Medicines Board (Miscellaneous Provisions) Act (2006)* structures for the educational preparation of potential nurse prescribers were put in place. Educational preparation is currently delivered at two third-level institutes, the Royal College of Surgeons in Ireland and University College Cork. The delivery and structure of the education programmes for nurse and midwife prescribing are guided by the *Requirements and Standards for the Education Programme for Nurses and Midwives with Prescriptive Authority* (An Bord Altranais 2007b). These requirements and standards

outline the minimum entry requirements for candidate nurse/midwife prescribers, the learning outcomes and competencies to be achieved and the theoretical and clinical content of the programme. The educational programme is run over a six-month period twice a year and consists of 28 days clinical instruction with 12 days of supervision in the clinical area. Approximately 25 students are awarded places per institution per intake. To be eligible for the programme applicants must fulfil three core criteria: 1) they must obtain support from their health service provider; 2) satisfy the entry criteria of the Higher Education Institute and; 3) have the support of a medical practitioner who will act as a mentor for the duration of the programme<sup>9</sup>. Specifically the candidate prescriber must have a minimum of 3 years post-registration clinical experience with at least one year in the specific area of practice in which they wish to prescribe. The health service employer of the candidate prescriber must have in place or have access to a Drugs and Therapeutics Committee and a prescribing site co-ordinator. The programme consists of three core modules: 1) Professional Accountability in Nurse and Midwife Prescribing; 2) Drug Action and Therapeutics and; 3) Systemic Assessment and Evaluation in Patient Care. There are five core learning outcomes that are required to be achieved by course participants and these include an understanding of the regulatory framework associated with prescribing, the ability to use evidence-based knowledge in the assessment of a patient in the receipt of a prescription, the application of expert decision-making processes in relation to the prescribing of medicinal products, an understanding of pharmacotherapeutics and a demonstration of the role of the multi-disciplinary team in medication management. In addition to the learning outcomes the *Requirements and Standards* (An Bord Altranais 2007b: 11) outline competencies that prescribing candidates should achieve within five domains: 1) professional and ethical practice; 2) holistic approaches to care; 3) interpersonal relationships; 4) organisation and planning of care and; 5) personal and professional development. The indicative content that underpins the syllabus covers four main areas including professional accountability and responsibility, legal and ethical aspects, pharmacology and pharmacotherapeutics,

<sup>9</sup> Full details of the entry requirements for the programme can be found in the document: *Information on the Application Guidelines for the Nurse and Midwifery Prescribing Initiative*. Accessible at: [http://www.hse.ie/eng/About\\_the\\_HSE/Nursing\\_Services/Prescribing\\_of\\_medicinal\\_products/Application\\_Guidelines.pdf](http://www.hse.ie/eng/About_the_HSE/Nursing_Services/Prescribing_of_medicinal_products/Application_Guidelines.pdf).

principles of the prescribing process and collaboration/referral with other health professionals. On successful completion of the programme participants are awarded a Certificate in Nursing (Nurse/Midwife Prescribing) at level 8 on the National Framework for Qualifications and can apply to An Bord Altranais for entry to the nurse prescribers' register. Candidate prescribers are funded by the HSE.

### 2.4.3 Clinical Governance and Professional Guidance

Published in association with *Requirements and Standards for the Education Programme for Nurses and Midwives with Prescriptive Authority* An Bord Altranais published *The Decision-Making Framework for Nurse/Midwife Prescribing* (An Bord Altranais 2007c). This framework is a graphical tree that outlines the decision-making processes that nurses and midwives should undertake in the context of prescribing. The decision-making processes within the framework include reference to the availability of local policies supporting nurse/midwife prescribing, the development of a collaborative practice agreement, decisions on whether prescribing is within the nurse's/midwife's scope of practice and an assessment of whether there is a need for nurse/midwife prescribing. The decision-making framework also provides a basis for determining the extent to which the nurse/midwife has sufficient information to determine a treatment plan for a patient, the extent to which they can make a decision on the need to instigate pharmacological treatment options and finally the discussion and implementation of the treatment in consultation with the patient and their family.

The clinical supervision of nurses and midwives in relation to prescriptive authority is guided by the *Collaborative Practice Agreement for Nurses and Midwives with Prescriptive Authority* (An Bord Altranais 2007d). This collaborative agreement outlines the parameters of the Registered Nurse Prescriber's prescribing function and the agreement of this function with the nurse's/midwife's employer and states that the RNP 'should have a written collaborative practice agreement (CPA) with a medical practitioner (approved by the health service provider/ employer) in order for the nurse/midwife to prescribe medications within her/his scope of practice at her/his place of employment' (An Bord Altranais 2007d: 1). The function of the CPA is to outline the specific medications that the RNP can prescribe within their scope of practice. The CPA also includes the health care setting in which

the prescribing is to take place, the An Bord Altranais registration details of the nurse/midwife prescriber and the medical specialty of the medical practitioner collaborating in the agreement. It is also envisaged that the CPA provides a template for auditing and evaluating the nurse/midwife prescriber's prescribing practice. A copy of the CPA must be submitted to An Bord Altranais within five days of the nurse/midwife commencing prescribing and it becomes null and void if the prescriber changes place or type of employment.

Aligned to the CPA are the *Practice Standards for Nurses and Midwives with Prescriptive Authority* (An Bord Altranais 2007e). This document provides a framework in which the professional role of the nurse and midwife in relation to prescribing is addressed. There are a number of practice standards; the principles of which are to ensure the competent and safe prescribing of medications. These standards address issues such as prescription writing, prescribing of controlled drugs (drugs that specifically come under the *Misuse of Drugs (Amendments) Regulations 2007*), prescribing of unlicensed medicines, record keeping, communication and continuing professional development.

A number of standards are outlined by An Bord Altranais in relation to the writing of prescriptions. These include legibility, the recording of the prescriber's name as well as their registration Personal Identification Number (PIN), the date of the prescription and the full name and address of the patient. Additional standards are also required for controlled drugs. *Practice Standard 8* in particular identifies the importance of communication and documentation in the writing of a prescription. The areas for documenting the prescribing process include patient case notes and the medication administration record; the rationale being that effective and widespread communication will reduce the possibility of medication errors and enhance interdisciplinary care.

The prescribing of unlicensed medications by nurses or midwives is not permitted and is addressed by *Practice Standard 4* of the *Practice Standards for Nurses and Midwives with Prescriptive Authority* (An Bord Altranais 2007e); whereas medical practitioners are devolved this authority through the *Medicinal Products (Licensing and Sale) Regulations 2007*. The prescribing of unlicensed medications is currently deemed to be outside the scope of practice of nurse and midwife prescribers. An Bord Altranais (2007: 9) states that:

An unlicensed medication has not been approved for licensing or authorisation as per the Irish Medicines Board or the European Medicines Evaluation Agency and therefore there are issues of accountability and responsibility (and possibly indemnity) regarding a nurse/midwife prescribing these medications.

In the UK nurse prescribers also cannot prescribe unlicensed medications 'however, Nurse Independent Prescribers who are also supplementary prescribers can still prescribe them as part of a supplementary prescribing arrangement, if the doctor agrees within a Clinical Management Plan' (accessed at: [http://www.dh.gov.uk/en/Healthcare/Medicinespharmacyandindustry/Prescriptions/TheNon-MedicalPrescribingProgramme/Nurseprescribing/DH\\_4123003](http://www.dh.gov.uk/en/Healthcare/Medicinespharmacyandindustry/Prescriptions/TheNon-MedicalPrescribingProgramme/Nurseprescribing/DH_4123003))

*Practice Standard 6* outlines the separation of responsibilities in the medication management cycle. This in effect states that a nurse or midwife should not administer or dispense a medication that they have prescribed, with the recommendation that another individual should administer the medication to the patient. This standard is qualified by the acknowledgement that there are situations in which it is not feasible to separate responsibilities in the medication management cycle. In these cases it is recommended that these situations be outlined in the nurse/midwife prescriber's CPA.

The importance of continuing professional development (CPD) for nurse/midwife prescribers is highlighted in *Practice Standard 9*. This stipulates that RNPs must take personal responsibility 'to maintain individual competency for his/her prescribing practices' (An Bord Altranais 2007e: 13). There is also a requirement for the prescriber's health service employer to support the nurse/midwife in the development and maintenance of their clinical competence.

Other practice standards for nurses and midwives with prescriptive authority outlined by An Bord Altranais include the prohibition of prescribing for self, family or significant others, the undertaking of repeat prescribing only when the nurse/midwife prescriber is in a position to accurately assess and prescribe for the patient, the exclusion of issuing a prescription verbally or by telephone, e-mail or fax and cautioning against the undue influence of the pharmaceutical sector.

In addition to the legislation and professional guidance directly related to nurse/midwife prescribing published by An Bord Altranais there are a number of documents that indirectly guide the practice of prescribers. These include: *Guidance to Nurses and Midwives on Medication Management* (An Bord Altranais 2007f), *Recording Clinical Practice - Guidance to Nurses and Midwives* (An Bord Altranais 2002), *Guidelines for Midwives – 3rd edition* (An Bord Altranais 2001), *The Code of Professional Conduct for each Nurse and Midwife* (An Bord Altranais 2000b), and *Scope of Nursing and Midwifery Practice Framework* (An Bord Altranais 2000c).

## 2.5 The Role of Health Service Providers in the Prescribing Initiative

The Resource and Implementation Group (see section 2.3) outlined a number of criteria to be met by the health service provider to support nurses and midwives who wished to develop prescriptive authority. These included the ability to audit nurse/midwife prescribing, having access to a Drugs and Therapeutics Committee and the identification of a named medical practitioner who would act as a mentor to the candidate prescriber. The health service provider is also expected to have in place an organisational policy for nurse/midwife prescribing and a risk and quality management system. Systems for agreeing the Collaborative Practice Agreement between the prescriber and the health service provider should also be in place (Health Service Executive *et al.* 2007).

## 2.6 Conclusion

The regulatory, legislative and implementation structures informing the development of nurse/midwife prescribing in Ireland has been a tripartite process between the Department of Health and Children, the Health Service Executive and An Bord Altranais. These structures have led to the development of education programmes for nurse/midwife prescribers and the roll-out of the initiative by health service providers. To date no evaluation of the working in practice of these structures has taken place however there is published evidence from nurse/midwife prescribing initiatives in other countries. A review of the published research on prescribing in these countries is the focus of the next chapter.

# Chapter 3

## Literature Review

### 3.1 Introduction

This section of the evaluation reports on the literature that has been published internationally on nurse/midwife prescribing. The first section explores the implementation of models of nurse/midwife prescribing internationally. This is followed by a discussion of the literature that explores the views of health professionals on extending prescriptive authority to nurses and midwives. The review also discusses publications related to the educational preparation and continuing professional development of prescribers as well as studies that have explored patient outcomes as a result of nurse/midwife prescribing. Literature, while limited, is beginning to emerge in relation to the safety of nurse/midwife prescribing and this is also outlined. Finally research into nurse and midwife prescribers' perceptions of their role is discussed.

### 3.2 International Developments

A number of factors have been identified in the literature that led to the introduction of prescriptive practice for nurses and midwives internationally. These factors included financial reasons (predominantly a money saving measure to provide more effective care to patients) (Rodden 2001), the need to increase patient access to medications (especially for patients with long-term illnesses), the introduction of the philosophy of patient choice, the need to reduce prescribing burden on the medical profession (Bradley *et al.* 2006), the need to reduce patient waiting time for treatment and, an acknowledgement of the developments and advances in nurse/midwife education (Luker *et al.* 1998a, 1998b). Luker *et al.* (1998a: 663) summed up the introduction of nurse prescribing to the UK by highlighting that it was 'merely legitimising existing practices...' and was in effect an acknowledgement of how the role of the nurse and midwife had developed over the last quarter of a century.

The introduction and development of nurse prescribing in Ireland was also influenced by international initiatives in nurse and midwife prescribing. A number of these international developments have also been associated with research and evaluation studies and can be used as a basis on which to design the evaluation for the Irish context. Countries that have introduced and evaluated nurse and midwife prescribing initiatives include the United Kingdom (UK). The United States of America

(US), Sweden, Australia and New Zealand. Internationally the extent to which nurses can prescribe is variable. For example in the US prescribing practices vary from state to state but are generally linked to the role of the advanced practice nurse whereas in Australia prescribing is generally in the domain of nurses working in isolated rural areas (Berry *et al.* 2008).

In the US nurse prescribing is only permitted to be undertaken by those at the level of advanced practice nurse (APN) (nurse practitioners, nurse midwives, nurse anaesthetists, and clinical nurse specialists). The introduction of nurse prescribing in the US however has been fragmented not least due to opposition to the process, arising predominantly from the medical profession, but also due to the diverse registration regulations in different states of the US (Plonczynski *et al.* 2003). Early models of nurse prescribing in the US were predominantly medical dependent where the physician was responsible for delegating prescriptive authority to the advanced practice nurse. Despite these early obstacles the majority of advanced practice nurses in the US now have some form of prescriptive authority. In over half of the US states APN prescriptive authority is generally in the form of a partnership between the APN and a medical practitioner whereas in the remainder nurse practitioners can prescribe independently (Plonczynski *et al.* 2003). The extent to which APNs can prescribe controlled drugs also varies by state and mobility of advanced nurse practitioners with prescriptive authority across states is also tightly regulated. Other issues that have been identified as barriers to nurse prescribing in the US include the restricted formularies imposed by medical insurance companies, a lack of support from health providers and the refusal of pharmacists to recognise prescriptions administered by an (APN) (Plonczynski *et al.* 2003).

Nurse prescribing in the UK was introduced incrementally following recommendations made in a number of advisory reports chaired by Dr. Judith Crown (collectively known as the *Crown Reports*) (Department of Health 1999). Although the *Crown Reports* initially introduced limited prescribing to nurses working in the community subsequent recommendations have extended the prescribing processes to nurses and midwives working in a variety of clinical settings. Nurse prescribing was initially introduced in England on a restricted basis in

1994. In this early phase prescribing was limited to eight demonstration sites and to those nurse/midwives with health visiting or district nursing qualifications (Luker *et al.* 1998a). Prescribing was extended in 1999 but still only applied to nurses/midwives with health visiting or district nursing qualifications. Furthermore, prescribing was generally limited to equipment, dressings and a small number of medications. In 1995 eligible nurse/midwife prescribers could prescribe six prescription only medications (POMs). By 2002 prescribing was further extended to both community and hospital based nurses. The range of medications was also extended to include prescription only medications, general sales list medications and pharmacy medicines. By 2006 qualified nurse prescribers in the UK have been able to prescribe all medicines (excluding a number of controlled drugs) in the British National Formulary once it is deemed to be within their realm of confidence (Department of Health 2005, Latter *et al.* 2007). Approximately 8000 nurses in the UK are now classified as independent prescribers (Avery and James 2007). Independent nurse/midwife prescribers in the UK prescribe from the full range of licensed medicines in the British National Formulary (BNF).

The models of nurse prescribing currently in place in the UK include supplementary prescribing and independent prescribing. Supplementary prescribing was introduced in 2003 and consists of nurses prescribing from a prespecified list of medicines outlined in a patient's clinical management plan (CMP) (Courtenay *et al.* 2007; Berry *et al.* 2008). A doctor and nurse, following a review of a patient's condition by a doctor, develop the prespecified list in the CMP. The literature identifies how supplementary prescribing has utility for patients with long-term medical conditions (Courtenay *et al.* 2007; Berry *et al.* 2008). The medications agreed for supplementary prescribing must be within the nurse's/midwife's scope of practice however supplementary nurse prescribers can prescribe from the full list of medications in the British National Formulary, including unlicensed and controlled drugs, if agreed under the patient's clinical management plan (Courtenay *et al.* 2007).

Independent extended prescribing was introduced in the UK in 2002 and initially allowed nurses and midwives to independently prescribe medicines outlined in the Nurse Prescribers Extended Formulary (NPEF). The range of medications outlined in the NPEF limited the drugs

that nurses could prescribe however, in 2006 this was expanded to allow the full range of licensed medications (excluding controlled drugs) outlined in the British National Formulary to be prescribed (Courtenay *et al.* 2007).

The existence of these two models of prescribing in the UK has been identified as problematic especially in relation to the delivery and organisation of prescribing preparation programmes (Bradley *et al.* 2006). There have been a number of evaluations of nurse/midwife prescribing undertaken in the UK with the general consensus that it has been a positive development. Early evaluations focused on the first group to be afforded prescriptive authority, district nurses and health visitors (Luker *et al.* 1997, 1998a, Otway 2001, Rodden 2001, Luker and McHugh 2002, While and Biggs 2004). Recently UK evaluations have focused on the prescribing practices of independent extended and supplementary nurse prescribers (Latter *et al.* 2005, Courtenay *et al.* 2007).

A number of countries such as Sweden, Australia, Canada and New Zealand introduced nurse prescribing primarily to enable nurses working in remote rural areas meet the medication needs of patients living and working in these regions. Although nurse prescribing in each of these countries was initially limited to certain grades and specialities, recent years have seen an expansion in the number of nurses prescribing an ever-expanding formulary of medicines (Lim *et al.* 2007).

Independent nurse prescribing was introduced into New Zealand in 2005 with the role initially rolled out in the areas of child health and care of the older person. In 2005 only three Nurse Practitioners had a prescribing remit. The prescribing remit of New Zealand nurses has, after intensive lobbying, expanded however qualifying criteria are 'stringent' (Lim *et al.* 2007: 349). These criteria include potential prescribers being at the level of nurse practitioner and the prescribing course being delivered in conjunction with a clinical master's programme.

Although nurse and midwife prescribing is becoming established in many countries its introduction was not without problems; in particular inter- and intra-professional reluctance to support the initiative has been a major barrier to the implementation of prescribing (Jones and Gough 1997, Plonczynski *et al.* 2003). Barriers to the introduction of the initiative generally come from

the medical and pharmaceutical professions (British Medical Association 2005, Bradley *et al.* 2007); for example in the UK there has been strong opposition to the introduction of nurse/midwife prescribing from the British Medical Association (British Medical Association 2005).

As well as opposition and a lack of support from medical colleagues a number of other barriers have been identified which prevent or limit the introduction of nurse prescribing. These include inadequate formulary, an inability to computer generate prescriptions, a lack of confidence amongst prescribers, and absence of a dedicated budget (Courtenay *et al.* 2007).

### 3.3 The Views of Health Professionals on Nurse/Midwife Prescribing

A number of studies have examined the views of health professionals on the merits or otherwise of extending prescriptive authority to nurses and midwives. The views of health professionals have been found to be variable ranging from outright opposition to full support for the initiative. Horton (2002) highlights the opposing positions of the Royal College of Nursing (RCN) and the British Medical Association (BMA) towards the expansion of nurse prescribing. The RCN supports the expansion of the initiative without limitations whereas the BMA calls into question the clinical ability of nurses to prescribe.

Negative views have also been identified from within the pharmacy profession. For example a sample of pharmacists, who were members of the Royal Pharmaceutical Society of Great Britain, considered that they would be in a better position to prescribe than nurses. Opposition to the introduction of nurse/midwife prescribing was also evident in the finding that the majority of pharmacists surveyed did not agree that nurses should be allowed prescribe (Cooper 2000). Views similar to the pharmaceutical profession in the UK have also been identified among the medical profession in Sweden (Wilhelmsson *et al.* 2001; Wilhelmsson and Foldevi 2003). Wilhelmsson *et al.* (2001). In a survey comparing the views of district nurses with GPs on nurse prescribing found that district nurses were significantly more favourable toward the introduction of nurse prescribing than their medical colleagues. This study was followed up by Wilhelmsson and Foldevi (2003) who,

following a series of focus group interviews, found that GPs demonstrated a lack of support for, as well as an awareness of, the nurse prescribers' role and felt that the impact of nurse prescribing upon their work was marginal. District nurses on the other hand were very positive and felt prescribing was part of the nursing process and a natural development of their role.

In contrast to the perception of pharmacists and representative medical bodies there is growing evidence of support for nurse prescribing from doctors in clinical practice (Carr *et al.* 2002; Rodden 2001). Carr *et al.* (2002) surveyed a sample of GPs in the North of England and found that the majority supported nurse prescribing however only under the umbrella of stringently applied protocols. However, as was highlighted earlier in this review, both the medical profession in the UK and the US have opposed the widespread introduction of nurse prescribing.

There is a relative lack of literature on the support received by nurse/midwife prescribers from other health professions when they commence prescribing practice (Latter & Courtenay 2003). Although Latter *et al.* (2005, 2007) reported high levels of supervisory support from medical practitioners for nurse/midwife prescribers there is a question as to whether this commitment can be sustained due to the increase in the numbers of nurses and midwives applying to become prescribers.

### 3.4 Educational Preparation and Continuing Professional Development of Nurse/Midwife Prescribers

The literature identifies a number of core outcomes that nurses and midwives view as essential in preparing them to undertake a prescribing role. These include an in-depth understanding of pharmacology, support and supervision in the clinical area and ongoing professional development (Tyler and Hicks 2000; Humphries and Green 2000; Nolan *et al.* 2001; Otway 2001, 2002; McCann and Baker 2002; Luker and McHugh 2002). Although an understanding of pharmacology, support and supervision in the clinical area and ongoing professional development were identified in the literature as being essential for the development of the prescribing role there is evidence that there have been shortcomings in the provision of these components.

### 3.4.1 Educational Preparation

In relation to educational programmes preparing nurses and midwives to prescribe there is evidence that the depth of pharmacological instruction in particular may not meet the needs of nurses and midwives preparing to prescribe (Sodha *et al.* 2002, Harrison 2003, Latter *et al.* 2007). Latter *et al.* (2007) in a comprehensive evaluation of the educational preparation of nurse prescribers in the UK found that insufficient preparation in pharmacology was cited as the area of least satisfaction amongst course participants. This lack of knowledge of pharmacology is a recurring theme in the literature. Bradley *et al.* (2006) argue that programmes preparing nurses and midwives for prescriptive authority need to comprehensively facilitate students to understand and apply principles of clinical pharmacology to their professional practice. Issues that have been highlighted in the literature that relate to pharmacology include a lack of time to cover the requirements, the need for additional support in pharmacology following completion of the programme and the need to ensure that pharmacology lectures were appropriate to the specialist area of nurses'/midwives' clinical practice (Bradley *et al.* 2006). This lack of educational preparation in the area of pharmacology has been identified as a barrier to prescribers developing their role. Concerns have also been expressed at the level of knowledge that nurses and midwives have of pharmacology and prescribing practice at pre-registration level (Sodha *et al.* 2002). One of the issues regarding the relative lack of knowledge of pharmacology among prospective nurse prescribers in the UK is the extent to which pharmacology is covered at preregistration level in the UK compared to Ireland. Harris *et al.* (2004: 19) following a review of the literature related to preparation for prescribing in the UK concluded that 'pre-registration education may not be an adequate foundation on which to base further medicines related knowledge and practice.' In the UK the number of hours allocated to the teaching of pharmacology has been reduced since the introduction of diploma level education for nurses. However, pharmacology remains a core subject within the Irish undergraduate nursing curriculum (Fealy 2002).

In addition to a deficiency of knowledge in the area of pharmacology, Latter's (2005, 2007) evaluation of prescribing preparation programmes identified that potential prescribers also perceived that they were lacking the knowledge and skills in the area of

clinical examination, physical assessment and legal and ethical issues following the completion of a prescribing preparation programme. However, evidence is beginning to emerge from the UK that identifies that nurse prescribers gain confidence in clinical and pharmacological knowledge when they begin to actively prescribe (Latter *et al.* 2005, 2007). Lower levels of confidence were evident in new prescribers and in those who had a limited prescribing remit.

Apart from the UK international published evaluations of preparation programmes for nurse/midwife prescribing are relatively limited. Those that have been published use a combination of methods to evaluate the effectiveness or otherwise of these educational programmes. Qualitative approaches have been used to analyse the merit of preparation programmes from the perception of graduates (Banning 2004) and lecturers (Bradley *et al.* 2006). Whereas Latter *et al.* (2007: 689) used a fifty-item questionnaire to 'elicit data on nurses' views of key dimensions of independent prescribing education and practice' including the extent to which course participants developed their ability in relation to prescribing. Furthermore the instrument also ascertained the extent to which nurse prescribers were able to access support and continuing education once they were prescribing.

In conclusion while the majority of nurse prescribers internationally complete preparation programmes there is evidence that these programmes do not fully meet the ongoing professional need of nurses/midwives with a prescribing remit with a suggestion that this may lead to a reluctance amongst nurses to prescribe (While and Biggs 2004; Avery and Pringle 2005; Latter *et al.* 2007).

### 3.4.2 Entry to Prescribing Preparation Programmes

In the UK applicants for programmes leading to independent nurse prescribing must have at least three years clinical experience and show evidence of ability to study at degree level. This ability to study at degree level has been identified in the UK literature as an essential component of the selection process for potential nurse/midwife prescribers (Bradley *et al.* 2006). In interviews with eight lecturers involved in teaching on a prescribing preparation programme it was found that ability to cope with the rigours of the programme was essential in the selection process.



Independent nurse prescribers in the UK complete approximately 26 days theory in an institute of higher education along with 12 days of supervised practice with supervision provided by a supervising medical practitioner (Latter *et al.* 2007). As in Ireland, on successful completion of the nurse/midwife prescribing programme nurses and midwives can enter their qualification on the professional register of the Nursing and Midwifery Council.

### 3.4.3 Continuing Professional Development

Although education is highlighted as an essential component for the ongoing development of the prescriber's role there is evidence that continuing professional development (CPD) for nurse prescribers is limited (Humphries and Green 2000; Otway 2001, 2002; Luker and McHugh 2002). Luker and McHugh (2002) highlight that a lack of effective and relevant CPD may negatively impact on the prescribing practices of nurses and midwives. In Latter's evaluation approximately half of nurse prescribers reported that they had not completed any formal CPD since commencing their role. However, the vast majority of prescribers did complete informal CPD e.g. reading journals and informal study. Furthermore there is evidence that there is a mismatch between nurse prescribers' and employers' perceptions on who should be responsible for the provision of CPD. However, there is general agreement that without adequate CPD the further professional development of nurse/midwife prescribers will be limited (Harris *et al.* 2004).

Peer support and clinical supervision have also been found to be lacking for nurse prescribers (Humphries and Green 2000). Although nurse prescribers identified peer support and clinical supervision as central to the development of their role there is evidence to suggest that these supports may have been slow to develop and in some cases were non-existent. Furthermore, as Luker and McHugh (2002) highlight this lack of support may further result in a diminution of the prescribing role. Nurse and midwife prescribers generally do receive high levels of support from medical practitioners (Latter *et al.* 2007) however it is beginning to become obvious that the time that medical practitioners can afford to their supervisory role due to the increase in the numbers of nurse/midwife prescribers needing supervision is becoming problematic (Latter *et al.* 2007).

Continuing professional development requirements for nurse/midwife prescribers in the UK are outlined in Department of Health guidelines. To further support nurse prescribers the UK National Health Service has put into place the National Prescribing Centre (see <http://www.npc.co.uk/>). A number of publications to support the professional development of not only nurse prescribers but also of pharmacists and optometrists have also been developed. The continuing professional development needs highlighted as a priority by nurse prescribers in the UK include updates on prescribing policy, ongoing education in the management of patient conditions, pharmacology and assessment and diagnostic skills (Courtenay *et al.* 2007).

An Bord Altranais (2007e: 13) highlight the importance of ongoing education for nurses and midwives with prescriptive authority beyond the initial prescribing preparation programme: 'there is an obligation for the registered nurse prescriber to commit to, and engage in, continuing professional development relating to assurance of competency for his/her prescribing practices.' Furthermore there is a stipulation that health service providers put in place structures that allow prescribers access continuing professional development at the same time recognising that nurse/midwife prescribers have a responsibility for their own professional development.

### 3.5 Patient/Client Outcomes and Nurse/Midwife Prescribing

A relatively limited number of studies have explored patients' level of satisfaction with nurse/midwife prescribing. The general consensus from the studies that have been published is that patients are highly satisfied with receiving a prescription from a nurse/midwife with prescriptive authority. The literature also identifies high levels of support from patients and clients for nurse/midwife prescribers and confidence in their prescribing practices.

Reasons given by patients for their support for nurse/midwife prescribers include the knowledge the nurse had about an individual patient, their knowledge of medications and products within their specialist area, stability and continuation of care and the increased time available for consultation (Luker *et al.* 1998b; Brooks *et*

*al.* 2001a, 2001b; Berry *et al.* 2006). In particular the level of communication received from a nurse prescriber was highlighted as being a particular benefit by patients. There was a consensus that nurses explained the purpose and use of medication in a language that was accessible to the patient. Information given by health professionals, whether it relates to medications or other aspects of health care, is central to the communication process that healthcare professionals have with patients. Furthermore, as Berry *et al.* (2008) highlight poor communication is responsible for high levels of patient dissatisfaction and poorer health outcomes. Latter *et al.* (2000: 256) summarised the principles that are necessary to effect medication education between the nurse prescriber and patient as empowerment, two-way communication, mutual respect and understanding the individualisation of education and the effecting of ‘concordance and co-operation rather than compliance.’ Although there is a move to involve and inform patients about all aspects of their care including medication management the extent to which patients wish to become involved is questionable, especially in patients who are older or may have a long-term illness (Latter *et al.* 2000). However, as Latter *et al.* highlight this wish amongst patients for minimal participation may be related to their previous experiences and expectations of involvement and planning of their healthcare. Latter *et al.* (2000: 261) argue that ‘interactions [with patients] need to be based on skilled and individualised assessments of need, leading to selective information giving and participation appropriate for each individual patient, with a recognition that assessment of information and participation preferences is likely to be a dynamic process rather than one based on the initial response and condition of the patient.’

### 3.5.1 Patient Attitudes to Nurse/Midwife Prescribing

The attitude of patients to nurse prescribing prior to the extension of prescriptive authority to nurses/midwives in the UK has been reported in the literature. For example Berry *et al.* (2008) undertook a short survey with 54 patients receiving care for rheumatoid arthritis. Although patients were generally positive about the potential for nurses to prescribe medication there was a perception that the nurse should deal only with minor complaints whereas the doctor should prescribe for more serious issues. Latter *et al.* (2005) also found that there were certain conditions with which a patient would prefer

to consult a doctor rather than a nurse. The extent to which nurses are trained to prescribe has also arisen in interviews with patients. For example Brooks *et al.* (2001: 347) reported that some patients interviewed would prefer a doctor to prescribe for ‘complicated or serious things’ and perceived that nurses would require training if they wished to expand their role. Patients may have limited expectation of nurses’ scope and ability to prescribe (Latter *et al.* 2000). Some nurses doubted whether there was a realisation amongst patients that nurses could prescribe, even after they had received a prescription from a nurse. Brooks *et al.* (2001a; 2001b) support this assertion, as some patients recruited to their study on the basis of having received a prescription from a nurse were surprised when interviewed that the nurse had prescribed. Overall patients who have received a prescription from a nurse/midwife have been found to hold positive attitudes towards the initiative and have expressed confidence in nurses’ and midwives’ ability to prescribe (Luker *et al.* 1998). Surveys of the general public have also demonstrated support for the introduction of nurse prescribing. For example, Berry *et al.* (2006) undertook a small-scale survey of 74 volunteers from the general population with the majority in favour of nurses having a prescribing remit.

### 3.5.2 Patient Satisfaction with Nurse/Midwife Prescribing

Published research on the evaluation of nurse prescribing from the patient’s perspective is limited. However, evidence that does exist identifies that patients are generally satisfied with their experience of nurse/midwife prescribing (Luker *et al.* 1998; Brooks *et al.* 2001a, 2001b; Luker and McHugh 2002; Harrison 2003). The majority of published studies explore patient satisfaction with the whole consultation process rather than just emphasising the prescribing remit of nurse practitioners that have a prescribing role (Kinnersley *et al.* 2000; Venning *et al.* 2000; Shum *et al.* 2000; Pritchard and Kendrick 2001). Generally patients report high levels of satisfaction with the nurse-patient consultative process. However, there is some evidence that patients were not aware that it was a nurse who administered the prescription (Luker *et al.* 1998).

Patient satisfaction with nurse/midwife prescribing has been measured in a number of ways including qualitative semi-structured interviews and quantitative surveys

(Luker *et al.* 1998). Qualitative interviews have explored patients' perceptions of nurse prescribing and advantages and disadvantages as they pertained to the patient. Luker *et al.* (1998) described how patients consulted nurses who prescribed in relation to accessibility and a relaxed consultation style. Furthermore, patients reported that they were more likely to consult a nurse if they perceived that their complaint was trivial or mundane.

### 3.5.3 Quality of Care

The impact of nurse/midwife prescribing on the quality of patient care evaluated from the perspective of nurse prescribers has identified that nurse prescribing enhances the overall quality of patient care. Luker and McHugh (2002) elicited community nurses' views on how prescribing affected their practice and found that the majority of nurses perceived that nurse prescribing benefited patients through the provision of comprehensive and improved quality care. Venning *et al.* (2000) found that nurse practitioners spend longer in consultation with patients (mean 11.57 minutes) than do general practitioners (mean 7.58 minutes). Furthermore, nurse prescribing was also perceived as enabling treatment to be initiated at an earlier point in time. The timely ability to obtain a prescription was also identified by Brooks *et al.* (2001a; 2001b). Patients in Brook's study highlighted the quality of the consultation process along with the provision of information and continuity of care as the most beneficial outcomes of receiving a prescription from a nurse.

The finding that there is no difference in the prescribing practice between nurse practitioners and general practitioners has been identified in a number of randomised controlled trials (Kinnersley 2000; Shum *et al.* 2000; Venning *et al.* 2000). Venning *et al.* (2000) compared the cost-effectiveness of general practitioners and nurse practitioners working in primary care in 20 general practices in England and Wales. Approximately 1330 patients were involved in the study. Patients were randomised to see either a general practitioner or a nurse practitioner. Venning found that there was no significant difference in the number of prescriptions administered by nurse practitioners when compared to general practitioners. Furthermore there was no difference in the number of prescriptions administered for antibiotics when both groups were compared. Similarly Shum *et al.* (2000) in a multicentre, randomised controlled trial with

1,815 patients assessed the acceptability and safety of a minor illness service led by practice nurses in comparison to routine care offered by general practitioners. Again, as in Venning's study, there was no significant difference in prescribing practices between nurse practitioners and general practitioners furthermore a significantly higher proportion of patients reported that they had been told the cause of their illness, how to relieve their symptoms, and what to do if the problem persisted by a nurse practitioner than a general practitioner.

### 3.6 Prescribing Safety

The prescribing of medicines is the most common health care intervention in the developed world and carries with it the greatest potential to produce health benefits or to cause harm (Avery 1998). The true extent of inappropriate or unsafe prescribing is unknown but a UK study estimated that over a quarter a million patients are admitted to hospital due to drug related events at a cost of €680m a year (Hitchen 2006). To counteract this phenomena there is increasing emphasis on appropriate and quality prescribing, defined by the World Health Organisation (WHO) 'as each patient receiving medication appropriate for his/her clinical needs, in doses meeting the related requirements, for an adequate period of time and at the lowest cost to them and the community' (Hoven *et al.* 2005).

Prescribing quality is measured using sets of quality prescribing indicators which are either applied to large prescribing databases or at the local level to individual patient records (Tully and Cantrill 2006). Currently there is little published data which rigorously evaluates the quality or safety of nurse prescribing. The limited literature describes nurse prescribing as 'safe' but with little or no follow-up of patient outcomes. Studies have tended to measure the safety of nurse prescribing in terms of patient attitude rather than through an exploration of prescribing practices. Brooks *et al.* (2001a; 2001b) identified that patients generally felt confident in the nurse's ability to prescribe, especially in an area in which the prescriber had extensive expertise. There was an acknowledgment however by the patients surveyed that nurses needed ongoing education to ensure that they maintained the highest standards in the prescription of medicines.

A few studies have compared nurse prescribing with medical practitioners. The findings identify better nurse outcomes in terms of documentation while there were no significant differences in the quality of the practice including prescribing (Miles *et al.* 2007; Carey *et al.* 2008). All the studies reviewed identified some deficits in nurses' diagnostic skills and subsequent prescribing practice. Johnson, *et al.* (2003) reported that nurse specialists in a glaucoma clinic had a false positive rate of 8% (patients incorrectly diagnosed and started on treatment) and false negative of 6% (patients missed diagnosis), while Latter *et al.* (2005) reported that 2%-10% of prescribing decisions by nurses did not meet criteria for good prescribing practice as outlined in the *Medication Appropriateness Index* (MAI). Latter *et al.* (2005) evaluated the quality and safety of nurses' independent prescribing practices. In particular the evaluation explored the accuracy and comprehensiveness of 128 nurses' written prescriptions and notes recording the consultation process. Latter *et al.* (2005) reported that in the majority of prescribing consultations nurses identified the patient's presenting symptoms, explored their past medical history along with their current medication and identified how they dealt with their symptoms. However, the majority of nurse prescriber consultations did not record the over-the-counter medications taken by patients or whether they had any known drug allergies. Latter *et al.* (2005) further identified that nurse prescribers were comprehensive in their recording of the prescription details including dose, frequency and strength of the medication. Overall, Latter *et al.* (2005: 24) concluded that nurse prescribers' prescriptions were safe and indicated competent practice, however there were issues in relation to the extent to which consultations were recorded 'suggesting nurse independent prescribers... need to continue to stress the importance of full and accurate documentation of prescribing consultations'.

These studies employed a variety of methods to evaluate prescribing practice. The majority of studies benchmarked practice against adherence to Patient Group Directives or local protocols for prescribing specific drugs e.g. antibiotics (Handy 2002; Johnson, *et al.* 2003; Brooks *et al.* 2003; Deave *et al.* 2003). Two studies benchmarked nurse practice against medical practitioners prescribing (Miles *et al.* 2002; Latter *et al.* 2007). These studies took a more comprehensive approach and evaluated the consultation process that led to the decision to prescribe and included

tests ordered, preliminary diagnosis, symptoms as well as the appropriateness of the drug therapy.

One of the most widely used and validated tools internationally to evaluate the safety of doctors prescribing is the 'Medication Appropriateness Index' (MAI). Latter *et al.* (2009) used this tool to evaluate nurse prescribing, but the review only involved 12 drug items. The MAI was developed to audit prescribing practice based on data extracted from patient medical records and prescription charts. The original MAI tool consists of 10 criteria related to medication indication, clarity of prescription and cost. However some authors report that not all criteria are relevant to every setting (Latter *et al.* 2007). A significant limitation of the MAI is that it ignores patient orientated indicators (outcomes) and concentrates solely on drug or disease orientated quality indicators. Andersen (2006) suggests that without patient outcomes such as hospital readmission, length of hospital stay, incidence of adverse drug reactions, critical incident reports, morbidity or mortality then other indicators are largely surrogate markers of safety. Carey *et al.* (2008) included patient length of stay in an evaluation of the Diabetic Specialist Nurse Prescriber role, but such outcome information is rarely reported in studies evaluating prescribing.

As nurse/midwife prescribing becomes established and more and more nurses/midwives take on this role the potential for medication or adverse drug related events might increase just as risk exists with medical prescribing. The onus is on nurse/midwife prescribers to lead the way in actively managing this risk through collaborative audit, critical review of practice and ongoing education.

### 3.7 Nurse/Midwife Prescribers' Perceptions of their Role

Fear of making an error or a lack of knowledge regarding a patient diagnosis are recurring themes in the literature regarding nurses' and midwives' evaluation of their prescribing role. For example Luker *et al.* (1998) identified that amongst the first cohort of nurse prescribers in the UK there was a reluctance to prescribe some medications due to a fear of not knowing whether the patient was experiencing an underlying disease process. Nurses perceived they did not have the ability to diagnose this underlying process. However, it should be noted as nurses

in Luker's study gained confidence this fear of prescribing certain medications decreased. Medications highlighted in the literature which nurses/midwives were reluctant to prescribe included laxatives and analgesics (Luker *et al.* 1998). However, there appeared to be less reluctance to prescribe topical medications such as fungal creams (Luker *et al.* 1998).

Little has been written of the influence of pharmaceutical representatives on the prescribing practices of nurses/midwives. Luker *et al.* (1998) did address this issue and found that following an initial spell of high level contact this diminished substantially over time. In fact a number of prescribers rued the relative lack of contact from pharmaceutical sales representatives as they would have welcomed the opportunity to discuss various products.

As well as benefitting patient care nurse/midwife prescribing has also been found to have a direct impact on the professional role of the nurse/midwife (Rodden 2001; Lewis-Evans and Jester 2004). Rodden (2001) surveyed all 127 nurse prescribers in one primary care National Health Service (NHS) trust in Scotland to elicit their views on the impact of nurse prescribing on their autonomy and independence. Respondents reported that nurse prescribing gave them more autonomy and as a consequence less dependence on the General Practitioner (GP). Nurse prescribers in Luker and McHugh's (2002) study also reported an increase in autonomy, as they were able to manage patients' care more completely and consequently spent less time referring them to the GP. Similarly, Lewis-Evans and Jester (2004), using a qualitative approach, identified that prescribers reported a number of positive outcomes associated with their role including the ability to provide patient-centred care, the saving of time for patients, increased convenience for patients and the development of increased autonomy.

One recurring theme in the literature is the perception amongst nurse/midwife prescribers that they are limited in their prescribing role due to the restrictions placed on the medications they can prescribe (Luker *et al.* 1997, 1998; Lewis-Evans and Jester 2004; Latter 2005). This has been identified as the primary reason behind the low rates of nurse/midwife prescribing found in some UK evaluations (Courtenay *et al.* 2007). An extensive survey exploring the barriers and facilitators to prescribing

practice of over 800 independent and supplementary nurse prescribers was recently undertaken in the UK (Courtenay *et al.* 2007). Courtenay *et al.* (2007) found that independent and supplementary prescribers reported high levels of confidence in their ability to prescribe however there were a number of barriers to the development of prescribing practice including restrictions imposed by the formulary, delays in implementing a clinical management plan, inability to obtain a prescription pad and a lack of access to computer generated prescriptions.

One of the largest surveys on attitudes of nurses towards nurse prescribing was undertaken in the UK and investigated Macmillan nurses' views on nurse prescribing in cancer and palliative care (Ryan-Wolley *et al.* 2007). Over two thousand nurses were surveyed on the barriers and facilitators to developing a prescribing role. With a 70% response rate Ryan-Wolley *et al.* (2007) found that approximately thirteen per cent had undertaken either an independent prescribing or supplementary prescribing preparation course however approximately half were not actively prescribing. Approximately a quarter of those surveyed did not perceive that prescribing was a role they would like to undertake or that patients would wish them to prescribe. Macmillan nurses identified the principal facilitators to developing prescribing practice as a supportive organisational network and ongoing support from medical colleagues. A major barrier to the development of prescribing practice was the lack of instrumental support to enable them prescribe within their practice area. Ryan-Wolley *et al.* (2007) concluded that to encourage specialist groups to prescribe, such as those in the area of cancer nursing and palliative care, there is a need to ensure that specialist prescribing is addressed in prescribing preparation programmes and that infrastructural support is developed in the clinical area to facilitate the ongoing development of a prescribing role.

### 3.8 Conclusion

There is a growing (although still limited) body of evidence that demonstrates that nurse/midwife prescribing is associated with a number of effective outcomes including patient satisfaction and patient safety, the provision of continuity of care, development of specialist knowledge and the delivery of comprehensive

education and advice to patients (Brooks *et al.* 2001a, 2001b; Luker *et al.* 1998a; Davis and Drennan 2007). Studies that have explored the outcomes associated with nurse prescribing have examined it from a number of perspectives including from the viewpoint of patients, the general public, nurse/midwife prescribers, and the nursing, medical and pharmaceutical professions.

However, not all outcomes of nurse prescribing have been identified as being positive. Concerns have been raised that relate to the educational preparation of nurses to prescribe and the impact that prescribing has on the role of the nurse (Harrison 2003, Nolan *et al.* 2001). Nolan *et al.* (2001) in a survey of mental health nurses' perceptions of prescribing identified a number of disadvantages to the initiative including the possibility of litigation, poor preparatory education and training, increased workloads and less patient contact. Horton (2002) argued that many of the disadvantages associated with nurse prescribing in the UK were due to its hasty and poorly planned implementation. In two recent studies exploring nurses' perceptions of their prescribing role, increased workload and administration were the predominant disadvantages identified as being associated with the role (Rodden 2001; Luker and McHugh 2002). However, two major evaluations of nurse prescribing in the UK (Luker *et al.* 1997; Latter *et al.* 2005) have identified that the introduction of nurse prescribing has been a success and have led to their expansion both in terms of the number of nurse/midwife prescribers and the number of drugs that can be prescribed.

# Chapter 4

## Research Design

### 4.1 Introduction

This section will discuss the methods that were used to evaluate the nurse and midwife prescribing initiative. The five phases of the evaluation are outlined; this is followed by a discussion of the research design including the instruments used, the methods of data collection, the sampling procedure and data analysis techniques employed. The methods used are influenced by current thought on evaluation theory and the current move to use both quantitative and qualitative approaches and multiple measures in the evaluation of an innovation such as nurse/midwife prescribing. The evaluation was completed over a six-month period (January – June 2009) and data was primarily collected from the eighteen organisations that had nurse and midwife prescribers in post at the commencement of the evaluation (January 2009). Data was also collected from a number of key stakeholders who have contact with, or an interest in, nurse and midwife prescribing.

### 4.2 Purpose of the Evaluation

The purpose of the evaluation was to examine the effectiveness in practice of the introduction of independent nurse and midwife prescribing and to establish if the model adopted for implementation had achieved the stated objectives in terms of quality, patient safety, communication and patient/client benefits and satisfaction.

### 4.3 Aims of the Evaluation

The aims of the evaluation were based on the specific research questions identified by the Steering Group for the Independent External Evaluation of the Nurse/Midwife Prescribing Initiative and included: 1) to evaluate nurse and midwife prescribing from a service perspective; 2) to evaluate the current and potential outcomes of nurse and midwife prescribing in terms of patient/client benefits, safety and satisfaction; 3) to take into account the views of key stakeholders, particularly employers, nursing and midwife, medical and pharmacy professions and the Regulatory bodies.

The aims were achieved through an evaluation of the following aspects of the prescribing initiative:

- a) Relevant legislation, regulations and professional guidance – this was addressed through a comprehensive review of both national and international legislation and professional guidance. The evaluative research also ascertained prescribers and key stakeholders' awareness and perceptions of legislation and guidance.
- b) Educational preparation including selection processes – a comprehensive evaluation of the nurse/midwife prescribers' experience of their selection onto, and experiences of, their preparation programme was undertaken.
- c) Service implementation including factors facilitating and inhibiting prescribing opportunities – this was addressed from the perspective of nurse/midwife prescribers on the barriers and enablers that impacted on their role.
- d) Monitoring, auditing prescribing process, patterns, practices and compliance – this aim was addressed through a comprehensive audit of nurses'/midwives' prescribing practice through the use of a measure known as the *Medication Appropriateness Index*. Compliance was addressed through measuring patients' self-reports of their intent to comply with the prescription administered by a nurse/midwife prescriber.
- e) Communication – both intra-professional and inter-professional communication was evaluated from the perspective of key stakeholders involved the prescribing initiative through both quantitative and qualitative approaches.
- f) Value for money – auditing compliance, patient satisfaction, effectiveness and timeframe – this was addressed through all phases of the evaluative process. The conclusion to the evaluation provides an overall assessment of the merit of the prescribing initiative.
- g) To evaluate the current and potential outcomes of nurse and midwife prescribing in terms of patient/client benefits, safety and satisfaction – as key stakeholders in the prescribing initiative patients and clients who had contact with nurses and midwives who prescribe were surveyed as part of the evaluative process.

h) The review was required to take into account the views of key stakeholders, particularly employers, the nursing and midwifery professions, medical and pharmacy professions and Regulatory bodies. Each of these key groups was involved in various stages of the evaluative process. The extent of involvement of each group of stakeholders is outlined in each phase of the evaluative process.

#### 4.4 Design of the Evaluation

The design of the evaluation was based on the theory underpinning evaluation research. Evaluation theory examines the effectiveness and merit of an intervention, in this case the implementation of nurse and midwife prescribing in Ireland. Evaluation research may be carried out using quantitative methods, qualitative methods, or a combination of quantitative and qualitative methods (Creswell 1994; Weiss 1998). This study utilises a combination of qualitative and quantitative methodologies. This combination of a quantitative approach (survey questionnaires, audit of prescriptions) and qualitative approach (individual interviews, documentary analysis and open-ended qualitative comments from the survey questionnaires) was used to add scope, breadth and comprehensiveness to the evaluation (Goodwin & Goodwin 1984; Creswell 1994; Weiss 1998; Dillman 2000; Drennan 2003).

#### 4.5 Sample

Those who have an interest in the nurse/midwife prescribing initiative were identified in the evaluation as stakeholders and were an important part of the evaluation process. Therefore the evaluation took into account the views of key stakeholders, including employers, nurses and midwives (including prescribers and non-prescribers), the medical and pharmacy professions, regulatory bodies and patients and clients who had contact with nurse/midwife prescribers.

##### 4.5.1 Sample of Nurse/Midwife Prescribers

At the time of the evaluation (January 2009) a total of 138 nurses/midwives who had completed the prescribing educational programme at either the School of Nursing, Royal College of Surgeons in Ireland or the School of Nursing and Midwifery, University College Cork, were

surveyed. Of these 138 nurses/midwives, fifty-seven were registered as nurse prescribers with An Bord Altranais at the time of the evaluation (Office of the Nursing Services Director, HSE 2009). These fifty-seven Registered Nurse Prescribers (RNPs) were employed in eighteen health service providers. The remaining course participants had not yet commenced their registration or were in the process of registering with An Bord Altranais. The School of Nursing, Royal College of Surgeons in Ireland and School of Nursing and Midwifery, University College Cork held the sampling frame for course participants.<sup>10</sup>

A total of eighteen nurses and midwives who had completed the prescribing preparation programme were interviewed for the qualitative phase of the study. Participants were sent a postcard with their survey pack asking them if they would be willing to make themselves available to be interviewed to further explore issues in relation to nurse/midwife prescribing.<sup>11</sup> A total fifty-eight nurses/midwives expressed an interest in being interviewed. From this cohort eighteen nurses/midwives were purposively identified in relation to geographical location, clinical speciality and whether or not they were currently prescribing.

##### 4.5.2 Sample of Patients

Patients or parents of children who had received a prescription from a nurse/midwife prescriber were requested, following consultation with a nurse/midwife prescriber, to complete a questionnaire which measured their level of satisfaction with the prescribing and consultation process. Eligibility for patient inclusion included the following: 1) ability to understand English; 2) no evidence of cognitive impairment; 3) aged 18 years and older; 4) were not precluded from taking part in the survey due to their illness. Due to the ethical processes associated with the study patients were presented with the questionnaire and an information leaflet by the nurse/midwife prescriber following the consultation in which a prescription was administered. The patient was requested to complete the questionnaire at a time suitable to them and to return the questionnaire directly

<sup>10</sup> The research team at UCD did not have access to the sampling frame held by the respective colleges; questionnaires were administered on behalf of the evaluators by RCSI and UCC.

<sup>11</sup> Respondents were requested to return the postcard separate from the questionnaire to preserve anonymity.



to the research team at University College Dublin. Patients were provided with a stamped addressed envelope to facilitate this process. In total approximately 300 patient questionnaires were distributed. There were three cohorts in the patient stage of the evaluation. Cohort one consisted of adult patients who had received a prescription from a nurse/midwife in a general hospital, cohort two consisted of women who had received a prescription from a midwife in a maternity hospital or maternity unit and cohort three were parents whose child received a prescription from a nurse in a children's hospital or children's unit. For the purpose of the evaluation responses from the three cohorts are not distinguished but are reported as overall patient responses.

#### 4.5.3 Sample of Stakeholders

This stage of the evaluation undertook a survey to ascertain key stakeholders' perceptions of the nurse/midwife prescribing initiative. Key stakeholders were defined as health professionals that had a specific interest in, or were involved in, the development of the nurse/midwife prescribing project. Stakeholders surveyed included nurse/midwife clinicians, managers and administrators, pharmacists (both hospital and community based), academics and medical doctors as well as key stakeholders in each of the regulatory and policy bodies including An Bord Altranais, National Council for the Professional Development of Nursing and Midwifery, Department of Health and Children, the Health Service Executive and unions representing nurses and midwives. Chairs of hospital drugs and therapeutics committees were also surveyed, as were representatives from the Irish Medicines Board, the Irish Medical Council and the Pharmaceutical Society of Ireland. In total 456 stakeholders were surveyed.

#### 4.6 Phases of the Evaluation

To ensure that the nurse and midwife prescribing initiative was comprehensively evaluated five distinct but interlinked phases of research were carried out. The overall aim of this approach was to enable key stakeholders have a voice in the evaluative process. The five phases were as follows:

1. Evaluation of Educational Preparation of Nurses and Midwives for Prescribing Practice.
2. Audit of Nurse/Midwife Prescribing.

3. Evaluation of Patient Satisfaction with the Prescribing and Consultation Process.
4. Evaluation of Health Professionals' Perceptions of Outcomes from the Prescribing Initiative including Patient/Client Benefits, Safety and Communication.
5. Nurses'/Midwives' Perceptions of Outcomes from the Prescribing Initiative including Patient/Client Benefits, Safety, Communication.

#### 4.7 Phase 1 - Evaluation of Prescribing Preparation Programmes

Two questionnaires were used to evaluate the education programme undertaken by nurses and midwives to prepare them for prescribing practice. The first, entitled the *Prescribing Course Outcomes Evaluation Questionnaire* (PCOEQ), evaluated course participants' abilities and understanding of prescribing practice as a consequence of the preparation programme. The second, the *Prescribing Course Evaluation Questionnaire* (PCEQ), evaluated course prescribers' perceptions of the quality of their preparation programme.

The framework for the evaluation of outcomes achieved as a consequence of the educational programme was determined by the document *Requirement and Standards for Education Programmes for Prescriptive Authority* (An Bord Altranais 2007b) and the best practice in the evaluation of education programmes (Ramsden 1991). This framework was used to develop an evaluative questionnaire that measured nurses and midwives self-reports of their abilities, outcomes and satisfaction following the completion of an educational programme for prescriptive authority (see Appendix I). Programme participants' self-reports are recognised as valid indicators of outcomes in evaluative research (Ellett 1997, Anaya 1999, Drennan and Hyde 2008).

Outcomes from the educational programme were measured under six domains. These included:

1. *Professional Accountability and Responsibility*  
This section of the questionnaire measured programme participants' understanding and ability in relation to: professional regulations and guidelines, accountability and responsibility for prescribing practice, risk management, evidence-based practice and clinical governance in relation to prescribing.

## 2. *Legal and Ethical Aspects*

This section of the questionnaire measured programme participants' understanding and ability in relation to: legislation for nursing/midwife practice and medication management, legal liability and clinical indemnity for prescribing and expansion of nursing/midwife practice, informed consent of patient/client for treatment, ethics and prescribing and documentation requirements of prescribing.

## 3. *Pharmacology and Pharmacotherapeutics*

This section of the questionnaire measured programme participants' understanding and ability in relation to: pharmacotherapeutics, pharmacodynamics, pharmacokinetics and pharmacovigilance, process for identification and treatment of adverse reactions and interactions, medication error and pharmacoconomics.

## 4. *Principles of the Prescribing Process*

This section of the questionnaire measured programme participants' understanding and ability in relation to: steps of prescribing process, assessment of the patient, interpretation of laboratory and diagnostic tests and their development of communication skills.

## 5. *Collaboration with Other Health Care Professionals*

This section of the questionnaire measured programme participants' understanding and ability in relation to: interpersonal and communication skills with allied health professionals, role and functions of other healthcare professionals involved in medication management and management of conflict.

## 6. *Students' Overall Satisfaction with the Prescribing Preparation Programme*

This section of the questionnaire measured students' satisfaction with both the theoretical and clinical aspects of the prescribing preparation programme. Areas that were evaluated included course participants' experience of mentoring and clinical supervision, participants' perceptions of the organisation of the programme, their evaluation of the assessment process and the relevance of the content of the course to their prescribing practice.

## 4.7.1 Instruments used to Measure Educational Outcomes

Two evaluation instruments were developed to measure educational outcomes associated with the programme; 1) the *Prescribing Course Outcomes Evaluation Questionnaire* and 2) the *Prescribing Course Experience Questionnaire*.

### 4.7.1.1 Prescribing Course Outcomes Evaluation Questionnaire

Domains 1 to 5 (professional accountability and responsibility, legal and ethical aspects, pharmacology and pharmacotherapeutics and collaboration) were measured using the *Prescribing Course Outcomes Evaluation Questionnaire* (PCOEQ), which was developed specifically for this study to evaluate outcomes achieved as a consequence of the prescribing programme. The questionnaire consisted of 46 items that evaluated course participants ability and understanding on the content covered in the prescribing course. Items were presented on a 7-point scale that asked participants to rate their ability from 1 - indicating low ability/understanding to 7 - indicating high ability/understanding. The instrument was presented in the format of a post-test/then-test measurement. The post-test section of the questionnaire asked respondents to rate where they perceived themselves now as a result of completing the prescribing course whereas the then-test section requested the course participant to think back to the beginning of the programme and rate where they saw themselves prior to commencing the prescribing course. This method is called a retrospective pre-test design and has been used extensively in the evaluation of education programmes including at master's level in nursing (Drennan & Hyde 2008), leadership skill courses (Rohs 1999, 2002), public health education programmes (Umble *et al.* 2000) courses in statistics and research methods (Townsend and Wilton 2003), and communication skills training for medical students (Sprangers 1989). It is argued that the retrospective pre-test is a better indicator of change than the traditional pre-test-post-test design due to the problem of response-shift bias.<sup>12</sup> The use of retrospective pre-test design may be justified when respondents come to an educational programme, such as a prescribing course, with some understanding of the

<sup>12</sup> Response-shift bias occurs when a student's conceptualisation of the construct being measured (e.g. pharmacology) changes over the course of an educational programme.

construct. Furthermore, the design has utility when it is not possible to collect pre-test data (Drennan & Hyde 2008), as was the case in this study. The rationale for adding the retrospective pre-test section is to evaluate the extent to which students self-reported the extent to which they changed from the beginning of the programme to the end of the programme. The 46 items that comprise the PCOEQ were summated into five scales that measured course participants overall ability in relation to professional accountability and responsibility (7 items), legal and ethical aspects of prescribing (9 items), pharmacology and pharmacotherapeutics (10 items), principles of the prescribing process (15 items), collaboration and communication with other health professionals (3 items), and two single items that measured prescribers' reports of their overall ability to prescribe and their overall self-confidence to prescribe.

#### 4.7.1.2 Reliability of the Prescribing Course Outcomes Evaluation Questionnaire

The results of the reliability of the six scales that comprise the PCOEQ are reported in table 4.1. The reliability of the scale was measured using the internal consistency measure Cronbach's Alpha (Cronbach 1951). The results indicated that the scales were internally consistent and all were above the recommended values of 0.70 for reliability (Nunnally 1978).

Table 4.1 Reliability Estimates of the PCOEQ Scales

Scale Name	Number of Items	Number of Respondents	Cronbach's Alpha
Professional Accountability and Responsibility	7	94	0.89
Legal and Ethical Aspects of Prescribing	9	90	0.92
Pharmacology and Pharmacotherapeutics	10	86	0.90
Principles of the Prescribing Process	15	86	0.93
Collaboration with other Health Professionals	3	94	0.89

#### 4.7.1.3 Prescribing Course Experience Questionnaire

Domain 6, student satisfaction, was measured using a modified form of the *Course Experience Questionnaire* (CEQ) (Ramsden, 1991), which for the purpose of this study was entitled the *Prescribers' Course Experience Questionnaire* (PCEQ). The original CEQ evaluates students' perceptions of the quality of the courses they completed at university or college (Ainley and Johnson 2000, McInnis *et al.* 2001). The value of the modified CEQ in this evaluation was that it provided a broad perspective on outcomes by focusing on course participants' perceptions of their prescribing course rather than on their evaluations of particular lecturers. The PCEQ was used in this study to measure course participants' perceptions of the quality of teaching; the organisation of the programme, the workload experienced by students throughout the programme, the level of clinical and mentoring support received by candidate prescribers and the relevance of the programme overall to their prescribing practice. The PCEQ consisted of 41 items and respondents were asked to rate their level of satisfaction or dissatisfaction with each of the items on a five-point scale ranging from 'Strongly Disagree' to 'Strongly Agree'. The 41 items that comprised the PCEQ were summated into six scales that measured respondents' overall satisfaction with teaching (6 items), assessment (12 items), preparation for prescribing practice (4 items), workload (4 items), mentor support (7 items), organisation of the programme (4 items) and one item that measured course participants' overall level of satisfaction with the prescribing preparation programme.

#### 4.7.1.4 Reliability of the Prescribing Course Experience Questionnaire

The results of the reliability of the six scales that comprise the PCEQ are reported in table 4.2. The reliability of the scale was measured using the internal consistency measure Cronbach's Alpha (Cronbach 1951). The results indicated that the scales were internally consistent and all were above the recommended values of 0.70 for reliability (Nunnally 1978).

Table 4.2 Reliability Estimates of the PCEQ Scales

Scale Name	Number of Items	Number of Respondents	Cronbach's Alpha
Good Teaching	6	93	0.77
Appropriate Assessment	12	84	0.76
Workload	15	92	0.74
Mentor Support	7	92	0.95
Organisation of the Programme	4	92	0.73

## 4.8 Phase 2 - Audit of Nurse/Midwife Prescribing

### 4.8.1 Aims of the Audit

The aim of the audit was to evaluate nurse/midwife prescribers' practice in relation to the clinical assessment of patients, selection of medication and clarity of prescribing instructions.

### 4.8.2 Objectives of the Audit:

- To evaluate the accuracy and comprehensiveness of nurses'/midwives' documentation in relation to patient assessment, diagnosis and rationale for prescribing.
- To evaluate the accuracy and comprehensiveness of nurses'/midwives' written prescriptions.
- To evaluate the appropriateness of nurse/midwife prescribing using the *Medication Appropriateness Index*.
- To evaluate patient safety outcomes in relation to nurse/midwife prescribing using hospital records.

### 4.8.3 Audit Site Selection

On the 1st January 2009 there were 23 sites with registered nurse prescribers (RNPs). Twenty sites were acute or specialist hospitals with three sites from primary care or mental health. It was decided to exclude the latter three sites from the audit, as the anonymity of the prescribers could not be assured. Furthermore prescribing practice had not had time to become embedded within these sites. A subsample of acute hospitals was obtained

on the basis of location, hospital size and speciality. In each of the selected hospitals all RNPs were eligible for inclusion in the audit.

### 4.8.4 Prescription Sample Selection

The target population in this audit were patients who had received a prescription from a registered nurse prescriber (RNP). As part of their prescribing role each prescriber maintains a *Nurse and Midwife Prescribing Data Collection System* including the patient hospital number for each prescription; this data collection system was used to identify patients. Each RNP was expected to submit a minimum of five and a maximum of eight patient prescriptions for audit. The prescriptions were randomly selected using a random number generation sequence using the statistical software package SAS. The researchers visited each of the clinical sites in preparation for the audit; at this time the RNP and the prescribing site co-ordinators were asked to select the fifty most recent entries on the *Nurse and Midwife Prescribing Data Collection System* with their last entry classified as entry 1. From entry 1 the RNPs were requested to count back and select the following prescription entries: prescription 6, 11, 16, 24, 29, 36, 38, 48. A minimum of five charts were required from each RNP, but eight numbers were generated to allow the RNP meet this quota as at any given time charts may be unavailable for audit due to clinics taking place or patient notes not being available in medical records.

### 4.8.5 Audit Data Collection

The primary source of data for the audit was the patient's clinical or emergency department record and the prescription written by the RNP. The data was extracted using a standardised data extraction proforma (see Appendix II). The data extraction related to the RNP entry in the medical record associated with the prescription and was identified from the *Nurse and Midwife Prescribing Data Collection System*. The focus was on the information recorded by the RNP related to the assessment and diagnosis of the patient and the rationale for prescribing the particular medication.

The information recorded in the audit included the following:

- **Patient Information:** Patient age, gender, and evidence of RNP recording of presenting symptoms, co-morbidities, current medication, drug allergy status, diagnosis, tests ordered, and action plan. If information on patient history and current drug therapy was not recorded in the RNP consultation it was extracted from other medical entries in the patient record<sup>13</sup>.
- **Prescription Information:** The data extracted from the patient's drug chart or the RNP prescription pad included evidence of recording of patient identification and information such as name and hospital number. Personal patient identification information was not recorded, only evidence that this information was present on the drug prescription written by the RNP. Also drug name, dose, scheduling and any additional instructions were identified. The audit tool incorporated elements from the HSE guidelines *An Introduction to Audit of Nurse and Midwifery Prescribing* (Office of the Nursing Services Director HSE, 2008f). The tool identifies criteria which should be complied with to ensure safe and effective prescription writing<sup>14</sup>.
- **Patient outcome and safety information:** This information was obtained from clinical records. In the case of patients who were admitted to hospital, information on duration of stay, duration of ED visit, any evidence of medication related events recorded during the particular hospital stay or hospital readmission within 14 days of discharge and reason for readmission or unscheduled ED repeat visit were recorded. Mortality status at discharge from ED or hospital was recorded at time of discharge while mortality status of patients attending outpatient clinics was indirectly evaluated by examining

13 There were no specific national guidelines from on Bord Altranaís or in the HSE guidelines, *An Introduction to Audit of Nurse and Midwifery Prescribing* (2008), on the minimum standard of information to be included in a RNP written consultation. This audit adopted the tool developed by Courtney et al (2007).

14 In addition a photocopy of the actual prescription and consultation was taken when photocopying facilities were made available, but this was not easily accessible in all sites. All patient identification and RNP details were removed from the photocopied sheet prior to leaving the study site.

subsequent OPD clinic appointments or a record in the patient's chart indicating that the patient had died. OPD clinic appointment times and duration of visits were not recorded in patient's notes. ED discharge times were similarly not recorded for one third of the sample.

#### 4.8.6 Application of the Medication Appropriateness Index (MAI)

Two members of the research team, a medical practitioner and a pharmacologist, applied the MAI to the drug prescriptions included in the audit. All available information from the patient consultation, medical history, current medication and prescription information was used by the examiners to assess the appropriateness and safety of nurse/midwife prescribing against the eight criteria in the MAI tool. The criteria assessed were: 1) Is there an indication for the medication? 2) Is the medication effective for the condition? 3) Is the dosage correct? 4) Are the directions correct? 5) Are there significant medical interactions? 6) Are there significant medication/disease interactions? 7) Is there unnecessary duplication? 8) Is the duration of therapy acceptable? Two MAI criteria were omitted, one related to cost, as nurses are constrained in the choice of medicines they can prescribe this was not felt to be relevant, the second criteria related to 'were directions practical'. It was decided by the research team that this item was subjective and there was insufficient information documented to allow adequate assessment of this item.

In this study the medical practitioner and pharmacologist were not involved in data collection or employed by any of the study sites. Each independently reviewed the 208 medications prescribed. Reviewers were given three response options for the 8 MAI criteria: a) appropriate, b) inappropriate or c) insufficient information to make an assessment (Hanlon 1992). The reviewers also provided a qualitative rationale if they recorded an 'inappropriate' or 'insufficient information' response.

In Chapter 6 a detailed breakdown of the individual assessment for each of the 8 MAI criteria is presented, followed by the percentage concordance between the two reviewers for each criteria. The overall number of drug items meeting all eight criteria are reported. The qualitative justification for an 'inappropriate' response is also reported.

#### 4.8.7 Validity and Reliability of the Medication Appropriateness Index

The MAI is among the most widely tested and validated of the prescribing assessment instruments available (Latter *et al.* 2007). The original developers of the instrument reported high inter-rater reliability (Cohen's Kappa 0.83 - 0.92) (Hanlon *et al.* 1992; Fitzgerald *et al.* 1997). However, authors have recently reported moderate overall inter-rater reliability estimates (Cohen's Kappa 0.45 - 0.50) (Bregnhøj *et al.* 2005; Stuijt *et al.* 2009).

In this audit both reviewers were readily able to apply the criteria to the majority of drugs prescribed thus demonstrating face and content validity of the tool. Difficulties arose with a small number of medicines that were prescribed but had minimal or no associated patient consultation recorded in the patient's note or chart. In some cases there was insufficient information available or gathered by the researchers from the medical records to allow a full evaluation on all eight criteria.

The inter-rater reliability between the two reviewers for each of the 8 items of the MAI was tested using Kappa statistic (comparison of paired ratings for each medicine reviewed) A kappa value of <0.20 indicated poor inter-rater reliability, 0.21-0.41 fair, 0.41-.60 moderate, 0.61-0.80 substantial and value >0.80 excellent reliability (Stuijt *et al.* 2009) (see Chapter VI for Kappa values computed in this study).

### 4.9 Phase 3 - Evaluation of Patient Satisfaction with Nurse/Midwife Prescribing

A number of approaches have previously been used to measure patients' satisfaction with nurse prescribing. The predominant approach has been qualitative semi-structured interviewing. However, to ensure that findings were generalisable a structured questionnaire measuring patients' level of satisfaction with the nurse/midwife prescribing process was developed.

The patient satisfaction survey measured a number of domains in relation to patients' experience of nurse/midwife prescribing (Appendix III). These domains included: 1) attitudes towards nurse/midwife prescribing; 2) satisfaction with education/advice received, 3) satisfaction with the consultation process (operationalised

by the Consultation Satisfaction Questionnaire (CSQ) (Baker 1990; Baker and Whitfield 1992; Poulton 1996) and 4) intention to comply with the nurse/midwife prescriber's prescription and advice (measured by the compliance intent subscale of the Medical Interview Satisfaction Scale (MISS) (Meakin and Weinman 2002)).

#### 4.9.1 Measuring Patients' Attitudes Towards Nurse/Midwife Prescribing

Items that measured patients' attitudes towards nurse/midwife prescribing were adapted from a number of sources including an evaluation of extended independent nurse prescribing (Latter *et al.* 2005) and rheumatology patients' attitudes towards nurse prescribing (Berry *et al.* 2008). Attitudinal questions measured the level of support patients had towards nurse/midwife prescribing and whether they preferred a doctor or nurse/midwife to prescribe their medication.

#### 4.9.2 Measuring Patients' Satisfaction with Education/Advice Received Regarding their Medication

Nine items on the patient questionnaire measured patients' attitudes towards the advice received from a nurse/midwife prescriber on their medication. This included satisfaction with advice received regarding the time, dose, frequency, purpose and side-effects of the medication prescribed. The items for this section of the questionnaire were adapted from Latter *et al.*'s (2005) evaluation of independent nurse prescribing in the UK. Patients were requested to respond to each of the statements on a five-point scale ranging from 'Strongly Disagree' to 'Strongly Agree'.

#### 4.9.3 Measuring Patients' Satisfaction with the Consultation Process Undertaken by the Nurse/Midwife Prescriber - Consultation Satisfaction Questionnaire

The Consultation Satisfaction Questionnaire (CSQ), originally developed to measure patient satisfaction with the consultation process undertaken by a medical practitioner (Baker 1990; Baker and Whitfield 1992), was adapted by Poulton (1996) to measure patient satisfaction following consultation with health visitors, district nurses, practice nurses and nurse practitioners. The principal amendments made to the original questionnaire by Poulton were the replacement of the word 'doctor' with

'nurse practitioner' or 'health visitor' as appropriate and the substitution of the word 'examining' with the word 'care'. Previous testing of the nurse version of the CSQ demonstrated strong construct validity and acceptable levels of internal consistency. Construct validity, tested using Principal Components Analysis, identified a three-factor solution; these factors were identified as 'Professional Care', 'Depth of Relationship' and 'Perceived Time' (Poulton 1996). Poulton reported internal consistency measures for the 'Professional Care' scale at 0.86, for the 'Depth of Relationship' scale at 0.81 and 'Perceived Time' scale at 0.78<sup>15</sup>. The CSQ has been used in many studies to evaluate patient satisfaction. These include: comparison of nurse practitioners with general practitioners on patient satisfaction with consultation in primary care (Kinnersley *et al.* 2000). Kinnersley *et al.* (2000: 1044) have also used the CSQ to ascertain the satisfaction of parents with the consultation process who were seeking advice for their child and concluded that 'it was a reasonable measure of satisfaction for children's consultations'. In Kinnersley *et al.*'s study the CSQ was administered to the parents of children aged 15 years and younger.

In this study the original overall satisfaction subscale (Baker and Whitfield 1992), in association with the perceived time and professional care subscales (Poulton 1996), were used to measure patients' overall satisfaction with the prescribing process. The depth of relationship subscale was omitted from the measurement as it was felt it was not appropriate for measuring satisfaction with the prescribing process. The overall satisfaction subscale contained three items that measured patients' satisfaction with the care and advice given by the nurse/midwife prescriber, the perceived time subscale measured patients' perceptions of the time afforded them in the consultation process by the prescriber and the professional care subscale measured respondents' perception of how professional the nurse/midwife was in the delivery of their care.

The results of the reliability of the three scales that comprise the CSQ are reported in table 4.3. The reliability of the scale was measured using the internal consistency measure Cronbach's Alpha (Cronbach 1951). The results

indicated that the scales professional care and perceived time were internally consistent however the scale overall satisfaction was slightly below the recommended value of 0.70 (Nunnally 1978).

**Table 4.3 Reliability Estimates of the CSQ Scales**

Scale Name	Number of Items	Number of Respondents	Cronbach's Alpha
Professional Care	7	139	0.89
Perceived Time	3	140	0.70
Overall Satisfaction	3	138	0.68

#### 4.9.4 Measuring Patients' Intention to Comply with the Nurse/Midwife Prescriber's Prescription and Advice

Patients' intention to comply with a nurse/midwife prescriber's education and advice was measured using the 'Compliance Intent' subscale of the *Medical Interview Satisfaction Scale* (MISS) (Wolf *et al.* 1978, 1981; Meakin and Weinman 2002) and one overall item that asked patients the extent to which they would take the medication prescribed by the nurse/midwife prescriber.

The MISS was originally designed to measure patient satisfaction following consultation with a medical practitioner. Following its development in the US in the late 1970s and early 1980s (Wolf *et al.* 1978, 1981) it was subsequently modified for use in the UK (Meakin and Weinman 2002). The MISS consists of four subscales: 'distress relief', 'communication comfort', 'rapport' and 'compliance intent'. For this study only the 'compliance intent' subscale was used. The 'compliance intent' subscale consists of three items: 'I expect that it will be easy for me to follow the nurse's/midwife's advice', 'It may be difficult for me to do exactly what the nurse/midwife told me to do' and, 'I'm not sure the nurse's/midwife's treatment will be worth the trouble it will take'. Meakin and Weinman (2002) reported that patients who are more satisfied with the consultation process are more likely to comply with treatments. Previously reported internal consistency measures for the 'compliance Intent' subscale was 0.67 (Meakin and Weinman 2002). In this evaluation the Compliance Intent subscale was found to have an acceptable level of reliability; using the internal consistency measure, Cronbach's alpha, the scale had a reliability of 0.70.

15 The internal consistency measure used in Poulton's psychometric study was Cronbach's alpha.

#### 4.9.5 Demographic Data Collected from Patients

The final section of the questionnaire collected data related to the patients' demographic and health profile. Demographic data included the patient's gender and age with health data recording patient's subjective rating of their health, the condition for which they received a prescription and the number of times they had been provided with a prescription from a nurse/midwife prescriber. Patients were also given an opportunity to comment on the prescribing initiative on an open-ended section of the questionnaire.

#### 4.9.6 Procedure for Patient Questionnaire Design and Distribution

Three versions of the questionnaire ascertaining patients' attitudes and satisfaction with nurse/midwife prescribing were developed for this study: a patient questionnaire, administered to patients who attended a general hospital; a questionnaire for women who attended a maternity hospital and a parents'/guardians' questionnaire, for parents/guardians who attended a hospital with their child. The parents' questionnaire was filled out from the perspective of the parent/guardian who accompanied their child for treatment in hospital. Nurse/midwife prescribers were requested to present the questionnaire to patients following the administration of the prescription. The patient was requested to take the questionnaire away with them to complete it at a time suitable to them and to return the questionnaire directly to the research team at University College Dublin. Patients were provided with a stamped addressed envelope to facilitate this process. It should also be noted that nurse/midwife prescribers did not have access to the questionnaires completed by patients as these were returned directly to the evaluation team.

#### 4.10 Phase 4: Health Professionals' Evaluation of Nurse/Midwife Prescribing

This phase of the project used a self-administered postal questionnaire to measure health professionals' evaluations of the nurse/midwife prescribing initiative (see Appendix IV). Health professional groups that had a specific interest in nurse/midwife prescribing were surveyed. These included nurse/midwife clinicians and nurse/midwife managers, pharmacists and medical doctors as well as key stakeholders in each of the

regulatory bodies with an interest in this area including An Bord Altranais, National Council for the Professional Development of Nursing and Midwifery, the Health Service Executive and the Department of Health and Children. Surveys have previously been undertaken to ascertain pharmacists' (Cooper *et al.* 2000) and general practitioners' (Carr *et al.* 2002; Rodden 2001; Wilhelmsson *et al.* 2001) perceptions of nurse prescribing. In particular the instrument devised by Wilhelmsson *et al.* (2001) in Sweden had utility for this evaluation as were questions developed by Latter *et al.* (2005) to measure perceptions of nurse prescribing in the UK. Items developed for the stakeholders' questionnaire were the same for each group surveyed and this allowed responses from each group of health professionals to be compared. The stakeholders' questionnaire was divided into two sections; section one consisted of 22 items which were completed by all stakeholders and evaluated distinct but interrelated areas of nurse/midwife prescribing including regulation and guidance, educational preparation, factors facilitating and inhibiting prescribing opportunities, monitoring processes, patient safety, teamwork and communication, impact on the work of other health professionals, quality of care and overall merit of nurse/midwife prescribing. Section two, which consisted of 17 items, evaluated the merit of the prescribing initiative from the perspective of clinical stakeholders who had day-to-day contact with prescribers in the clinical area e.g. hospital consultants, non-consultant hospital doctors, pharmacists and nurses/midwives. This clinical stakeholders' section of the questionnaire evaluated the impact the prescribing initiative had on patient care, the impact on the role of the nurse or midwife and the impact on the role of the medical team.

The final section of the stakeholder questionnaire collected the demographic and professional profile of the stakeholders. This included the post currently held, their extent of involvement in the prescribing initiative and whether or not they were involved in their local drugs and therapeutics committee.

#### 4.11 Phase 5: Nurse/Midwife Prescribers' Evaluation of their Role

Nurses and midwives who had completed the prescribing preparation programme were evaluated both



quantitatively (survey) and qualitatively (semi-structured in-depth interviews) in relation to prescribing practice following completion of the prescribing preparation programme. For the purpose of the evaluation nurses and midwives were separated into two cohorts: those who had completed the education preparation programme and were currently prescribing and those who had completed the education preparation programme but were not currently prescribing.

Those who were prescribing at the time of the evaluation were surveyed in relation to their current prescribing practices, their perceptions of the safety of prescribing practice, the impact of the role on their professional practice and the impact of the role on patient care (see Appendix V). The support received by nurses and midwives from other healthcare professionals was also evaluated. Prescribers were also questioned on the extent to which they engaged in clinical professional development following the commencement of their prescribing role. A number of items on the prescribers' questionnaire were similar to questions on the stakeholders' questionnaire, the rationale being to compare the perceptions of both cohorts.

A separate survey was administered to nurses and midwives who had completed the prescribing preparation programme but were not yet prescribing. The aim of this section of the survey was to identify reasons why this cohort had not yet commenced prescribing and to identify their future plans in relation to developing their prescribing practice. Items for the prescribers'/non-prescribers' questionnaires were developed following an extensive review of the literature and drew on the previous evaluations of nurse/midwife prescribing in the UK (Latter *et al.* 2005).

The qualitative phase of the evaluation consisted of semi-structured in-depth interviews with nurses and midwives who were currently prescribing and those who had not yet commenced prescribing at the time of the evaluation. In-depth interviews can be particularly useful in accessing the perspectives of each participant, enabling them to define the problem in their own terms and to challenge pre-conceptions about what is important or significant. In addition, they provide a degree of flexibility, allowing the evaluator to follow up interesting ideas or unexpected issues identified by participants. The

approach was particularly useful in understanding how the programme was perceived in professional practice and nurses'/midwives' subjective experiences of the benefits of the prescribing programme on the health and well-being of patients and clients. This approach also allowed for an exploration of the connection between what the intervention (nurse/midwife prescribing) promised and what was actually implemented. Furthermore, qualitative research may be effective in responding to a number of criticisms levelled at evaluation research such as the lack of practical value of results, the lack of opportunity of stakeholders to participate in the research, and a lack of acknowledgement of the formative components of programmes (von Kardorff, 2004). Qualitative methods to elicit the experiences of nurse prescribers have been used in a number of settings (Luker *et al.* 1998a; Bradley *et al.* 2007). For example Bradley *et al.* (2007) explored nurse prescribers' perceptions of their competency to prescribe, how safe they perceived their prescribing practices and their overall perceptions of the nurse prescribing initiative.

#### 4.12 Procedure for Postal Surveys

The main procedure for the distribution of questionnaires to key stakeholders and nurses and midwives who had completed the prescribing preparation programme was through the postal system. The procedure to ensure acceptable response rates was informed by best practice in the design and distribution of postal questionnaires (Dillman 2000; Edwards 2001 *et al.*; Drennan 2003), and it involved up to four contacts by post with respondents. Contacts included pre-notification letters of the survey, questionnaire administration with a cover letter, follow-up with a replacement questionnaire and a final reminder letter. It has been demonstrated that multiple contacts are the most effective means by which to increase postal survey response rates (Dillman 2000; Edwards *et al.* 2001). Further procedures to increase response rates consisted of return envelopes with real stamps, the use of a respondent-friendly questionnaire design, and personalisation of correspondences. The aim of using these procedures was to reduce both sampling error and sampling bias. Research has shown that respondents to surveys may be significantly different than those who do not respond to surveys. Therefore to ensure that sampling bias was kept to a minimum a comprehensive and systematic survey approach was used.

### 4.13 Data Analysis

#### 4.13.1 Data Analysis – Quantitative Phases

Data obtained was analysed by computer using the Statistical Package for the Social Sciences (SPSS version 16.0). Both descriptive and inferential statistics were used in the analysis and description of the data set through the use of univariate and bivariate statistics. Descriptive statistics (frequencies, frequency per cents, measures of central tendency, and measures of variability) were used to summarise demographic data and results from the instruments used in the study. The types of parametric or nonparametric inferential tests used were determined by level of measurement and assumptions of normality. Data at nominal or ordinal levels of measurement were analysed inferentially using non-parametric tests such as the chi-square test, the Mann-Whitney *U* test (independent groups) or the Wilcoxon Signed Rank test (repeated measures). Data at scale level were analysed using Student t-tests or ANOVA, as appropriate.

To aid interpretation of findings on the scales that comprise the *Prescribing Course Experience Questionnaire* (PCEQ) a linear transformation of the mean score was conducted. In the PCEQ, the scales 1, 2, 3, 4, 5 used in the questionnaire were recoded to -100, -50, 0, +50, +100 respectively. This transformation aids interpretation and standardises comparisons. Positive values indicate students are in agreement, negative values indicate disagreement within each domain. The raw scores of the *Prescribing Course Outcomes Evaluation Questionnaire* (PCOEQ) were transformed to a 0 to 100 scale. This transformation converted the lowest and highest scale scores on the PCOEQ to 0 and 100 respectively. Higher scores on the scale indicate prescribers have greater ability and lower scores less ability following the programme. The linear transformation enabled ease of interpretation of the scales of the PCOEQ.

#### 4.13.2 Data Analysis – Qualitative Phase

Data gathered from the individual interviews with nurses and midwives who had completed the prescribing preparation programme was analysed using an analytical strategy known as modified analytical induction. This is a well-established strategy in qualitative research for analysing data gleaned through depth interviewing (Bogden & Biklen, 2007). It begins with sensitising

concepts, that is, categories originating in social theory or extant literature to which the researcher has been exposed. These concepts, or hunches, give rise to tentative questions that guide the emerging interpretations. This approach obviates the notion of a mental blank state at the outset of research associated with other types of qualitative research. As new data are gathered, the early hunches or ‘hypotheses’ can be disturbed and the emerging interpretation modified to accommodate negative cases. Thus, the interpretation evolves as new data confirm or challenge the unfolding themes. Thus, hypotheses are revised if necessary to fit emerging interpretations as data collection and analysis roll out. The analysis is thus an iterative process, involving both deduction and induction; the process is deductive insofar as data are analysed with reference to the researcher’s existing theoretical framework, yet inductive insofar as it is open to the discovery of new patterns, themes and categories in data (Patton, 2002).

The steps to be taken with modified analytic induction were as follows (see Bogden & Biklen, 2007:73):

1. At the outset of the research a rough definition and explanation of the specific phenomenon is created.
2. This definition and explanation are compared with the incoming data as they are gathered.
3. Amendments to the definition and explanation and interpretation are made if new cases arise that contradict the definition as hitherto constructed.
4. Cases that may be at variance with the emerging interpretation are actively sought.
5. The interpretation is redefined and reworked until a universal relationship is arrived at, taking on board each negative case to contribute to the final formulation.

Modified analytic induction thus involved being guided theoretically from existing textual knowledge, coding by relating patterns of speakers’ meanings to available theoretical constructs and consequently reshaping theoretical definitions.

## 4.14 Ethical Considerations

To undertake a survey of patients and to complete the audit phase of the evaluation ethics applications were submitted and approval granted from eighteen hospitals that had RNPs in post at the time of the evaluation. Ethical approval was received from the Research Ethics Committee of University College Dublin to survey health professionals and undertake qualitative interviews with nurse/midwife prescribers/non-prescribers. All participants surveyed were informed about the measurement procedures involved in this study (full-disclosure). Participants were also informed about the nature of the research and that they were entitled not to participate in the study if they so chose (informed consent). Patients in particular were assured that refusal to participate in the study would in no way alter their treatment (the right to fair treatment). Information on these aspects of the study was provided on a Patient Information Leaflet appended to the questionnaire.

All data was coded and individuals or individual third-level institutes, organisations or hospitals were not identifiable in any subsequent reporting of results. No individual identifying information was entered onto computer files, identification numbers were used throughout (right to privacy). All questionnaires remained securely stored when not in use by the researcher and all computer datasets were password protected (right to privacy). Data was only used for the purposes disclosed.

Due to a requirement of the ethics committees it was not possible to post questionnaires directly to patients/clients who had received medication from a nurse/midwife with a prescribing remit. The reason being that the capacity of the patient to complete the questionnaire was not known. There was also a possibility that the questionnaire may be posted to the address of a person who is now deceased. However, ethics committees did agree that the research team could request nurse/midwife prescribers to distribute the questionnaire at the time of consultation. This process ensured that patients met the eligibility criteria for the evaluation. It also tied the distribution of the questionnaire to the consultation thereby aiding patient recall.

Due to the procedures adopted by the university/college in this study, access was not permitted to the contact details of the nurses/midwives who had completed the prescribing preparation programme. However, the third-level institutes agreed to mail questionnaires on behalf of the research team. The universities also facilitated the team in sending follow up reminders. This ensured that at no time did the research team have access to the names and addresses of nurses and midwives who had completed the prescribing programme.

## 4.15 Conclusion

The methods used to evaluate the nurse/midwife prescribing initiative consisted of a mixed-methods approach. Nurses and midwives who had completed the prescribing preparation programme were evaluated on the outcomes achieved as a consequence of the educational programme as well as their perceptions of the overall quality of the course. Nurses and midwives who were actively prescribing at the time of the evaluation were further surveyed on their prescribing practice. The prescriptions and documented consultations of nurse/midwife prescribers were also audited. Those who had completed the educational programme but were not prescribing at the time of the evaluation were surveyed in relation to the issues facilitating or hindering the development of their prescribing practice. A number of nurses and midwives who were prescribing and currently not prescribing took part in semi-structured in-depth interviews. Key stakeholders from a number of professions were also surveyed in relation to their evaluation of the prescribing initiative. Finally patients and parents of children who had received a prescription from a nurse/midwife with prescriptive authority were surveyed on their attitudes towards the initiative, their level of satisfaction with the consultation process and their intention to comply with the treatment prescribed.

## Chapter 5 Evaluation of Educational Preparation of Nurse/Midwife Prescribers

### 5.1 Introduction

This chapter outlines the findings of the evaluation of the educational preparation of nurse and midwife prescribers. The first section of the evaluation reports on the demographic, professional and academic profile of nurses and midwives who completed the education preparation programme for prescribers. The second section evaluates the extent to which course participants changed in capabilities related to prescribing as a consequence of the programme. The prescribing capabilities evaluated included: professional accountability and responsibility in prescribing; legal and ethical aspects of prescribing; principles of the prescribing process; collaboration with other health care professionals in relation to prescribing practice and; overall ability to prescribe as a consequence of the educational programme. The measured capabilities were based on the domains outlined in the document *Requirement and Standards for Education Programmes for Prescriptive Authority* (An Bord Altranais 2007). These domains were used to develop an educational evaluation questionnaire entitled the *Prescribing Course Outcomes Evaluation Questionnaire* (PCOEQ) specifically for this study.

The second section of this chapter evaluates course participants' perceptions of the quality of their Certificate in Nursing (Nurse/Midwife Prescribing) educational programme. This section reports on the results of participants' experience of teaching, assessment, preparation for prescribing practice, workload, mentor support, organisation of the programme and overall satisfaction. The questionnaire for this phase of the study was entitled the *Prescribing Course Experience Questionnaire* (PCEQ).

### 5.2 Demographic, Professional and Academic Profile of Course Participants

A total of 138 nurses and midwives who had completed the prescribing educational programme were surveyed, 102 responses were received resulting in a response rate of 73.9%. The respondents represented the first, second and third cohorts who had completed the education preparation programme at either the School of Nursing, Royal College of Surgeons in Ireland or the School of Nursing and Midwifery, University College Cork. The vast majority of the sample (88.5%) were female with just over a tenth (11.5%,  $n = 16$ ) male. The mean age of the

sample was 40.80 years ( $SD = 7.50$ ) and respondent's ages ranged from 25 years to 63 years. Course participants had, on average, been qualified for 19.10 years ( $SD = 7.37$ ) and length of time qualified ranged from 3 years to 35 years. The majority of the sample were at clinical nurse specialist (31.9%) or advanced nurse practitioner (29.8%) grades. A fifth were at clinical nurse manager grade 2 with the remainder at clinical nurse manager grade 1, clinical nurse manager grade 3, staff nurse or other grades (see figure 5.1).

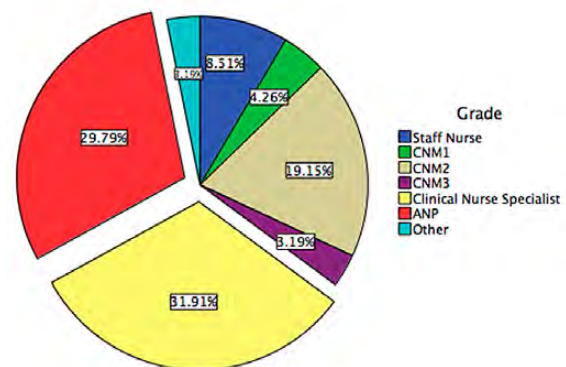


Figure 5.1 Clinical Grade of Course Participants

Over half the sample (55.5%) had achieved a master's degree as their highest academic qualification with just under a quarter completing studies at bachelor's level and a fifth achieving a higher or postgraduate diploma. The remainder identified either certificate, diploma or PhD as their highest level of academic qualification (see figure 5.2).

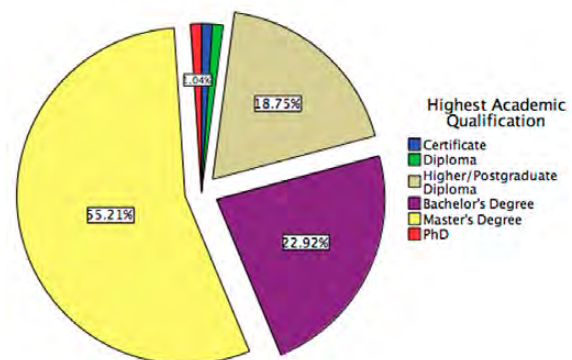


Figure 5.2 Highest Academic Qualification Held by Course Participants

### 5.3 Evaluation of Course Participant's Level of Change as an Outcome from the Educational Preparation Programme

This section of the evaluation measures course participants' self-reports of change in their ability to both understand and use the principles of prescribing in their professional practice as a result of their education preparation programme. Based on the *Requirements and Standards for Education Programmes for Prescriptive Authority* (An Bord Altranais 2007b) and using the retrospective pretest method course participants were asked to rate their understanding and ability in a number of areas related to the content delivered on the programme. The aim of this was to estimate the extent to which nurses and midwives gained in prescribing capabilities as a consequence of their prescribing preparation programme.

Table 5.1 indicates that on all items course participants had positively changed in their ability and understanding from the time they commenced the programme to the end of the programme. The areas in which participants indicated that they had the highest level of ability following completion of the programme related to an understanding of accountability and responsibility related to prescribing practice, the ability to provide advice to patients/clients about the side effects of medications and the ability to provide patients with education and preventative healthcare advice regarding medicinal products. Although prescribers identified that they gained in all aspects of the course, the lowest rated areas of ability at the end of the programme related to understanding of applied biosciences for prescribing practice, understanding of the psychology of prescribing and understanding of cultural differences in prescribing practice.

The areas of the course in which participants reported statistically significant change<sup>16</sup> included the development of understanding of the An Bord Altranais regulatory framework associated with prescribing, an understanding of prescribing legislation, legal liability and clinical indemnity for prescribing practice and the development of the ability to write a prescription. Course participants also made significant gains in their understanding of pharmacotherapeutics, pharmacodynamics, pharmacokinetics and pharmacology. For example, when respondents were asked to think back and rate their ability in pharmacology at the beginning of the programme their mean score, on a scale of 1 to 7 was 3.87 (SD = 1.69); following the programme their self-reported ability in pharmacology had risen, on the same scale, to a mean of 5.85 (SD = 1.02). Large gains were also made in prescribers' overall ability to prescribe and their understanding of the steps of the prescribing process. The lowest change scores related to prescribers' ability to take a history from a patient/client, the ability to interpret laboratory and diagnostic tests, the ability to integrate non-pharmacological interventions into a treatment plan, the ability to provide patients with education about their medications and the ability to communicate with other health professionals. It should be noted that course participants came to the prescribing preparation programme reporting high levels of ability in these areas. The results presented in table 5.1 show that respondents rated their ability lower at the beginning of the programme on all items than they did at the end of programme. The difference in pre-programme ratings when compared to post-programme ratings was statistically significant. This finding indicated that course participants reported that they had positively changed in ability as a consequence of the programme.

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16 This was calculated by examining the difference between the respondents rating of their ability at the beginning of the programme with their rating of ability at the end of the programme.

Table 5.1 Course Participants' Understanding and Ability in each of the Items within the Prescribing Educational Domains<sup>1</sup>

Domain/Item	Before Programme		After Programme		Wilcoxon z	P
	Mean	SD	Mean	SD		
<b>Professional Accountability and Responsibility</b>						
Understanding of the An Bord Altranais regulatory framework associated with prescribing	3.10	1.80	6.13	1.14	7.25	0.001*
Understanding of accountability and responsibility for prescribing practice	4.42	1.84	6.47	0.80	6.53	0.001*
The ability to self-audit	4.45	1.63	5.78	1.18	6.34	0.001*
Understanding of risk management in prescribing practice	4.17	1.73	5.91	1.14	6.55	0.001*
Understanding of public health issues in relation to prescribing	3.73	1.63	5.46	1.27	6.17	0.001*
Understanding of evidence-based practice in relation to prescribing	4.46	1.79	6.23	0.84	6.59	0.001*
Understanding of clinical governance in relation to prescribing	3.72	1.82	6.24	1.03	6.50	0.001*
<b>Legal and Ethical Aspects</b>						
Understanding of legislation for nursing/midwife practice and medication management	3.56	1.84	6.24	1.03	6.92	0.001*
Understanding of legal liability and clinical indemnity for prescribing practice	3.27	1.82	6.13	1.08	7.06	0.001*
Ability to obtain informed consent from patient/client for treatment	5.13	1.79	6.32	0.90	5.31	0.001*
Understanding of fraud in relation to prescribing	4.07	1.98	5.87	1.40	6.07	0.001*
Understanding of issues relating to substance abuse and dependence related to prescribing	4.51	1.79	5.78	1.28	5.40	0.001*
Understanding of issues related to the licensing of medical products	3.50	1.84	5.83	1.10	7.25	0.001*
Understanding of ethical principles related to the practice of prescribing	3.98	1.74	5.99	0.96	7.06	0.001*
Understanding of documentary practices related to prescribing	4.25	1.72	6.32	0.83	7.11	0.001*
Understanding of the role of the Irish Medicines Board	3.59	1.78	5.86	1.02	7.29	0.001*

<sup>1</sup> Scale scores range from 1 – 7 with higher scores identifying greater understanding and ability.

\*Indicates a statistically significant difference between participants rating after the programme when compared with their retrospective rating before the programme.

Table 5.1 (continued) Course Participants' Understanding and Ability in each of the Items of the Prescribing Educational Domains<sup>1</sup>

Domain/Item	Before Programme		After Programme		Wilcoxon z	P
	Mean	SD	Mean	SD		
<b>Pharmacology and Pharmacotherapeutics</b>						
Understanding of pharmacovigilance	3.87	1.67	5.95	1.11	6.81	0.001*
Understanding of pharmacotherapeutics	3.67	1.61	5.96	0.99	7.07	0.001*
Understanding of pharmacodynamics	3.41	1.66	5.90	1.05	7.06	0.001*
Understanding of pharmacokinetics	3.41	1.75	5.87	1.01	6.99	0.001*
Ability to treat adverse reactions	4.45	1.51	5.85	0.98	6.11	0.001*
Understanding of policy in relation to medication error	5.10	1.66	6.31	0.92	5.80	0.001*
Ability to prescribe for special groups	3.68	1.74	5.90	1.07	7.43	0.001*
Understanding of the psychology of prescribing	3.62	1.65	5.25	1.53	6.04	0.001*
Understanding of applied biosciences for prescribing practice	3.31	1.69	5.37	1.22	6.63	0.001*
Understanding of pharmacoeconomics	3.94	1.74	5.47	1.40	6.04	0.001*
Overall understanding of pharmacology	3.87	1.69	5.86	1.02	6.55	0.001*
<b>Principles of the Prescribing Process</b>						
Understanding of the steps of the prescribing process	3.61	1.89	6.28	0.95	7.36	0.001*
Ability to take a patient history	5.35	1.70	6.33	1.04	4.73	0.001*
Ability to discontinue medication	4.17	1.81	5.82	1.31	6.14	0.001*
Ability to undertake a physical examination of a patient/client	4.67	2.05	6.03	1.20	5.39	0.001*
Ability to interpret laboratory and diagnostic tests	5.28	1.58	6.12	0.88	5.20	0.001*
Understanding of cultural differences in prescribing practices	3.64	1.73	5.01	1.51	5.84	0.001*
Ability to deal with patient/client expectations for prescribing medicinal products	4.03	1.85	5.76	1.08	6.41	0.001*
Ability to apply diagnostic reasoning to prescribing practices	4.55	1.85	6.15	0.96	6.28	0.001*
Understanding of risk vs. benefit ratio in prescribing decisions	4.34	1.70	6.01	1.01	6.65	0.001*
Ability to integrate appropriate non-pharmacological interventions into a plan of care	5.54	1.49	6.29	1.01	4.31	0.001*
Ability to provide patients with education and preventative healthcare advice regarding medicinal products	5.36	1.45	6.34	0.85	5.59	0.001*
Ability to write a prescription	3.47	1.94	6.30	1.20	7.14	0.001*
Understanding of national and local guidelines, policies and protocols for prescribing	3.54	1.76	6.24	1.03	7.20	0.001*
Ability to provide advice to patients/clients about the side-effects of medications	5.09	1.65	6.36	0.94	6.08	0.001*

<sup>1</sup> Scale scores range from 1 – 7 with higher scores identifying greater understanding and ability.

\*Indicates a statistically significant difference between participants rating after the programme when compared with their retrospective rating before the programme.

Table 5.1 (continued) Course Participants' Understanding and Ability in each of the Items of the Prescribing Educational Domains<sup>1</sup>

Domain/Item	Before Programme		After Programme		Wilcoxon z	P
	Mean	SD	Mean	SD		
<b>Collaboration/Referral with other Health Care Professionals</b>						
Understanding of communication skills necessary to foster collaborative relationships with allied health professionals	5.42	1.73	6.24	1.16	4.40	0.001*
Understanding of the role and functions of other healthcare professionals involved in medication management	4.95	1.56	6.21	0.94	6.09	0.001*
Ability to manage conflict with other healthcare professionals involved in medication management	4.62	1.67	5.81	1.16	6.06	0.001*
<b>Overall Ability</b>						
Overall ability to prescribe	3.39	2.04	6.00	1.18	6.82	0.001*
Overall self-confidence in my ability to prescribe medicinal products	3.38	2.00	5.83	1.25	6.53	0.001*

<sup>1</sup> Scale scores range from 1 – 7 with higher scores identifying greater understanding and ability.

\*Indicates a statistically significant difference between participants rating after the programme when compared with their retrospective rating before the programme.

The items that comprise the *Prescribing Course Outcomes Evaluation Questionnaire* (PCOEQ) were summated into five scales that measured course participants' outcomes in five domains including: professional accountability and responsibility, legal and ethical aspects of prescribing, pharmacology and pharmacotherapeutics, principles of the prescribing process and collaboration with other healthcare professionals. Two individual items were also measured, overall ability to prescribe and overall self-confidence to prescribe. The aim of this was to demonstrate how course participants changed in each of these domains overall and to evaluate the effectiveness of the programme in preparing candidate prescribers for professional practice. To aid interpretation the scale scores range from 0 to 100 with higher scores indicating greater ability and understanding in that domain. Table 5.2 and figure 5.3 outlines that in each of the

domains course participants significantly gained in both understanding and ability. The highest area of change was in relation to overall prescribing ability and self-confidence to prescribe followed by an understanding of pharmacology and pharmacotherapeutics and the legal and ethical aspects of prescribing practice. The area of least gain was in relation to collaboration and communication with other health professionals; however it should be noted candidate nurse/midwife prescribers came to the programme with high levels of understanding and ability in this area. Figure 5.3 graphically outlines the extent to which candidates self-reported the extent to which they changed in each of the domains as a result of the preparation programme.



Table 5.2 Course Participants' Understanding and Ability in each of the Prescribing Educational Domains<sup>1</sup>

Domain	Before Programme		After Programme		Paired Sample t-test	P
	Mean	SD	Mean	SD		
Professional Accountability and Responsibility	55.95	19.57	83.27	14.19	11.71	0.001*
Legal & Ethical Aspects of Prescribing	48.85	22.67	84.21	14.45	13.24	0.001*
Pharmacology and Pharmacotherapeutics	45.47	20.64	81.05	12.95	14.23	0.001*
Principles of the Prescribing Process	56.46	22.47	84.86	12.75	12.10	0.001*
Collaboration/Communication with other Health Care Professionals	64.19	23.46	84.48	16.40	8.22	0.001*
Overall Ability to Prescribe	39.78	33.96	83.33	19.81	10.85	0.001*
Overall Self-confidence to Prescribe	39.71	33.34	80.50	20.83	10.36	0.001*

<sup>1</sup> Scale scores range from 0 – 100 with higher scores identifying greater understanding and ability.

\*Indicates a statistically significant difference between participants rating before the programme when compared with their retrospective rating after the programme.

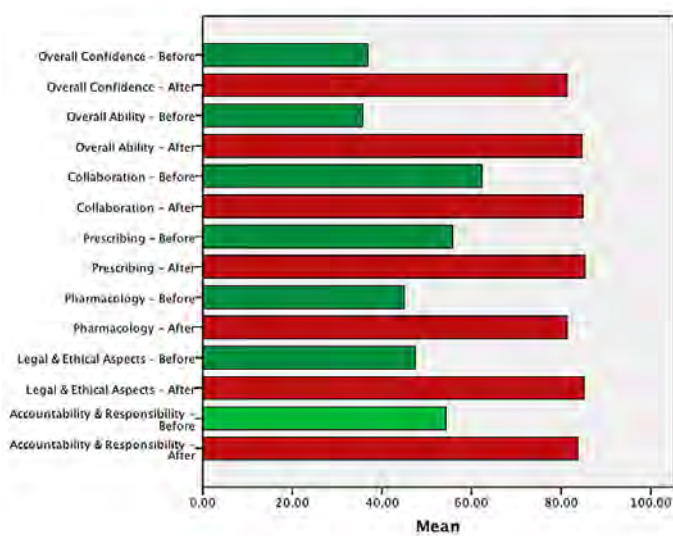


Figure 5.3 Course Participants' Ratings of their Understanding and Ability in each of the Prescribing Domains Before and Retrospectively After the Educational Programme

## 5.4 Nurse/Midwife Prescribers' Experience of their Course of Study

This section reports on the results of the *Prescribing Course Experience Questionnaire* (PCEQ) that was used to evaluate course participants' perceptions of the quality of the courses they completed at either the Royal College of Surgeons in Ireland or University College Cork and the extent to which they developed a number of prescribing related capabilities. The results in this section are reported in relation to graduates' perceptions of the quality of teaching, the appropriateness of assessment, preparation for prescribing practice, the appropriateness of workload, support received from their prescribing mentor, the organisation of the course (clear goals and expectations), infrastructure, and course participants' overall satisfaction with their prescribing preparation programme (see table 5.3).

The results are firstly presented in relation to the individual items that comprise the PCEQ and then in relation to each of the summated scale scores. For ease of interpretation overall agreement on each item is reported by combining 'disagree' and 'strongly disagree' categories into a 'percentage disagreement' category and the 'agree' and 'strongly agree' categories into a 'percentage agreement' category. No opinion or uncertain categories are omitted.

Overall course participants were satisfied with the quality of teaching on the prescribing programme with the majority in agreement that the teaching staff were good at explaining things (60.4%) and that they made their subjects interesting (56.0%). There was however variability in course participants' reported satisfaction with the level of comments and feedback received on their work. Approximately forty- percent disagreed that teaching staff commented on their work with a third in general disagreement that they had received feedback on their progress throughout the programme.

Course participants reported high levels of satisfaction with the assessment process used throughout the prescribing programme. The vast majority of students were in agreement that they understood the requirements for the examinations of the course (83.7%), eighty per cent also reported that the examination of their assessments was completed in a reasonable time. Course participants were also highly satisfied with the assessment of the clinical (72.0%) and theoretical (69.2%) components of the programme. The vast majority of course participants reported that they were satisfied that the assessments did not rely solely on testing memory or recall but facilitated the candidate prescribers to understand the subject matter being examined.

In relation to the specific assessments used to assess competency and capability for prescribing practice the vast majority were satisfied with the examination of the case study (82.4%), the reflective portfolio (71.1%) and the Objective Structured Long Examination Record (OSLER) (65.6%). Although the majority of course participants were satisfied with the examination of the pharmacology and prescribing module (59.2%) over a third expressed some level of dissatisfaction with this particular assessment. The majority of respondents were in agreement (80.6%) that the examination of their assessments had been completed within a reasonable timeframe.

The majority of course participants were in agreement that the prescribing preparation programme had prepared them to prescribe, to plan their prescribing work and to work as a member of a prescribing team. However, while fifty-seven per cent of prescribers were in agreement that they had developed the appropriate knowledge, skills and competencies to prescribe medicinal products in their specific area of clinical practice, over a third disagreed

that they had been sufficiently prepared in this area of prescribing. A number of course participants commented negatively on the level of pharmacological education they received in relation to their specialist area of practice in written qualitative comments.

There was variability in levels of satisfaction on the appropriateness of the workload experienced by course participants. Although the majority (53.3%) disagreed that overall the workload was too heavy, two-thirds reported that there was a lot of pressure to do well in the course with fifty-eight per cent reporting that the volume of work to be completed meant that it could not be thoroughly comprehended. In addition to the survey data a number of respondents commented in the open-ended section of the questionnaire on their experience of the workload. The majority of the comments highlighted the difficulty in covering the programme over a six-month period. Two-thirds of respondents also highlighted in the survey that there was pressure to do well.

The vast majority of course participants were in agreement that they had received support from their medical practitioner mentor throughout their course of study. High levels of satisfaction were evident in that over eighty per cent reported that they had access to the support they needed from their mentor. Course participants were also in agreement that their medical practitioner mentor had provided them with suitable learning opportunities, communicated effectively with them and provided helpful feedback on their progress. Over seventy-eight per cent of respondents' expressed overall satisfaction with the mentoring process (see figure 5.4).

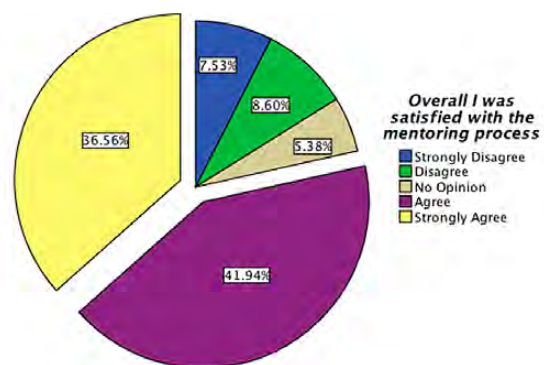


Figure 5.4 Course Participants' Overall Levels of Satisfaction with the Mentoring Process

Course participants expressed variability in relation to the levels of satisfaction with aspects related to the organisation of their prescribing programme. Forty-three per cent of respondents disagreed with the statement 'It was always easy to know the standard of work expected' with over a third in agreement. There was also variability in relation to responses to the item: 'It was often hard to discover what was expected of me in this course' with a third in agreement compared to forty-three percent disagreeing. However, approximately two-thirds of respondents agreed that the staff made it clear what they expected from students on the course and that they knew what was expected from them on the course.

Three items were used to measure course participants' levels of satisfaction with the structural aspects of the programme. Two items measured their perceptions of the length of the programme. Approximately ninety

per cent of the sample disagreed that the course was too long however respondents were evenly split in relation to the course being too short with forty-seven per cent in agreement compared to forty two per cent in disagreement. The majority of candidate prescribers (68.8%) expressed satisfaction with the financial support they received for the course with approximately a fifth disagreeing that it was appropriate. A number of respondents provided written comments on the length of the programme with the general consensus that the time afforded the course was too short to cover all aspects of the programme; this finding was also found when measuring respondents perception of workload (see above). A number of respondents were of the opinion that the content would be better served if it had been presented over an academic year.

Table 5.3 Course Participants' Responses to the Items on the PCEQ\*

Item Number	PCEQ Item	Percentage Disagreement %	Percentage Agreement %
<b>Good Teaching</b>			
27	The teaching staff made a real effort to understand difficulties I might be having with my work	19.6	51.1
28	The teaching staff were extremely good at explaining things	23.1	60.4
30	The teaching staff of this course motivated me to do my best work	15.1	45.2
31	The teaching staff worked hard to make their subjects interesting	15.1	56.0
38	The teaching staff normally gave me helpful feedback on how I was doing	32.3	41.9
21	The teaching staff put a lot of time into commenting on my work.	38.9	33.3
<b>Appropriate Assessment</b>			
1	The theoretical aspects of the prescribing examination process were fair	23.1	69.2
2	The clinical aspects of the prescribing examination process were fair	18.3	72.0
9	I understood the requirements for the examinations of the course	12.0	83.7
13	I was satisfied with the examination of the pharmacology and prescribing module	34.4	59.2
14	The examination of my assessments was completed in reasonable time	14.0	80.6
15	I was satisfied with the examination of my case study	6.6	82.4
16	I was satisfied with the Objective Structured Long Examination Record (OSLER) assessment	18.9	65.6
17	I was satisfied with the assessment of my reflective portfolio	14.4	71.1
18	I was satisfied with the assessment related to my Collaborative Practice Agreement	10.8	59.0
22	To do well in this course all you really needed was a good memory.	72.0	18.3
29	Too many course staff asked me questions just about facts	58.2	2.2
37	The staff seemed more interested in testing what I had memorised than what I had understood	50.5	21.5

\*No opinion are omitted

Table 5.3 (continued) Course Participants' Responses to the Items on the PCEQ\*

Item Number	PCEQ Item	Percentage Disagreement %	Percentage Agreement %
<b>Preparation for Prescribing Practice</b>			
3	The course prepared me to prescribe	11.9	78.5
10	The course helped me develop my ability to plan my prescribing work	18.3	58.1
25	The course helped me develop my ability to work as a member of a prescribing team	16.1	65.6
36	The course equipped me with the appropriate knowledge, skills and competencies to prescribe medicinal products in my specific area of clinical practice	35.5	57.0
<b>Workload</b>			
4	The workload was too heavy	53.3	38.1
26	I was generally given enough time to understand the things I had to learn	29.0	52.7
32	There was a lot of pressure on me to do well in this course	17.2	64.5
34	The sheer volume of work to be got through in this course meant that it couldn't all be thoroughly comprehended	34.4	58.1
<b>Mentor Support</b>			
5	I had good access to the supervisory support I needed from my medical practitioner mentor	14.0	81.7
7	My medical practitioner mentor provided suitable learning opportunities	16.1	79.6
8	Overall I was satisfied with the mentoring process	16.1	78.5
11	My medical practitioner mentor provided helpful feedback on my progress	20.4	69.9
12	My medical practitioner mentor communicated effectively with me	15.2	78.3
19	My medical practitioner mentor made a real effort to understand the difficulties I faced	18.3	62.4
35	My medical practitioner mentor provided additional research/resources relevant to my prescribing practice	46.2	38.7
<b>Organisation of the Programme (Clear Goals and Expectations)</b>			
6	The staff made it clear right from the start what they expected from students	21.8	64.2
20	I had a clear idea of where I was going and what was expected of me on this course	19.4	67.8
39	It was always easy to know the standard of work expected	43.0	33.3
40	It was often hard to discover what was expected of me in this course	43.0	35.5
<b>Infrastructure</b>			
23	The course was too long	88.2	4.3
33	The course was too short	47.3	42.0
24	There was appropriate financial support during the course	18.3	68.8
<b>Overall Satisfaction</b>			
41	Overall I was satisfied with the prescribing preparation course	31.2	61.3

\*No opinion are omitted

The majority (61.3%) of course participants were satisfied overall with the prescribing preparation programme; however approximately a third expressed some form of dissatisfaction (see figure 5.5).

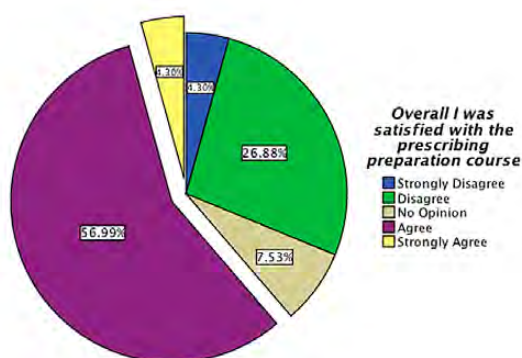


Figure 5.5 Course Participants' Overall Levels of Satisfaction with the Prescribing Preparation Programme

The items that comprise the PCEQ were summated into six scales that measured course participants' overall experiences of teaching, workload, organisation of the programme, preparation for prescribing practice, appropriate assessment, satisfaction with the assessment process and mentor support (table 5.4). One single item measured overall satisfaction with the programme of study. To aid interpretation and standardise scores across the PCEQ the mean item scores in table 5.4 are based on a linear transformation where the scores have been recoded to range from -100 to +100. Positive values indicate satisfaction within that domain whereas negative values indicate dissatisfaction.

Table 5.4 Mean Scores of the Prescribers' Course Experience Questionnaire\*

Scale	Minimum	Maximum	Mean	SD
Good Teaching	-50.00	+100.00	14.68	31.99
Appropriate Assessment - Overall	-50.00	+100.00	27.11	29.26
Appropriate Assessment – Individual Components	-57.14	+100.00	29.65	31.76
Clear Goals and Expectations	-87.50	+100.00	13.04	38.42
Workload	-87.50	+100.00	-9.24	40.72
Preparation for Prescribing Practice	-87.50	+100.00	26.47	38.43
Mentor Support	-100.00	+100.00	34.96	38.42
Overall Satisfaction	-100.00	+100.00	15.05	52.53

\*Scores range from – 100 to + 100. Positive scores indicate levels of agreement; negative scores indicate levels of disagreement.

The mean scale scores identified that course participants were highly satisfied with the support received by mentors followed by satisfaction with the assessment process of the prescribing programme. Participants also identified that they were positive in relation to their preparation for prescribing practice. Although the mean scores for the organisation of the programme (clear goals and expectations), and good teaching scales were rated relatively lower, they were still rated positively by students as was their level of overall satisfaction with the programme of study; however there was greater variability in the overall satisfaction score indicating a relatively wide-range of attitudes to the overall quality of the programme. The high score on the mentoring scale identified that course participants were of the opinion that they had been well supported by their medical practitioner mentor throughout their programme of study. High scores reported on the appropriate assessment scale indicated that graduates were of the opinion that they were assessed less on the recall of factual knowledge and more on what they understood. The lowest and only negatively rated score reported by course participants was on the appropriate workload scale. This finding indicated that nurses and midwives who had completed

the prescribing preparation programme were of the opinion that the volume of work on the course meant it could not all be thoroughly comprehended in the time allocated and that there was a lot of pressure on them throughout the programme. A graphic representation of the course participants' responses on each of the domains is outlined in figure 5.6.

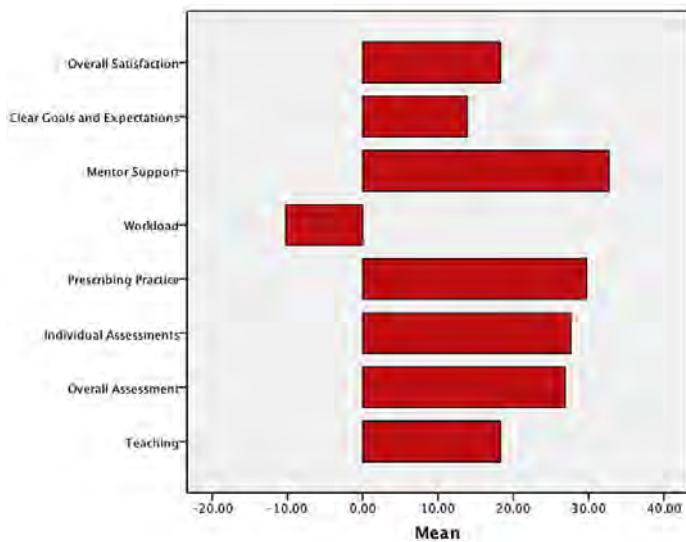


Figure 5.6 Mean Scores on the Scales of the PCEQ (Scores range from – 100 to + 100. Positive scores indicate levels of satisfaction; negative scores indicate levels of dissatisfaction)

### 5.5 Course Participants' Experience of their Selection for the Prescribing Preparation Programme

The central reason for the selection of candidates for the nurse prescribing preparation programme was the identification of a service need by the Director of Nursing/Midwifery and/or the candidate themselves. A number of respondents provided written comments outlining the rationale for applying for the course including a perception that it would enhance patient care, the desire to extend practice, to enhance their professional development and to develop the capacity to provide holistic care to patients. Respondents working at advanced practice level in particular highlighted that applying for the nurse/midwife prescribing preparation programme enabled them to complete their specialist

role in nursing and midwifery. A respondent commented that one of the main barriers in their nurse led clinic had been their inability to prescribe; therefore this had motivated them to apply for the programme. The vast majority of candidates (87.2%) were satisfied with the selection process for the preparation programme with approximately twelve per cent expressing some level of dissatisfaction. Reasons for dissatisfaction included the short timeframe between being notified that they had been accepted on the course and commencing the course, difficulties in obtaining the support from consultants and Directors of Nursing/Midwifery, difficulties in negotiating study leave and negative attitudes from nursing colleagues when applying.

### 5.6 Candidate Prescribers' Experience of the Registration Process with An Bord Altranais following Completion of the Prescribing Preparation Programme

The majority (86.8%) of candidate prescribers were satisfied with the process to become a Registered Nurse Prescriber with An Bord Altranais; only a tenth expressed a level of dissatisfaction with the process. The main reason for dissatisfaction with the process was related to a fee increase of which applicants felt they were not adequately informed. Over ninety per cent were satisfied with the length of time it took their registration application to be processed by An Bord Altranais.

### 5.7 Conclusion

At the time of the evaluation the prescribers surveyed had on average twenty years of clinical experience. Nurse/midwife prescribers surveyed had a high level of academic qualifications with over half of the sample identifying a master's degree as their highest academic award. Course participants reported that they had gained in understanding and ability in a number of key areas as a consequence of their prescribing preparation programme not least in areas related to accountability, legislation, pharmacology and applying the prescribing process to professional practice. Course participants tended not to substantially change in areas in which they had extensive experience prior to commencing the prescribing programme; these areas included history taking, patient education and communication; however they continued

to make gains in these areas as a consequence of the programme. Course participants made substantial gains in each of the five educational domains of the prescribing programme. The greatest gains were made in overall prescribing ability and self-confidence to prescribe, an understanding of pharmacology and pharmacotherapeutics and an understanding of the legal and ethical aspects of prescribing practice. The majority of course participants were satisfied with the quality of teaching on their education programme, especially in relation to the levels of explanation received. There was however some variability in satisfaction at the level of feedback received by participants. The assessment process was also highly rated by candidate prescribers with levels of satisfaction around seventy per cent for both the theoretical and clinical assessment processes used in the programme. Respondents also reported that the programme had prepared them for prescribing practice, however a number of participants were dissatisfied with the level of preparation they received for their particular area of specialist practice. There was variability in respondents' perception of the workload throughout the course and it was the only domain that was rated negatively overall. The main issue was the volume of work to be comprehended throughout the course. The most positive aspect of the prescribing programme expressed by course participants was the level of support they received from their medical practitioner mentor. Participants were highly satisfied with the level of access, learning opportunities, communication and feedback received from mentors throughout their mentoring process. Course participants generally perceived the preparation programmes to be well organised however there was some variation in respondents' understanding of the level of work expected of them throughout the course.

In conclusion the educational preparation programmes, guided by the *Requirements and Standards*, provided students with a broad range of educational experiences in the area of prescribing practice. It is evident that the education delivered through these programmes had a positive impact on student learning and led to substantial change in course participants' ability to prescribe. It is also evident from the findings that course participants, overall, received a quality educational experience and that students were generally satisfied with the organisation and delivery of the prescribing preparation programmes.

## 5.8 Summary: Profile of Prescribers

- The average length of time a nurse/midwife prescriber was qualified was approximately twenty years.
- The majority of nurse/midwife prescribers at the time of the study were at Clinical Nurse Specialist (CNS) or Advanced Nurse Practitioner (ANP) grades.
- Over half of all nurse/midwife prescribers surveyed have been educated to master's level.

## 5.9 Summary: Key Findings from the Evaluation of the Educational Preparation Programme for Prescribers

- Course participants indicated that they had positively developed understanding and ability in all areas of prescribing practice as a result of their course.
- The highest rated outcomes from the course included course participants' understanding and ability in relation to accountability and responsibility related to prescribing practice, the ability to provide advice to patients and clients on the side-effects of medications and the provision of education to patients on medicinal products.
- The lowest rated outcomes included understanding of applied biosciences for prescribing practice, understanding of the psychology of prescribing and understanding of cultural differences in prescribing practices.
- Areas of the programme in which participants reported the greatest level of change included an understanding of the An Bord Altranais regulatory framework associated with prescribing, an understanding of legislation, legal liability and clinical indemnity for prescribing practice and the development of the ability to write a prescription, understanding of pharmacotherapeutics, pharmacodynamics and pharmacokinetics, and their understanding of the steps of the prescribing process.
- Substantial gains were made in course participants overall ability to prescribe and their self-confidence in prescribing medicinal products.

- Course participants also increased their ability in pharmacology and pharmacotherapeutics and the legal and ethical aspects of prescribing practice as a consequence of the educational programme.
- Overall students were satisfied with the quality of teaching, assessment and organisation of their prescribing preparation programme.
- There was variability in the extent to which course participants' were satisfied with the level of comments and feedback received on their work.
- High levels of satisfaction were reported for both the theoretical and clinical assessments used on the course.
- There were levels of dissatisfaction with the workload experienced by candidate prescribers during the programme.
- Course participants reported that the programme had comprehensively prepared them for a prescribing role.
- The highest levels of satisfaction were associated with the support received by candidate prescribers from their medical practitioner throughout the course.
- Overall the majority of course participants expressed satisfaction with the quality of the prescribing preparation programme.



# Chapter 6

## Audit of Nurse/Midwife Prescribing

### 6.1 Introduction

The safe and appropriate use of medicines is of critical importance for patients and essential for the efficient use of health care resources. This chapter describes the results of an audit of nurse/midwife prescribers' prescriptions and consultations, the overall aim being to evaluate the safety and clinical appropriateness of prescribing by Registered Nurse Prescribers (RNPs). The method used in this phase of the evaluation entailed a documentary audit of a random sample of prescriptions and associated consultations of 142 patient records from 8 clinical sites.

This chapter initially explores the background to the audit, which includes an overview of the organisations, nurses/midwives, patients and drug profiles audited. This is followed by a discussion of the audit of prescribing safety under three distinct but related areas: patient consultation, prescription writing and finally the safety and clinical appropriateness of the medicines prescribed including an evaluation of patient outcomes.

### 6.2 Aims and Objectives of the Audit

The aim of this audit was to evaluate nursing practice in relation to the clinical assessment of patients, selection of medication and clarity of prescribing instructions.

Objectives:

- To evaluate the accuracy and comprehensiveness of nurse/midwife prescribers' documentation in relation to patient assessment, diagnosis and rationale for prescribing.
- To evaluate the accuracy and comprehensiveness of nurse/midwife prescribers' written prescriptions.
- To evaluate the appropriateness of nurse/midwife prescribing using the *Medication Appropriateness Index*.
- To evaluate patient safety outcomes in relation to nurse/midwife prescribing through an examination of hospital records.

### 6.3 Overview of Organisations Audited

In January 2009, at the commencement of the evaluation, there were 23 organisations with registered nurse/midwife prescribers; two organisations were excluded because nurse/midwife prescriber anonymity could not be guaranteed. Forty percent (8/20) of eligible hospitals were audited. Hospitals were selected to ensure representation from the range of institutes with active registered nurse prescribers, these included three academic teaching hospitals, four non-academic teaching hospitals and two specialist hospitals.

### 6.4 Nurses/Midwives Audited

Twenty five nurse/midwife prescribers were included in the audit, this represented 81% (25/34) of registered nurse/midwife prescribers from eight hospitals, and 44% (25/57) of all registered nurse/midwife prescribers in practice at the time of the evaluation. Nine nurses/midwives from these sites were not included in the audit due to illness or maternity leave (n=6), they were prescribing for less than a month (n=1), or their prescribing role was too specialist (n=2). The nurses/midwives included in the audit worked in fourteen different specialist areas; these areas cannot be individually identified, as it would compromise the anonymity of the prescribers (in many instances they may be the only nurse/midwife prescriber nationally employed in a particular specialist area).

The largest homogenous group of nurse/midwife prescribers worked in Emergency Departments (16%, 4/25), maternity related areas accounted for 32% (8/25), nurses specialising in a single condition and who ran their own outpatient clinics accounted for 36% (9/25), the remaining nurses (16%, 4/25) worked in a variety of roles within the acute hospital setting and their prescribing mainly related to symptom management. The audit involved 142 patient records and related to 208 drug items prescribed by RNPs; the majority of prescriptions concerned the management of patients with a chronic disease (Figure 6.1).

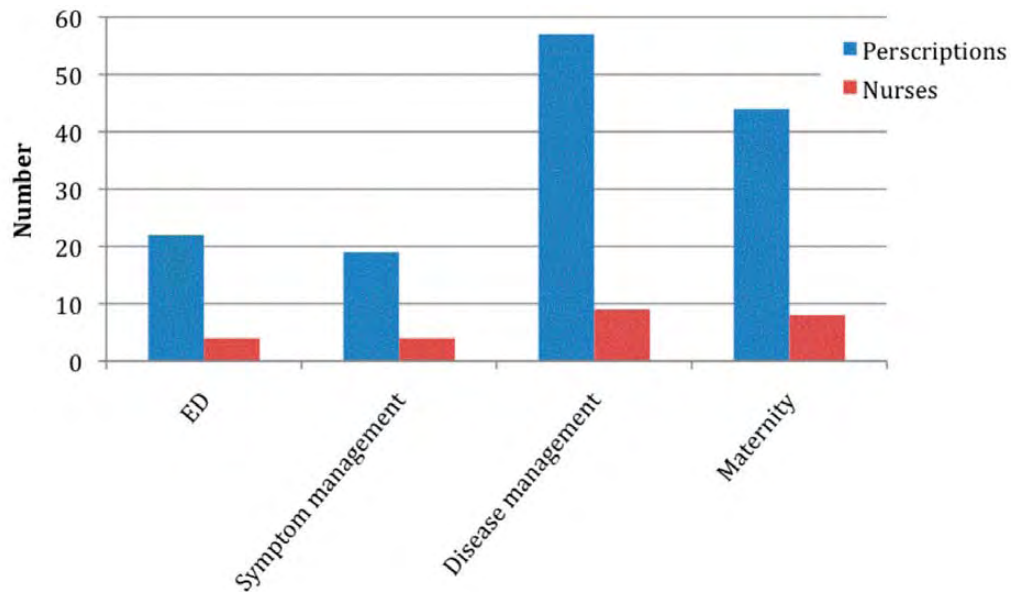


Figure 6.1 Areas RNPs Prescribing and Number of Prescriptions

All nurses/midwives operated within the broad framework of a consultant physician led service, however within this framework nurse/midwife prescribers' operated within two distinct contexts in terms of autonomy and independent patient management.

Group I: the largest group of nurse/midwife prescribers' (56%, 14/25), reviewed patients independently of other medical professionals, either in outpatients, community or Emergency Department settings. Many, but not all, of these nurses held Advanced Nurse/Midwife Practitioner or Clinical Nurse/Midwife Specialist posts. There were a small number of episodes where these nurses liaised with a doctor on a particular patient issue but retained overall responsibility for prescribing and patient management. Group II, (44%, 11/25) operated within a continuum of care delivered to a patient over a number of hours or days; the nurse/midwife prescribers' consultation was one of a number of other consultations during a particular episode of care. This group of nurse/midwife prescribers did not have a distinct patient caseload for which they had primary responsibility but reviewed and prescribed for patients in conjunction with medical doctors. They prescribed mainly for the relief of symptoms such as pain or antibiotic prophylaxis in the maternity setting.

Each nurse/midwife was asked to select and submit between 5 to 8 randomly selected patient charts with the associated prescription record for audit. In total 159 patient charts were submitted by 25 nurse/midwife

prescribers. Seventeen charts were excluded from the audit for the following reasons: 6% (10/159) of charts were too specialised, and 4% (7/159) of charts had no RNP prescription record, although the *Nurse and Midwife Prescribing Data Collection System* indicated that prescriptions had been written for these patients. The majority (72%) of nurses/midwives were able to supply the minimum of five charts that contained a prescription written by the nurse/midwife prescriber. However 28% (7/25) of nurse/midwife prescribers were unable to provide the minimum number of charts. This was due to low levels of prescribing by the nurse/midwife, inability to obtain the correct patient chart from medical records or the chart submitted did not contain a record of the prescription.

### 6.5 Profile of Patient Records Audited

In total 142 patient records, which contained evidence of RNP prescribing, were audited. A broad cross-section of patients were represented; the mean age was 45 years (SD 18.9), the youngest patient was aged 9 years and oldest was 93 years. Approximately two thirds of the sample was female (67%, 95/142); this reflects the inclusion of maternity units in the audit, males accounted for 33% (46/142) of the sample. The majority of patients (40%) presented for the management of chronic illnesses including diabetes mellitus, cardiac or dermatological conditions (figure 6.2).

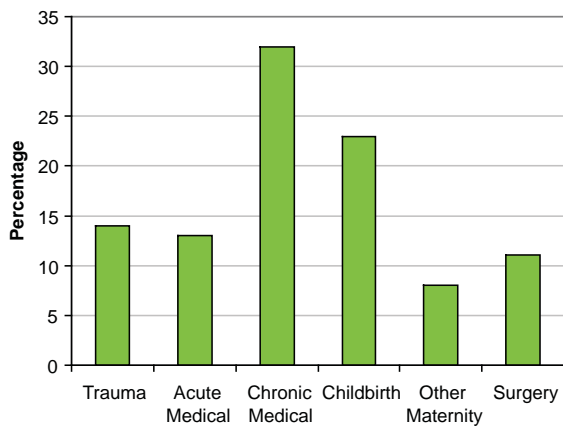


Figure 6.2 Reason Patients Presented for Treatment

## 6.6 Drugs Prescribed

Two hundred and eight drug items were prescribed for the 142 patients included in this audit. The majority of patients, 58% (83/142), were prescribed a single drug item, 38% (54/142) received two drug items, 3% (5/142) of patients received 3 or more items in a single prescription.

The most frequent reason a drug was prescribed was for the management of pain. This occurred across a diverse range of settings including ED, surgery and maternity. Medications were also prescribed for prophylactic reasons. The prescribing of drugs for prophylaxis mainly concerned prescribing of Benz-penicillin in the maternity

setting. The maternity units audited had defined protocols for the prescribing of this antibiotic which was used to prevent infection following prolonged rupture of membranes. Other examples of prophylaxis prescribing concerned the prescribing of antiemetics in conjunction with opiate analgesia such as pethidine (figure 6.3).

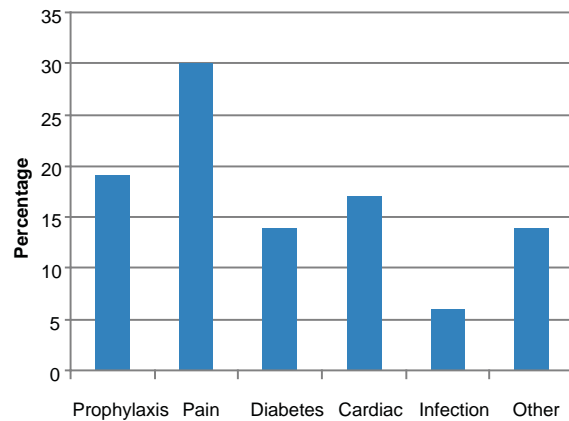


Figure 6.3: Reasons why Drugs were Prescribed

The most frequently prescribed individual drug class was antibiotics and non-opiate analgesia. However, when non-opiate, opiate and non-steroidal anti-inflammatory (NSAIDs) drugs were combined, analgesia related medication was the largest group (31%) of drugs prescribed. The most frequently prescribed antibiotic was Benz-penicillin, other antibiotics included flucloxacillin and trimethoprim.

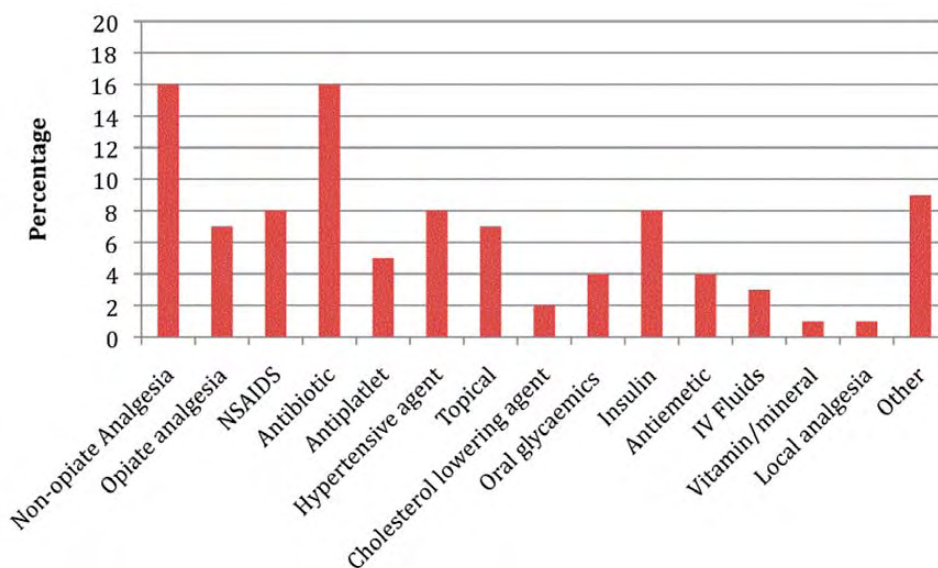


Figure 6.4 Type of Drugs Prescribed

## 6.7 Audit of Safety

### 6.7.1 Audit of Nurse/Midwife Prescribers' Patient Consultations

The patient consultation is the essential element in an episode of care that results in the decision to prescribe or not to prescribe a medication. Despite the paramount importance of this element in an episode of care there is a lack of clarity regarding the specific information a nurse/midwife prescriber is expected to record prior to prescribing medication. It is also unclear whether all prescribing by an RNP should be preceded by documented evidence of a patient consultation.

An Bord Altranais (2007c) in its document *Decision-Making Framework for Nurses and Midwife Prescribers* contains the only direct reference to the consultation process:

*Has there been an assessment of the patient/ service-users needs? Assessment to include physical examination, history taking (including medication), clinical diagnostic decision.*

In the document Practice Standards for Nurses with Prescriptive Authority (An Bord Altranais 2007e), Practice Standard 8, Communication and Documentation, provides general principles for documentation but lacks specificity regarding the consultation documentation. Similarly the HSE document *An Introduction to Audit of Nurse and Midwifery Prescribing* (2008) does not contain any reference to audit of the consultation process.

This study used the consultation audit template developed by Latter *et al.* (2005) to evaluate the consultation process. The audit tool contained 21 items and represents the maximum level of detail a consultation could contain. However this tool assumes that nurse/midwife prescribers work in a homogenous environment with homogenous caseloads. This was clearly not the case; two distinct groups of RNPs were recognisable in terms of their role definition and operating practice. Group I operated independently, reviewing and prescribing for patients without direct medical input whereas Group II review and prescribe for patients in conjunction with medical practitioners.

The context within which the nurse/midwife operated influenced the depth of information contained in

the consultation and for the purpose of this analysis consultations are stratified into two categories:

- 1) Full Consultation- independent autonomous patient consultation and prescribing by RNP.
- 2) Continuum of Care Consultation- the consultation and prescribing were part of a wider patient evaluation and treatment plan.

There was an expectation that a greater level of information and detail would be contained in consultations associated with independent review and prescribing by nurse/midwife prescribers. Nurses/midwives in Group I carried out the majority of these consultations. In contrast continuum of care consultations were generally entered following patient 'clerking' by a medical practitioner and the repetition of the same information in a nurse/midwife prescriber's consultation would be an unnecessary duplication. However, within these broad classifications there was individual variability (see table 6.1). This aspect of the audit involved the review of 142 patient charts, however 6% (9/142) of charts contained no documented evidence of direct nurse/midwife prescriber consultation and were excluded leaving 134 charts. All but one nurse/midwife prescriber recorded their prescribing consultation in the clinical record section of the patient notes (alongside medical entries). All nurse/midwife prescriber entries contained a signature but in a small number of cases this was not always legible or readily recognisable as an RNP entry.

### 6.7.2 Consultation Legibility

The majority (86%) of documented consultations were hand written with good legibility, with 14% deemed to have fair or poor legibility. Legibility was a subjective interpretation on the part of the researchers and related to the difficulty and time taken to decipher handwriting. In two instances Photostat copies of original documents were used as the record in the patient chart. This practice reduced the legibility of records and could potentially impact on safe communication regarding patient treatment and audit of practice. One nurse/midwife prescriber utilised a specifically developed computer based system to record consultations. This system provided a detailed and clear record of the patient's consultation, medical history and ongoing treatment plan.

### 6.7.3 Full Consultation

Full consultations by RNPs were documented in 43% (58/134) of charts. The level of detail recorded varied across nurse/midwife prescribers and partly reflected the diverse areas and patient case-mix; for example some patients made repeat visits every few weeks or months for chronic illness management while others made single visits to the ED. Consultations varied in length from half a page to 1-2 pages. The most consistently recorded information was 'Date of Consultation' (over 97% complete), followed by presenting symptom (93%), final diagnosis/reason for prescription (95%) and action plan (96%).

A number of areas were less complete and included: patient's primary condition or reason for presentation (completed in 84% of audited charts). Examples of missing information included: type of diabetes, reason for attendance at specialist clinics, number of days since a significant event (e.g. birth of a baby). Patient age (16%) and gender (24%) was also missing in a number of consultations. This information sets the context in which the consultation takes place and clearly identifies the purpose of the visit from other adjacent medical entries.

Other information inconsistently recorded included time of consultation, record of current medication and drug allergies. This information was absent in approximately 20%-40% of nurse/midwife prescribers' consultations (it should be noted that drug allergies were usually recorded elsewhere in patient records). Patient review or appointment for follow-up was identified in 68% of consultations. It should be noted that in the case of ED attendances for minor injuries there would not be an expectation of routine follow-up.

Physical examination was recorded in 77% of consultations by the RNP; when carried out these tended to be very detailed especially in ED consultations. However one area that lacked specific detail was level of pain; pain scores were not routinely recorded though 21% of these consultations resulted in prescriptions for analgesia. Diagnostic tests were ordered and results interpreted in just over 50% of consultations. Areas that were less well recorded included family history, social circumstances and over the counter medication. Information on over the counter medication that the patient may be taking was recorded in 10% of consultations.

### 6.7.4 Continuum of Care Consultations

The majority (58%) of consultations were categorised as 'continuum of care'. They mainly concerned in-patient care but a small number were recorded in out-patient departments. They generally consisted of 2-5 lines of text and contained the minimum of information. The most consistent information recorded was date of consultation (96%) with time of consultation recorded in two-third of entries. The primary condition or reason for presentation was not recorded in 20% of consultations; for example in post-operative management of pain the operation or number of days post surgery was not consistently recorded, similarly patient age and gender were frequently not recorded in the consultation. Presenting symptoms or reason for prescription was recorded in 88% of consultations, however detail provided was minimal for example 38 consultations resulted in a prescription for analgesia, but pain scores were only recorded in 36% (14/38) of these consultations. Record of drug allergies was noted in 73% of consultations. In two instances drug allergies were identified as 'NKDA' (No known Drug Allergies) although drug allergies were recorded elsewhere in the medical record. The recording of other information such as medical history, current medication, and family history was often recorded by doctors during the same admission. However some prescribers indicated they had reviewed the medical history with a comment such as 'history noted'. Again the possibility of 'over the counter' medication use was not considered. Physical examination, when recorded, concentrated mainly on vital signs. It was difficult to generalise on the detail expected in this area as it depends on patient circumstances but on a number of occasions more detail was expected in relation to evidence of chest auscultation for example when prescribing IV fluids, following surgery, use of pain scores and whether or not a mother was breastfeeding. Twenty-eight per cent (21/76) of records had direct evidence of patient follow-up by the nurse/midwife prescriber, however it should be noted in-patients were often reviewed by other nursing/midwifery and medical staff.

Table 6.1 Content of Nurse/Midwife Prescribers' Patient Consultations

	Full Consultation	Continuum of care Consultation	Comment
	N= 58	N= 76	
	% present (n)	% present (n)	
Group 1 (n=14 nurses)	97 (56)	37 (28)	
Group 2 (n=11 nurses)	3 (2)	63 (48)	
<b>Consult legibility</b>			
Good	78 (45)	93 (71)	Poor legibility was generally due to use of Photostat copies
Fair	7 (4)	5 (4)	
Poor	17 (9)	1 (1)	
Date of assessment	97 (56)	96 (73)	
Time of assessment	64 (37)	66 (50)	
Patient age	76 (44)	36 (27)	
Patient gender	84 (49)	64 (49)	
Identifies primary complaint/underlying condition	84 (49)	79 (60)	
Record of presenting symptoms	93 (52)	88 (67)	
Record of duration of symptoms	63 (36)	47 (35)	
Record of past medical history	59 (33)	22 (16)	
Record of current medication prescribed	72 (41)	31 (20)	
Record of over-the-counter medication	10 (6)	5 (3)	
Record of known allergies	60 (35)	73 (56)	Two instances drug allergies were incorrectly recorded
Explores family history	14 (8)	4 (3)	
Record of physical examination	77 (43)	41 (27)	
Record of final diagnosis	95 (48)	51 (39)	
Request diagnostic tests	53 (31)	18 (12)	
Interprets diagnostic tests	54 (30)	24 (16)	
Evidence of treatment/action plan	96 (55)	100 (76)	
Evidence of review/follow-up	68 (38)	28 (21)	
Presence of RNP signature	100	100	

## 6.8 Patient Consultation Summary

There were examples of very detailed and thorough consultation practices which could be utilised as examples of good practice in future nurse/midwife prescribers' education preparation programmes. Equally there were consultations which contained minimal information and prescriptions were issued with no documented evidence of a consultation. In comparison with physician practice this would not be exceptional (many drugs are prescribed without associated consultation documentation). However, some consultations or an absence of documentation fell somewhat short of the An Bord Altranais guidelines:

*Monitoring and documentation are key responsibilities for nurses and midwives in medication management; they incorporate the activities of assessment, planning, implementation and evaluation. These responsibilities require effective and efficient communication with the patient/service-user and other health care professionals involved in her/his care (An Bord Altranais, Practice Standards for Nurses and Midwives with Prescriptive Authority, 2007b).*

## 6.9 Audit of Written Prescriptions

Prescriptions were recorded either in the in-patient drug chart or, if the patient was treated in outpatients, the ED, or being discharged home, on a prescription pad. Inpatient drug charts generally consist of a number of pages bound together as a book. The front cover contained the patient identifying (ID) information and drug allergies, the subsequent pages of the drug chart contained spaces for prescriptions and additional space for patient information such as name and hospital number.

Prescription pads contain 3 carbon copies, the original hand written record is given to the patient, the yellow copy is placed in the patient's medical record and the pink copy remains in the prescription pad. The pad, when complete, is usually returned to the hospital pharmacy. There was a diverse range of prescriptions pads in use across sites. In some areas the RNP had their own unique pad, in others pads were shared between doctors and nurses/midwives; these often had a tick box option to identify the prescriber's professional qualification.

In-patient drug charts were always filed with the patient notes and readily available for audit, however prescription pad copies were not always kept in the patient file. The prescribing nurse either retained these, especially if working in the community or they were lost/not available for audit (n=7).

### 6.9.1 Legibility

All prescriptions were hand written, the use of ink could not be verified in prescriptions written in prescribing pads as only a carbon copy is retained in the patient's notes. Legibility of prescriptions overall was very good; there were only 10 (5%) prescriptions where there was difficulty deciphering the name or dose of the prescribed drug.

### 6.9.2 Patient identification

Patient name, hospital number and/or address were uniformly recorded. Inpatient drug charts generally recorded both address and hospital number using a patient addressograph on the front page of the drug chart. However the patient ID information was frequently not completed on the individual sheets of the drug chart. In the case of outpatient prescription pads the patient name and address were recorded. Date of birth was absent in many outpatient pad prescriptions and ED drug records, as this information was not specifically requested. Date of prescription was complete on all prescriptions audited (see table 6.2).

Table 6.2 Patient Identification Criteria for Nurse/Midwife Prescription Writing

	% Present (n= 141)	Comment
Prescription legible in ink		
Good	93% (131)	
Fair	5% (7)	
Poor	2% (3)	
Patients name	100% (141)	The patient ID information was universally completed on the front cover of the in-patient drug chart but frequently absent from individual drug sheets within the drug chart.
Patients MRN/address	99% (139)	
Patients date of birth	78% (109)	Frequently there was no allocated place for DOB on drug chart or prescription pad
Date of prescription	98% (138)	

### 6.10 Drug Identification and Instruction

As many patients received more than one drug during a single episode of care the following details are described as a percentage of the total number of drugs prescribed (N=208).

The name of the drug was recorded for 100% of items prescribed, however in a small number there were some issues with legibility. The dosage was clearly indicated and correct in 93% of drug items prescribed, however in six prescriptions the drug units (mg/g) was not recorded, while the incorrect strength (but not dose) of a medication was inaccurately recorded in one instance (325 instead of 305). In three prescriptions dose was not indicated.

Frequency was often recorded using medical notation such as OD (once daily), TID (3 times a day), QID (4 times a day), PRN (as required) on both in-patient and outpatient prescriptions. In the case of outpatient prescriptions the community pharmacist usually writes the instructions in lay-persons terms e.g. take one tablet once a day. In other instances frequency was indicated by writing the time interval a medication should be taken e.g. 6 hourly/hrly. In a small number of such cases 'hourly' was indicated by the symbol '0' e.g. '6<sup>0</sup>'. This format was confusing and is not recommended practice as it has led to misinterpretation and drug errors in the past. The format adopted by the British National Formulary (BNF) is generally recognised as good practice – the generic

name of the drug is used, followed by the dose including units and the frequency written in full e.g. 'Flucloxacillin by mouth 500mg every 6 hours, at least 30 minutes before food'.

Quantity or duration of therapy was indicated in 40% of prescriptions. It is recommended that all drugs, even treatments for chronic conditions, have duration of therapy indicated to ensure that medications are actively reviewed and not continued unnecessarily. Even for simple prescriptions such as paracetamol, only one prescriber recorded 'not to exceed maximum dose (4g daily in adult) in 24 hrs'.

Instructions beyond the basic of route of administration were minimally recorded. Only 12% of medications were accompanied by additional instructions. In outpatient prescriptions there were no written instructions in relation to the taking of medication for example with food, or instructions for GPs to monitor cholesterol, liver function tests, or renal profile in relation to certain drugs. There was no evidence on the consultation or the prescription that potential side effects of drugs were discussed with patients.

Nurses'/midwives' signatures were recorded in 100% of prescriptions but the printed name was not always recorded. The nurses'/midwives' PIN was recorded in 95% of drug items prescribed.



Table 6.3: Accuracy and Clarity of Drug Details in Prescriptions

N=208		
Name of prescription item	100% (208)	
Dosage	93% (193)	In 6 prescriptions the numeric dose was correct but the units were not recorded e.g. mg/g, incorrect strength of drug was recorded in 1 instance (325, instead of 305)
Frequency	90% (187)	Frequency was generally clearly indicated but a number of prescriptions used the symbol '0' to indicate hour. This is not recommended practice
Quantity (in number of dose units or days of treatment)	41% (85)	
Instructions	12% (25)	Very few prescriptions gave written instructions
Signature	100% (208)	
RNP PIN	95% (210)	

### 6.11 Decision not to Prescribe

The decision not to prescribe a medicine or to stop medication is equally as important as the decision to prescribe. However as such decisions are not captured on the *Nurse and Midwife Prescribing Data Collection System* therefore these patient records could not be identified and were not part of the audit. However in a number of prescriptions related to chronic disease management the RNP clearly indicated on the prescription record which medicines were to be stopped and which were to continue. This has two distinct advantages it provides a written record for the patient and it also indicates to the community pharmacist not to continue dispensing this medication therefore superseding repeat prescription records.

### 6.12 Summary of Audit of Prescriptions

The vast majority of prescriptions were clearly written and the name of the RNP prescriber was identifiable. There were a small number of prescriptions in which 'time' or 'dose' could be more clearly written to avoid misinterpretation. Out-patient prescriptions could have contained more practical information on taking of medication in relation to food or follow-up by the patient's GP.

### 6.13 Medication Safety and Appropriateness

The primary question this audit set out to address was the safety and appropriateness of the medications prescribed by nurse/midwife prescribers for this patient cohort. This assessment was based on the opinion of two experienced and qualified professionals in the fields of medicine and pharmacology. The assessment criteria utilised eight items in the modified *Medication Appropriateness Index* tool (Table 6.4). The individual reports and the percentage concordance between the two reviewers are reported in terms of appropriate, inappropriate, insufficient information, for each item in the tool.<sup>17</sup> The overall inter-rater reliability was moderate (kappa 0.44). There was variability between individual MAI items; the highest inter-rater reliability scores were for medication indication and effectiveness (kappa 0.61-0.71), the remaining items had fair to moderate inter-rater reliability scores (kappa 0.32-0.48), the lowest score was for duration of therapy (kappa 0.12).

In 95% of medicines prescribed both reviewers agreed there were clear indications either in the RNP's consultation or patient's medical history, and in 96%

<sup>17</sup> Expert concordance dose not add to 100%, as discordance is not reported.

of cases there was agreement that the medication prescribed was effective for the presenting medical condition. In 2% of medicines prescribed the reviewers agreed there was insufficient data recorded to allow a decision to be made. One of the reviewers identified 2 medications as inappropriate, this related to the selection of antibiotic prophylaxis for a scalp laceration and a beta-blocker for treatment of arrhythmia. The remaining discordance between the reviewers was related to insufficient information to make a decision<sup>18</sup>.

Both reviewers agreed that 89% of medicine dosage and 92% of directions were written correctly. One of the reviewers in particular identified the omission of dose units in the drug prescription as an important safety issue. Additional concerns involved the time interval for diclofenic 100mg; this was written as every 16 hours but the maximum recommended dose in a 24 hour period is 150mg, in this prescription a patient could potentially receive 200mg in 24 hours. In addition a small number of insulin prescriptions did not contain the units to be administered or a clear indication of time.

In 92% of medicines audited there were no potential interactions with other medications identified. Eleven drugs were identified by the reviewers as having the potential for a medication interaction based on the patient's current drug therapy. These concerned the prescribing of oral hypoglycaemic agents in conjunction with insulin, anti-arrhythmics with beta-blockers and non-steroidal anti-inflammatory drugs (NSAIDs) in a patient on aspirin therapy.

In terms of disease/medication interactions, 87% of medicines prescribed had no potential disease interactions, the reviewers identified seven medicines which held specific risks. The medicines were beta-blockers in patients with asthma, ramapril in a patient with liver disease, trimethoprim in the last trimester of pregnancy and prescribing of NSAIDs in elderly patients. In addition the reviewers would have liked to have seen information on breastfeeding recorded in the consultations in relation to prescribing NSAIDs or antibiotics for women following delivery of a baby. In

practice these medicines are prescribed in the above clinical situations but require increased patient education, monitoring and surveillance. However, there was no explicit mention of these potential risks noted in the RNP consultations.

In over 90% of medicines prescribed there was no duplication of therapy (there was no concordance between reviewers relating to medicines with the potential for duplication). Eleven drugs were identified as having the possibility for 'therapy duplication'. In one situation there was documented evidence of a discussion with a medical physician in relation to the prescribing of two penicillin based antibiotics, the other related to the prescribing of two beta-blockers, the prescribing of two opiates (tramadol and oromorph), two NSAIDs (mefenamic Acid and diclofenic sodium) or the prescribing of two analgesia for pain.

Duration of therapy received the lowest concordance measure between reviewers (76%); this was related to one reviewer in particular noting that duration of therapy was largely not indicated in in-hospital prescriptions or patients on long-term therapy (this was already identified in the prescription evaluation). Also, in a number of ED consultations, it was felt that more information was required on titrating analgesia as symptoms eased rather than a set analgesic prescription for a defined number of days.

In total 59% (122/208) of all medicines prescribed met all 8 of the MAI criteria as assessed by both reviewers. If 'duration of therapy' criteria was excluded (lowest inter-rater reliability) then 74% (155/208) of all medicines prescribed met the remaining criteria.

<sup>18</sup> Experts were not asked to assess whether there was an alternative medication that would be more effective as the range of drugs an RNP can prescribe is limited by the individual's collaborative practice agreement.

Table 6.4 Medication Appropriateness index

		Reviewer 1	Reviewer 2	Reviewer Concordance <sup>1</sup>
		% (n=208)	% (n=208)	% (n=208)
Medication indicated	Appropriate	99% (205)	96% (199)	95% (197)
	Inappropriate	0	1% (2)	0
	Insufficient information	1% (3)	3% (7)	2% (5)
Medication effective for condition	Appropriate	99% (205)	96% (96)	96% (199)
	Inappropriate	0	0.5% (1)	0
	Insufficient information	1% (3)	4% (8)	2% (5)
Dosage correct	Appropriate	93% (193)	95% (197)	89% (188)
	Inappropriate	6% (6)	1% (3)	0.5% (1)
	Insufficient information	1% (2)	4% (8)	2% (5)
Directions correct	Appropriate	93% (194)	96% (199)	92% (191)
	Inappropriate	3% (7)	0.5% (1)	1% (3)
	Insufficient information	3% (7)	4% (8)	2% (5)
Clinically significant medication interactions?	Appropriate	95% (197)	97% (202)	92% (191)
	Inappropriate	5% (10)	0.5% (1)	0
	Insufficient information	0.5% (1)	2.5% (5)	2% (2)
Clinically significant medication disease/condition interactions?	Appropriate	95% (197)	90% (188)	87% (182)
	Inappropriate	2% (5)	2% (4)	0
	Insufficient information	3% (6)	8% (16)	4% (9)
Unnecessary duplication with other medication(s)?	Appropriate	97% (202)	94% (196)	91% (190)
	Inappropriate	2% (4)	3% (7)	0
	Insufficient information	1% (2)	2% (5)	2% (4)
Duration of therapy acceptable?	Appropriate	99% (205)	77% (161)	76% (158)
	Inappropriate	0.5% (1)	2% (4)	0
	Insufficient information	1% (2)	21% (43)	2% (5)

<sup>1</sup> The percentages do not equal 100, as discordance is not reported

## 6.14 Summary of Evaluation of Medication Appropriateness

Both reviewers were in agreement that overall there was evidence of safe and appropriate prescribing practice by nurse/midwife prescribers. There were a small number of prescriptions that required greater attention to detail in terms of prescription instructions. The reviewers identified a small number of drugs (7-11) with the potential for medication or disease interactions. This readily reflects the reality of clinical practice where the prescribing of drugs, especially in the elderly or in those on multiple therapies, is based on a risk-benefit assessment (the benefits of the medication outweigh the risks).

## 6.15 Patient Outcomes<sup>19</sup>

The *Medication Appropriateness Index* tool acted as a surrogate marker of patient safety, actual patient outcome data is required for a complete evaluation of patient safety. Patient outcome data was extracted from patient charts and ED records (table 6.5). This information was limited as no direct patient follow-up was undertaken for ethical reasons and time constraints. Of the 142 patient

<sup>19</sup> Patient safety outcomes were extracted from available records but may be incomplete especially from out-patient clinics where adverse events may be reported to the patient's GP. Local and subsequent national audits should endeavour to collect direct patient outcome data from GPs or directly from patients.

records examined there was one confirmed death at the time of the audit. There was no evidence cause of death was related to medication error. There was one recorded instant of a hypoglycaemic episode in a diabetic patient prescribed both oral hypoglycaemic agents and insulin, there were no other recorded incidence of adverse drug reactions in the OPD or inpatient records. Similarly there was no unscheduled re-attendance to ED among patients who received a prescription from a nurse in an emergency department.

Table 6.5 Outcome Data for Patients in audit

	ED <sup>1</sup>	Inpatients <sup>2</sup>	Maternity Inpatients <sup>3</sup>	OPD <sup>4</sup>
	N=19	N=28	N=38	N=57
Mortality	0	0	0	1
Hospital stay	N/A	4.6 days (Sd 4.7)	2.2 days (Sd 1.5)	n/a
ED duration (11 records)	1.02 hours (SD 0.67)	n/a	n/a	n/a
Unscheduled visits	0	0	0	0
Drug reactions	0	0	1	0

<sup>1</sup> ED refers only to patients discharged from ED to home, <sup>2</sup>Inpatients includes patients admitted from ED, <sup>3</sup>Maternity Inpatients >1 night stay, <sup>4</sup>Out Patients Departments includes maternity OPD clinics

### 6.16 Summary: Profile RNPs and Prescriptions Audited

- Over 40% of all eligible RNPs at the time of the study were included in the audit.
- Practice areas represented in the audit included emergency departments, chronic illness specialities, acute medicine, surgery, and maternity.
- One hundred and forty-two patient consultations and associated prescriptions were evaluated. These prescriptions accounted for the prescribing of 208 individual medicines.

### 6.17 Summary: Key findings from the Audit of Nurse/Midwife Prescribing

- The vast majority of nurse/midwife prescriptions and consultations audited were assessed as appropriate and safe by an independent review panel.
- Assessment of patient outcomes supported this conclusion with only one incident of a drug related adverse event noted in the charts audited.
- Nurse/midwife prescribers operate across a diverse range of specialities and clinical settings with varying degrees of autonomy and independence in terms of patient management.
- Nurse/midwife prescribing is extending into areas of more complex patient care and particular vulnerable groups such as the elderly and breastfeeding mothers. The potential for drug or disease/condition related interactions increases in these settings and has particular requirements regarding ongoing professional education.
- The documented detail and quality of nursing/midwife prescribing consultations was variable with examples of excellent practice. The context of the consultation and the rationale for the prescription issued was indicated in the majority of the documented consultations reviewed.
- There was evidence that the documentation of the consultation aspect of the prescribing process needs greater emphasis in education programmes. In addition there is a need for formal direction from the regulatory and health service providers.
- Audited prescriptions and written consultations were generally found to be written to a high standard. To ensure standards are maintained prescriptions and consultations should regularly be audited by RNPs in partnership with their health service employer.

# Chapter 7

## Evaluation of Patients' Level of Satisfaction with the Nurse/Midwife Prescribing Initiative

### 7.1 Introduction

This section of the evaluation reports on patients' and service users' level of satisfaction with their experience of being prescribed a medication by a nurse or midwife with prescriptive authority. The patient satisfaction survey measured four domains in relation to patients' experience of nurse/midwife prescribing. These domains included: attitudes towards nurse/midwife prescribing; levels of satisfaction with the consultation process; levels of education/advice received and; intention to comply with the advice and direction provided by the nurse prescriber regarding the prescription. The first section of this chapter reports on patients' attitudes towards receiving a prescription from a nurse/midwife with prescriptive authority. This is followed by patients' perceptions of the level of advice they received from prescribers on their medication and prescription and the extent to which they intend to comply with the instructions provided by the nurse/midwife on the prescription. The final section explores patients' level of satisfaction with the consultation process. This section explores patients' satisfaction with the prescribing process in relation to three main domains: patients' perception of the level of professional care received; patients' perception of the time given to them by the nurse/midwife prescriber and; patients' overall level of satisfaction. Throughout the chapter patient comments from the open-ended section of the questionnaire are presented.

### 7.2 Demographic Profile of Patients/Service Users Surveyed

A total of approximately 310 questionnaires were distributed with 140 returned resulting in a response rate of 45%. Approximately sixty per cent of the sample were female. The age of patients treated by a nurse/midwife prescriber ranged from 3 years to 87 years<sup>20</sup> (mean age 45.12, SD = 20.96). Forty per cent of respondents described their health as 'very good' or 'excellent' whereas approximately a third described their health as 'fair' or 'poor'. Forty per cent of patients/service users identified their health as good (figure 7.1).

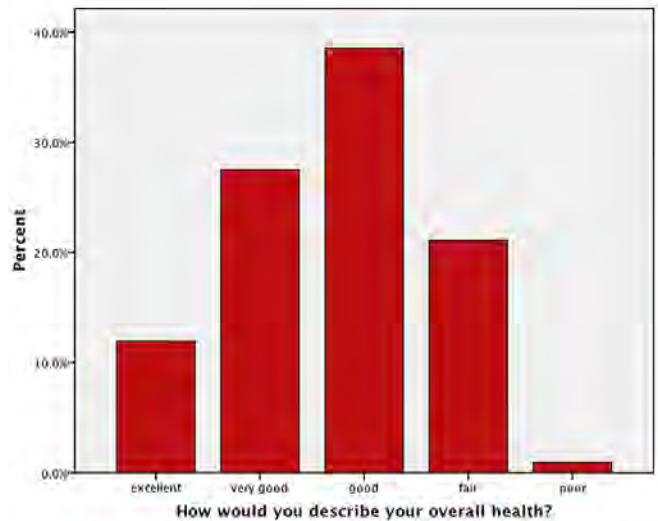


Figure 7.1 Patients' Ratings of their Overall Health

Patients/parents/guardians were asked to identify the reason why the medication they received was prescribed (see figure 7.2). Almost a fifth identified that they were prescribed medication for some form of pain relief followed by fifteen per cent identifying a rheumatological condition with fourteen per cent for the treatment of diabetes mellitus<sup>21</sup>. Twelve per cent of respondents reported that they or their child was prescribed a medication to treat infection or inflammation with a tenth reporting that they received a prescription for a cardiovascular condition. Medications were also prescribed in the areas of maternity, cancer care, for the treatment of incontinence and for dermatological conditions.

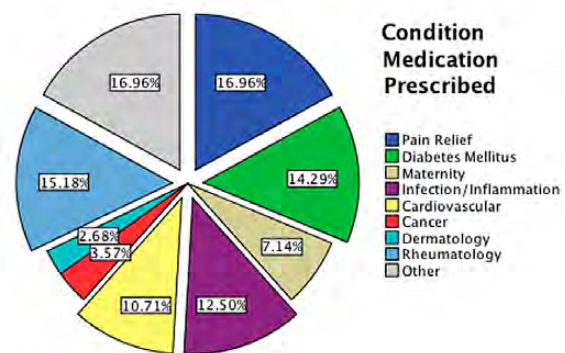


Figure 7.2 Condition for which Medication was Prescribed

20 For patients under 16 years of age parents/guardians completed the survey questionnaire (see appendix I).

21 This category includes type 1, type 2 and gestational diabetes

### 7.3 Patients'/Parents'/Guardians' Attitudes Towards Receiving a Prescription from a Nurse/Midwife with Prescriptive Authority

Patients/Parents/Guardians were asked a number of questions regarding their attitudes towards receiving a prescription from a nurse/midwife with prescriptive authority. The vast majority of respondents were in favour of nurse/midwife prescribing. Three quarters of respondents strongly agreed with a quarter in agreement; none of the respondents disagreed with the statement 'nurses/midwives should be able to prescribe medication for patients' (see figure 7.3). There was no statistically significant difference between males and females or health status in relation to the level of agreement expressed ( $p > 0.05$ ).

Open-ended qualitative comments from patients reflected this high level of support for the nurse/midwife prescribing initiative. Patients reported that they were 'in favour' of nurses/midwives prescribing and that it should be 'more widely available':

The midwife was very friendly and helpful. I think that this is a great idea and should also be more widely available. At the end of the day it's common sense and should have happened years ago! (Patient 0012).

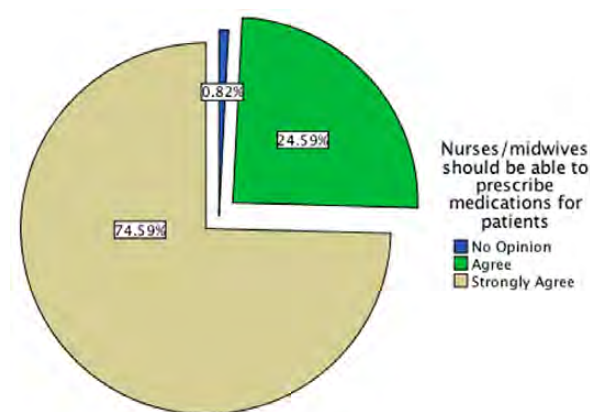


Figure 7.3 Patients' Attitudes Towards Nurse/Midwife Prescribing

In relation to whether patients would have preferred a doctor to prescribe their medication sixty-five per cent disagreed, approximately thirty per cent had no opinion

with six per cent agreeing. Although males and females disagreed with the statement 'I would prefer a doctor to prescribe my medication', a significantly higher proportion of females (78.4%) were in disagreement when compared to males (44.7%). A relatively high proportion of males (48.9%) expressed no opinion. The difference between males and females was identified as being statistically significant ( $\chi^2 = 15.68$ ,  $df = 2$ ,  $p = 0.001$ )<sup>22</sup> (see figure 7.4). One woman in particular commented on the value of being able to discuss their needs with a female nurse:

As a female I could talk to a nurse easier than a male doctor. I was very pleased to have a woman-to-woman talk and felt very at ease and relaxed (Patient 0063).

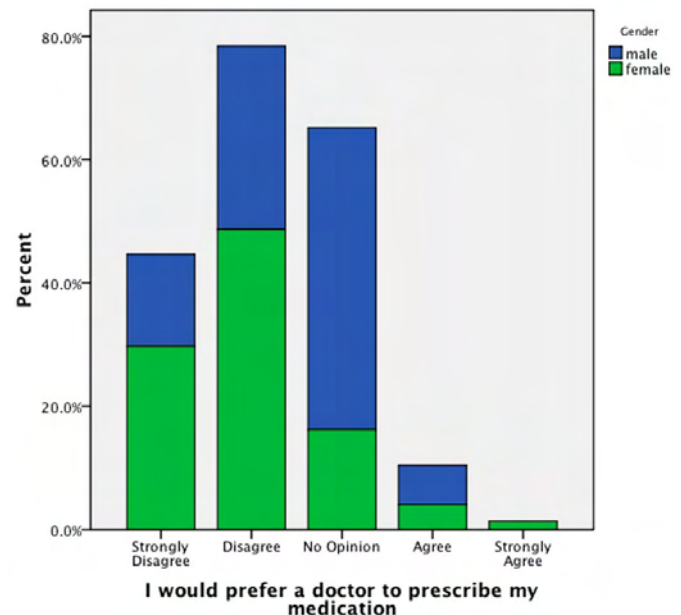


Figure 7.4 Patients' Level of Agreement/Disagreement to the Statement 'I Would Prefer a Doctor to Prescribe my Medication' by Gender

### 7.4 Patients'/Parents'/Guardians' Evaluation of the Education and Advice Received from a Nurse/Midwife with Prescriptive Authority

Patients were asked a number of questions regarding the level of advice received from the nurse/midwife

22 Due to the sample size Yate's Continuity Correction was used for the chi-square analysis.

prescriber on following the prescribing process (table 7.1). Patients and parents of children were in agreement that they were given comprehensive education and advice about each aspect of their prescription from the nurse/midwife prescriber. Over ninety per cent of respondents agreed that they had been provided with time to clarify questions about their medication and that they had been provided with information regarding the time, frequency, purpose, route, name and side-effects of the medication prescribed. The only element of education and advice received from a prescriber that fell below ninety per cent agreement related to the information about their medication. Approximately a fifth of respondents reported that they would like to have had more information from the nurse/midwife about their medication. Qualitative comments also supported the high levels of patient satisfaction with the advice received with patients reporting that it was 'personal' that 'lots of time was given to explanation' and the treatment was 'well explained'. Comments from patients who received a prescription from a nurse/midwife summed up the level of advice they received:

My diabetes nurse couldn't be better. She was caring and attentive about what I have to say or ask. I never feel I am being rushed or taking up too much of their time... I'm always given plenty of information and told to phone at any time if needs be and if I'm concerned about anything (Patient 0039).

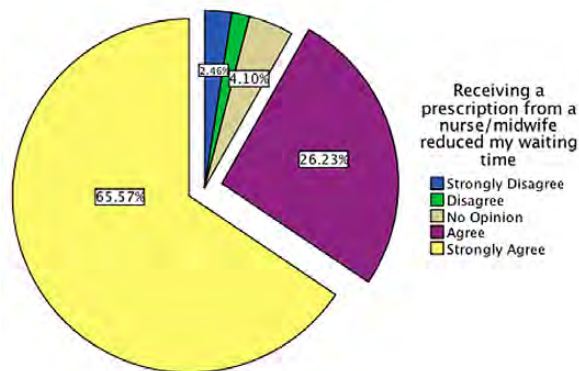
I now understand my medication and why I have to take my medication. I now feel I have a medication management programme. I can ring my nurse if I have any queries or anxiety about my arthritis or medication. I have been given a good service (Patient 0102).

**Table 7.1 Patients'/Parents'/Guardians' Evaluation of the Education and Advice Received from a Nurse/Midwife with Prescriptive Authority\***

Item	Percentage Disagreement %	Percentage Agreement %
The nurse/midwife prescriber gave me time to clarify questions I may have had about my medication	0.0	99.1
The nurse/midwife prescriber provided me with information about the time I should take my medication	0.1	97.5
The nurse/midwife prescriber provided me with information on the frequency with which I should take my medication (for example twice a day, three times a day etc.)	1.7	95.9
The nurse/midwife prescriber provided me with information on the purpose of my medication	0.0	97.6
The nurse/midwife prescriber provided me with information on how to take my medication	1.7	94.9
The nurse/midwife prescriber told me the name of my medication	0.8	98.3
The nurse/midwife prescriber explained the side-effects of my medication	3.3	90.0
I would have liked to receive more information from the nurse/midwife about my medication	68.3	18.4

\*No opinion are omitted

Over ninety per cent of patients/parents/guardians were in agreement that receiving a prescription from a nurse or midwife had reduced their waiting time. Approximately four per cent of patients disagreed or strongly disagreed that it had reduced their waiting time (see figure 7.5).



**Figure 7.5 Patient/Parent/Guardian Level of Agreement to the Statement 'Receiving a Prescription from a Nurse/Midwife Reduced my Waiting Time'**

The vast majority of open-ended comments received from patients were related to the impact that receiving a prescription from a nurse/midwife prescriber had on their waiting time. Patients commented that it had greatly reduced their waiting time and this reduction was associated with greater satisfaction with the service received. Patients attending emergency departments in particular commented on the reduction in waiting time for treatment:

I have had a very positive and valued nurse service given to me. Patients with minor injury could be seen by a prescriber nurse and treated by the nurse instead of waiting hours to see a doctor (Patient 0029).

I am very pleased with [the] treatment received by the nurse at A&E at [name] Hospital. The whole procedure was done in one hour inc. x rays. I [have] never been in and out of A&E so quick (Patient 0047).

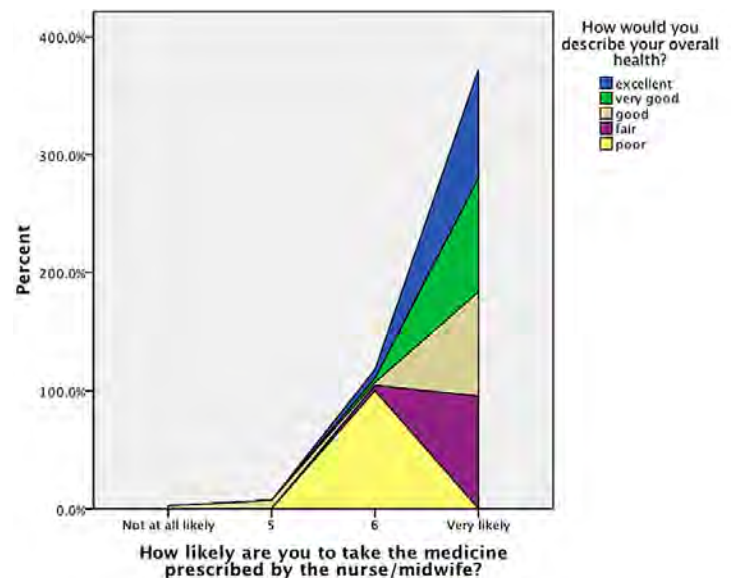
She was very helpful-down to earth and explained details very clearly. I was in and out of the hospital very quickly as a result of this scheme (Patient 0051).

Patients in relation to accessing treatment as an in-patient also highlighted the theme of reduced waiting for treatment. In particular accessing pain-relief during labour:

My midwife was able to administer pain relief to me during labour, the ease and quickness with which this was done enabled me to have a far more positive experience during labour. I am strongly supportive of midwife prescribing (Patient 0021).

### 7.5 Patients'/Parents'/Guardians' Intention to Comply with the Treatment Prescribed

Patients/parents/guardians were asked to rate on a 7-point scale how likely were they to take the medicine prescribed by the nurse or midwife. The scale ranged from 1 – not at all likely to 7 – very likely. Patients reported a high level of intention to comply with the treatment (mean = 6.84, SD = 0.69, scores ranged from 1 to 7). It was found that over ninety per cent rated their intention as very likely. There was no significant difference between males and females or health status in respect of intention to comply ( $p > 0.05$ ) (see figure 7.6).



**Figure 7.6 Intention to Comply with a Prescription Administered by a Nurse/Midwife by Health Status**

Patients'/parents' intent to comply with a nurse's/midwife's prescription and advice was measured using the compliance intent subscale from the Medical Interview Satisfaction Survey. This scale measures overall intent to comply with treatment by summing the scores from patients' responses to three items: 1) I expect that it will be easy for me to follow the nurse's/midwife's advice, 2) It may be difficult for me to do exactly what the nurse/midwife told me to do, 3) I'm not sure the nurse's/midwife's treatment will be worth the trouble it will take. Patients' responses to each of the three items are outlined in table 7.2.



Table 7.2 Patients’/Parents’/Guardians’ Responses to the Items on the Compliance Intent Subscale\*

Item	Percentage Disagreement %	Percentage Agreement %
I expect that it will be easy for me to follow the nurse’s/ midwife’s advice	0.0	98.3
It may be difficult for me to do exactly what the nurse/ midwife told me to do <sup>1</sup>	79.3	12.9
I’m not sure the nurse’s/ midwife’s treatment will be worth the trouble it will take <sup>1</sup>	84.4	5.8

<sup>1</sup> Please note on the Compliance Intent subscale these items are reverse scored

\*No opinion are omitted

The majority of patients were in agreement that it would be easy for them to follow the nurses’ advice with a majority disagreeing that it would be difficult for them to do exactly what the nurse told them to do or that the treatment would be worth the trouble to take.

The three items reported in table 7.2 were summated into the compliance intent subscale. The summated scores were then linear transformed from 0 to 100 to provide an overall intent to comply with treatment score (low scores on the scale indicate low intention to comply, high scores indicate a high intention to comply). Overall compliance intent was high (mean = 83.47, SD = 15.87). Although males (mean = 80.43, SD = 16.21) had slightly lower intent to comply scores than females (mean = 85.36, SD = 15.47); however the difference was not found to be statistically significant ( $p > 0.05$ )<sup>23</sup>. There was also no significant difference in intent to comply by health status (excellent health - mean = 89.10, SD = 10.42; very good health - mean = 85.55, SD = 13.47; good health – mean 80.15, SD 18.85; fair health – mean 82.93, SD 15.91)<sup>24</sup> (see figure 7.7 for a comparison of males and female and health status on compliance intent).

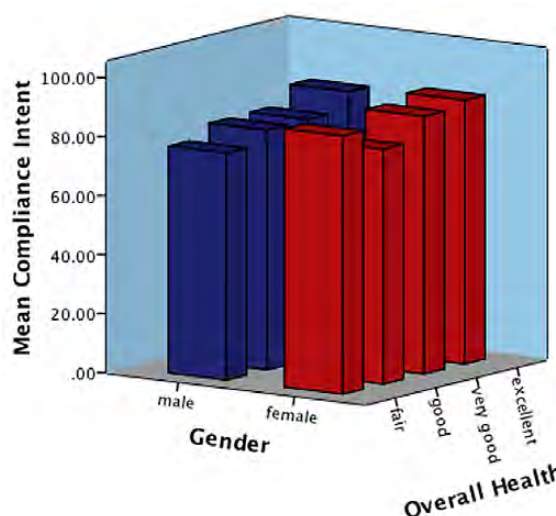


Figure 7.7 Respondents’ Intention to Comply with Treatment Prescribed by a Nurse/Midwife Prescriber by Gender and Overall Health<sup>25</sup>

## 7.6 Patient Satisfaction with the Consultation Process with the Nurse/ Midwife Prescriber

This section of the evaluation reports patients’/parents’/ guardians’ level of satisfaction of the consultation they had with the nurse/midwife who presented them with a prescription. Using the Consultation Satisfaction Questionnaire (CSQ) three domains of satisfaction were measured: patients’ level of satisfaction with the professionalism of the care they received (this was operationalised using the ‘professional care’ subscale of the CSQ); patients’ satisfaction with the amount of time they were afforded during the consultation/prescribing process (this was operationalised using the ‘perceived time’ subscale of the CSQ) and; patients’ overall level of satisfaction (this was operationalised using the ‘general satisfaction’ subscale of the CSQ).

There were high levels of agreement amongst respondents that they had received a professional level of care in their interaction with the nurse/midwife prescriber. Over ninety per cent were in agreement that the nurse/midwife had checked everything associated with their care, had given advice they could trust, listened to them and was interested in them as a person. The majority were also in agreement that the time they spent

23 Independent sample t-test

24 One-way ANOVA

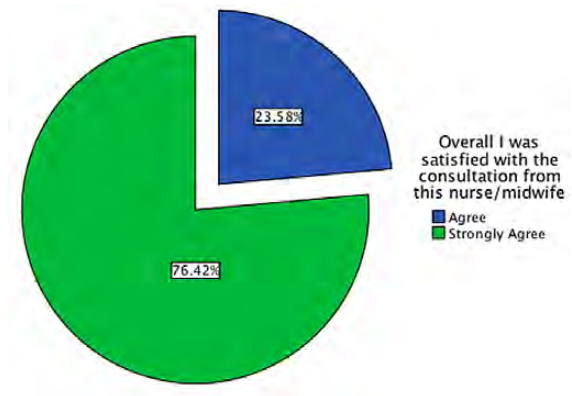
25 Scale scores range from 0 to 100. Higher scores indicate greater intent to comply

with the nurse/midwife was appropriate; however a tenth identified that the time was a bit too short and it was not long enough to deal with all they wanted. One in six patients surveyed expressed a wish that they would have liked more time in the consultation. Levels of satisfaction with the consultation process were also high with all patients agreeing or strongly agreeing that they were happy with the consultation they received from the nurse/midwife prescriber (see figure 7.8).

**Table 7.3 Patients'/Parents'/Guardians' Responses to the Items on the Consultation Satisfaction Scale\***

CSQ Item	Percentage Disagreement %	Percentage Agreement %
<b>Professional Care</b>		
This nurse was very careful to check everything when carrying out my care	0.0	99.2
I will follow this nurse's advice because I think she/he is right	0.0	99.2
The nurse explained the reasons for the advice given	0.8	95.9
The nurse listened very carefully to what I had to say	0.8	99.2
I thought the nurse took notice of me as a person	0.8	95.8
I understand my treatment much better after seeing this nurse	2.5	95.1
The nurse was interested in me as a person not just my illness	91.8	2.5
<b>Perceived Time</b>		
The time I was able to spend with this nurse was a bit too short	80.2	9.9
The time I was able to spend with this nurse was not long enough to deal with everything I wanted	85.2	9.9
I wish it had been possible to spend a little longer with the nurse	68.0	16.4
<b>Overall Satisfaction</b>		
I am not completely satisfied with the advice received from this nurse	88.5	8.2
Some things about the consultation with the nurse could have been better	82.6	8.3
Overall I was satisfied with the consultation from this nurse	0.0	100.0

\*No opinion are omitted



**Figure 7.8 Patients'/Parents'/Guardians Level of Agreement with the Statement 'Overall I was Satisfied with this Consultation from the Nurse/Midwife'**

The items that comprise the CSQ were summated into three scales that provide overall scores for the patients' level of satisfaction with professional care, time available for the consultation and overall satisfaction (see table 7.4). To aid interpretation the scale scores are reported from 0 to 100 with higher scores indicating greater levels of satisfaction within that domain.

**Table 7.4 Mean Scores of the Scales of the Consultation Satisfaction Questionnaire\***

Scale	Minimum	Maximum	Mean	SD
Professional care	28.57	100.0	90.28	11.71
Perceived Time	0.00	100.0	75.68	17.99
Overall Satisfaction	33.33	100.0	85.74	14.45

\*Scores range from 0 to 100. Higher mean scores indicate satisfaction; lower mean scores indicate dissatisfaction.

The results in table 7.4 demonstrated that respondents highly rated all aspects of the consultation process during their interaction with a nurse/midwife prescriber. The highest level of satisfaction was with the level of professional care received followed by overall satisfaction with the consultation with the prescriber. Respondents were also highly satisfied with the time spent with the prescriber but to a somewhat lesser extent than that found in the other domains. On all three domains there was no significant difference between males or females or health status on patients' level of satisfaction with their consultation with nurse/midwife prescribers (see figures 7.9 and 7.10).

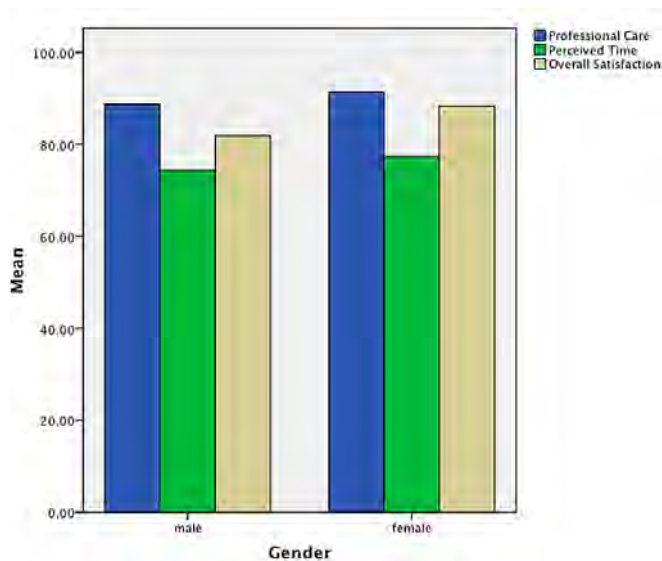


Figure 7.9 Respondents' Level of satisfaction with their Consultation with the Nurse/Midwife Prescriber by Gender

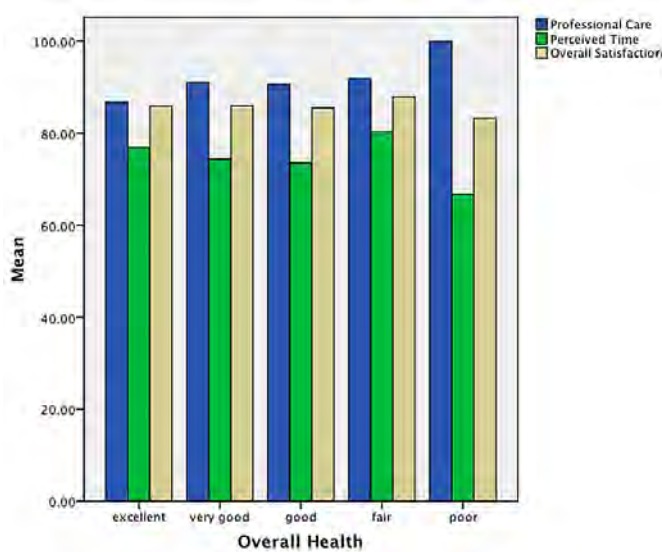


Figure 7.10 Respondents' Level of satisfaction with their Consultation with the Nurse/Midwife Prescriber by Health Status

Although there was no significant statistical difference between health status and satisfaction on the three domains of the CSQ, patients with poorer health had the lowest levels of satisfaction with the amount of time they spent with a prescriber when compared to respondents with excellent, very good, good or fair health. Qualitative

comments from patients expressed high levels of satisfaction with the quality of care received and the time given to the consultation between the patient and the nurse/midwife. In particular patients with long-term illnesses commented on the continuity of care received from a nurse/midwife with prescriptive authority and the convenience of accessing a nurse/midwife with whom they were familiar:

The nurse provides continuity of care that a doctor is too busy to (I see the nurse at every clinic appointment, than usually a random intern) I am very satisfied with the quality of care from the nurse (Patient 0098).

I only see my doctor once a year but my nurse prescriber is at the end of the phone whenever I need her. Over the years she has built up a close relationship with me and has taken the time to know me and my medical history. I trust her judgement and expertise in all matters (Patient 0097).

Patients/parents/guardians also commented that overall they were highly satisfied not only with the prescription received from the nurse/midwife prescriber but also with the consultation process. Patients/parents commented that the nurse/midwife was "thorough in their examination", "listened", "reassured" and was "experienced". A number of written comments summed up patients'/parents' overall level of satisfaction with the consultation process:

We were very pleased with the care and attention and the seamless operation of not having to be handed from one medical person to another. Nurse prescribers are the way to go! [Name] hospital was like a 5 star hospital based on our experience! (Patient 0071).

On my arrival to the treatment room my child was very nervous and when the specialist nurse came into her she made her feel very relaxed and reassured her and explained everything to her before she did it. I was happy at the way my child was treated and it took less time than waiting for the doctor. It is a great idea having these specialist nurses as part of the medical team. There should be a lot more of them (Parent 001).

Experience has been wholly positive. Reduced waiting times from hours to minutes: no packed overcrowded clinics, individual attention by the one same nurse practitioner all the time create a context highly conducive to a pleasant nurse prescribing experience. My point is simple: wider context matters too, not just how good the nurse prescriber is (Patient 0046).

### 7.7 Conclusion

Patients and parents surveyed were highly satisfied with the care they received from nurse/midwife prescribers and the majority were of the opinion that that nurses and midwives should have prescriptive authority. Patients/parents also reported that they received comprehensive education and advice from the nurse/midwife prescriber on the medication prescribed. Waiting time was also perceived to have been impacted upon with over ninety per cent of patients reporting that it had reduced their waiting time for treatment. Patient's compliance intent was high, indicating that patients trusted the education and advice provided by the nurse/midwife prescriber. Overall satisfaction with the consultation process was also high with the majority of patients surveyed of the opinion that the nurse/midwife was comprehensive in their care, listened to their concerns and treated them as a person. Patients were also satisfied with the time the nurse/midwife prescriber spent with them during the consultation process; however some patients, especially those reporting poorer health, would like to have had more time in the consultation process. Overall there were high levels of support for the prescribing initiative with the vast majority of patients in favour of nurse/midwife prescribing. Patients were also satisfied with the care and advice provided by prescribers and reported high levels of intent to comply with the prescription administered.

### 7.8 Summary: Key Findings from Patients'/Parents'/Guardians' Evaluation of the Nurse/Midwife Prescribing Initiative

- Patients and parents of children reported that they were given comprehensive education and advice about each aspect of their prescription from the nurse/midwife prescriber.
  - The majority of patients reported that receiving a prescription from a nurse/midwife had reduced their waiting time for treatment.
  - Patients reported high levels of intention to comply with the treatment prescribed by the nurse/midwife prescriber.
  - Patients reported high levels of satisfaction with their consultation with the nurse/midwife prescriber.
  - Patients were in agreement that they had received high levels of professional care from the nurse/midwife prescriber.
  - Patients were generally satisfied with the time they were able to spend with the nurse/midwife prescriber.
  - Patients with poorer health would like to have spent more time with the nurse/midwife prescriber.
  - Overall satisfaction with the consultation process was high with the majority of patients surveyed of the opinion that the nurse/midwife was comprehensive in their care, listened to their concerns and treated them as a person.
- Approximately 100% of patients surveyed were in favour of nurses and midwives prescribing medications.

# Chapter 8

## Evaluation of Stakeholders' Perceptions of the Nurse/Midwife Prescribing Initiative

### 8.1 Introduction

This section of the report outlines the evaluation of the prescribing initiative from the perspective of key stakeholders. Stakeholders were identified as all those who have contact with or would have an opinion on the prescribing initiative and included those working in clinical practice, education, policy and regulation. Key stakeholders were surveyed on their attitudes towards the introduction of nurse/midwife prescribing, the impact of the initiative on patient care, the perceived safety of the initiative, the need for nurse/midwife prescribing and their level of knowledge of the initiative. In addition those key stakeholders whose work brings them into day-to-day contact with nurse/midwife prescribers were further surveyed on the direct impact the initiative was having on patient care and how the initiative impacted on their workload. The first part of this chapter reports on the demographic profile of the stakeholders, this is followed by a presentation of results from the survey of attitudes towards the introduction of the initiative. Finally, the results from the survey of stakeholders who have clinical contact with prescribers are reported.

### 8.2 Demographic Profile of Stakeholders

A total of 456 stakeholders were surveyed, 335 responded of which 326 questionnaires were completed resulting in a usable response rate of 71.5%. Nine questionnaires were returned incomplete for a variety of reasons including the respondent was no longer employed in the organisation, the individual felt they were not in a position to respond on the initiative or the initiative had not been running long enough in their organisation to provide a valid response. Figure 8.1 outlines the demographic profile of respondents.

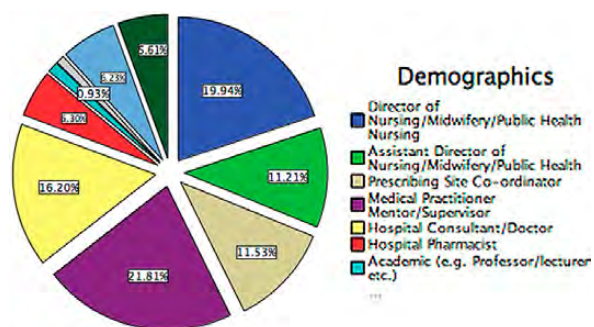


Figure 8.1 Demographic Profile of Stakeholders

Approximately a third of the sample were at Director or Assistant Director of Nursing/Midwifery/Public Health Nursing level with approximately thirty-eight per cent identifying their role as hospital consultant or medical practitioner mentor with just over five per cent pharmacists. A tenth represented other areas associated with the health services including regulation (e.g. An Bord Altranais), policy/guidance (e.g. Health Service Executive, Department of Health and Children, National Council for the Professional Development of Nursing and Midwifery), third-level institutes and others including unions, the Medical Council and the Pharmaceutical Society of Ireland.

Ninety per cent of stakeholders reported that they were involved or very involved with the prescribing initiative with only ten per cent reporting little or no involvement. Those who reported that they had minimal or no involvement tended to be employed in the area of policy development (e.g. Department of Health & Children, Health Service Executive). Approximately forty-three per cent of respondents were members of their organisation's drugs and therapeutics committee.

### 8.3 Stakeholders' Attitudes towards the Nurse/Midwife Prescribing Initiative

This section of the evaluation reports on the survey of attitudes towards the introduction of the prescribing initiative from the perspective of key stakeholders. For the purpose of the evaluation stakeholders were divided into three groups: 1) medical/pharmacy; 2) nurses and midwives<sup>26</sup> and; 3) others, which included respondents involved in the area of policy, regulation and education.

#### 8.3.1 Stakeholders' Attitudes towards the Impact of the Initiative on Patient Care

The vast majority of stakeholders were of the opinion that nurse/midwife prescribing was a good service for patients, has a positive impact on patient care and meets the needs of patients (see table 8.1). The level of disagreement with the statement 'nurse/midwife prescribing had a positive impact on patient care' was less than four per cent.

26 Nurses and midwives in this phase of the evaluation does not include respondents who completed the prescribing preparation education programme.

Table 8.1 Stakeholders' Attitudes Towards the Impact of the Initiative on Patient Care\*

Item	Percentage Disagreement %	Percentage Agreement %
Nurse/midwife prescribing is a good service for patients	1.3	94.2
Nurse/midwife prescribing has a positive impact on patient care	3.2	86.0
Nurse/midwife prescribing meets the needs of the patients	3.0	82.3

\*No opinion are omitted

Differences in attitudes between the groups surveyed (nursing/midwifery, medical/pharmacy and others) towards the impact of the prescribing initiative on patient care tended to be in the level of agreement with the nursing/midwifery respondents and those employed in policy or regulation more likely to strongly agree when compared to the medical/pharmacy professions who were more likely to be in agreement. Figure 8.2 outlines the differences in attitudes between the three groups.

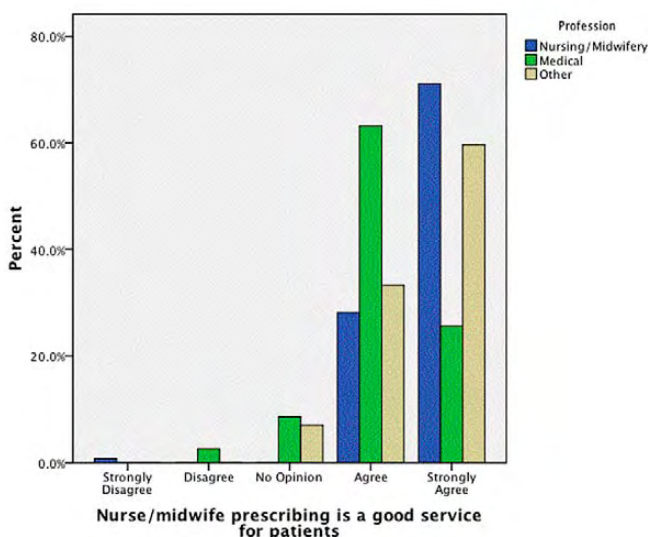


Figure 8.2 Attitudes towards the impact of the prescribing initiative on patient care by professional group.

### 8.3.2 Stakeholders' Attitudes towards the Safety of Nurse/Midwife Prescribing

This section reports on key stakeholders' attitudes towards the safety of the prescribing initiative in relation to patient care. The majority of respondents were of the opinion that nurse/midwife prescribing was safe with over ninety per cent in agreement that nurses/midwives would prescribe correctly. The vast majority of respondents were also in agreement that nurses/midwives had the knowledge to prescribe and had received adequate training for their role. Furthermore, approximately three-quarters of the respondents disagreed with the statement 'nurse/midwife prescribing would increase the risk of incorrect treatment received by patients'.

Table 8.2 Stakeholders' Attitudes Towards the Safety of the Prescribing Initiative\*

Item	Percentage Disagreement %	Percentage Agreement %
Nurse/midwife prescribing increases the risk of incorrect treatment	74.8	14.6
I trust nurses/midwives to prescribe correctly	4.5	90.9
I am worried that nurses/midwives do not have the necessary knowledge to prescribe	80.6	13.8
Nurses/midwives receive adequate training for their role	8.8	78.8
I fear nurses/midwives will make an incorrect diagnosis	72.6	14.0

\*No opinion are omitted

In relation to the statement 'I trust nurses/midwives' to prescribe correctly', ninety-eight per cent of nurses/midwives, eighty-two per cent of medical/pharmacy respondents and eighty-three per cent of other professions were in agreement. There was no statistical difference between groups ( $p > 0.05$ ) (see figure 8.3). Further support for the initiative was also evident in the professions' responses to the statement 'I am worried that nurses/midwives do not have the necessary knowledge to prescribe' with ninety-three per cent of nurses/midwives,

sixty-seven per cent of the medical profession and eighty per cent of other professions in disagreement. It should be noted that a quarter of the medical profession were in agreement with the statement (see figure 8.4).

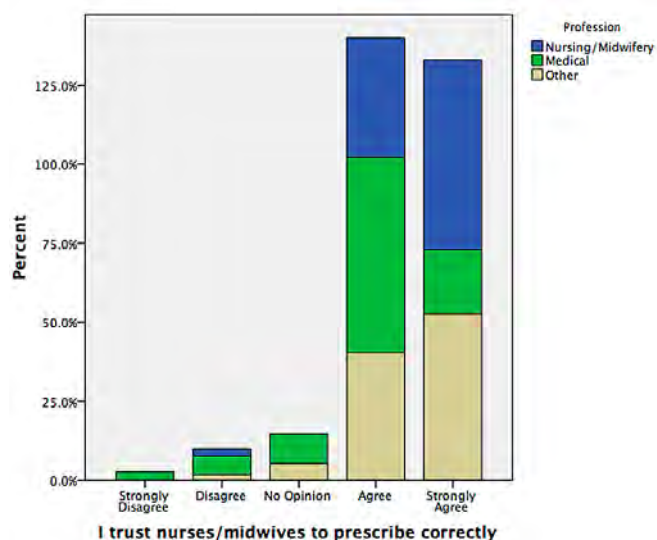


Figure 8.3 Attitudes to the statement 'I trust nurses/midwives to prescribe correctly' by professional group.

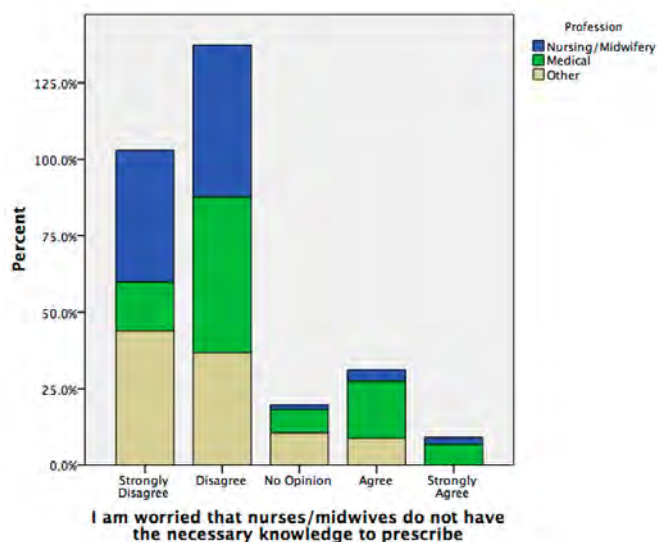


Figure 8.4 Attitudes towards statement 'I am worried that nurses/midwives do not have the necessary knowledge to prescribe' by professional group.

### 8.3.3 Stakeholders' Attitudes to the Prescribing Initiative

This section of the evaluation reports on stakeholders overall perception of the merit or otherwise of the prescribing initiative. The survey explored attitudes towards the need for prescribing, their knowledge of the initiative, the impact on the health service in terms of cost, and attitudes towards the overall success of the implementation of the initiative (see table 8.3). The vast majority of stakeholders were positive about the initiative and were in agreement that nurses and midwives had a role in the prescribing process and there was a need to extend prescribing beyond the remit of the medical profession. Key stakeholders were also of the opinion that nurse/midwife prescribing would save time for doctors and that it was a necessary initiative for today's health service. Levels of support for nurse/midwife prescribing were also high with approximately ninety-five per cent of respondents in agreement that they supported the prescribing initiative. There was also support for increasing the numbers of prescribers. Respondents were also in agreement that the prescribing initiative would not lead to increased healthcare costs and could lead to financial savings.

Table 8.3 Stakeholders' Attitudes Towards Prescribing Initiative\*

Item	Percentage Disagreement %	Percentage Agreement %
Prescribing should only be undertaken by doctors	92.6	3.6
Nurse/midwife prescribing saves time for doctors	9.4	79.9
Nurse/midwife prescribing is unnecessary, patients can receive their medication from a doctor	6.8	87.6
Nurses/midwives should be allowed to prescribe medications	2.6	93.9
I support the nurse/midwife prescribing initiative	2.3	94.5
I fully understand nurses'/midwives' role as prescribers	6.2	89.6
There is a need for more nurse/midwife prescribers	5.9	82.8

\*No opinion are omitted

Table 8.3 Stakeholders' Attitudes Towards Prescribing Initiative\* (continued)

Item	Percentage Disagreement %	Percentage Agreement %
The prescribing of medicinal products by nurses and midwives will advance the nursing profession	3.2	89.6
Nurse/midwife prescribing leads to extra healthcare costs	79.6	7.4
Nurse/midwife prescribing results in financial savings	18.5	75.0
Nurse/midwife prescribing is necessary	7.1	87.4
Overall the introduction of the nurse/midwife prescribing initiative has been a success	6.3	66.8

\*No opinion are omitted

Although two-thirds of the stakeholder sample were in agreement that the introduction of the initiative had been successful, a quarter were undecided, reflecting the relatively recent introduction of nurse/midwife prescribing. The majority of those who were undecided or had no opinion regarding the success or otherwise of the introduction of the prescribing initiative came from the medical/pharmacy professions (see figure 8.5).

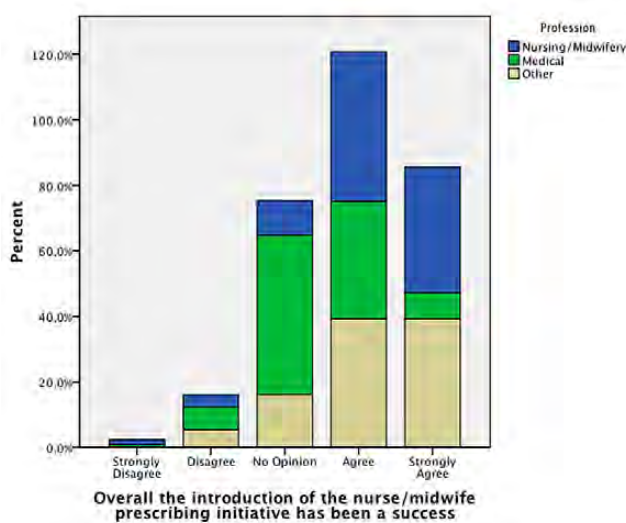


Figure 8.5 Key Stakeholders' Responses to the Statement 'Overall the Introduction of the Nurse/Midwife Prescribing Initiative has been a Success'

## 8.4 Perception of Clinical Stakeholders with a Nurse/Midwife Prescriber in their Organisation

This section of the evaluation reports on the survey of attitudes towards the introduction of the prescribing initiative from the perspective of key stakeholders who have a nurse or midwife prescriber employed within their organisation. For the purpose of this report these respondents are referred to as clinical stakeholders. The aim of this section of the evaluation is to evaluate the outcomes of the prescribing initiative from the perspective of those who work directly with nurse/midwife prescribers. This section reports on a number of areas including the impact of nurse/midwife prescribing on patient care, the impact of the initiative on the workload of nurses/midwives and doctors, and the level of communication between prescribers and other members of the healthcare team. The sample was split between the nursing and midwifery professions (54.3%) and the medical and pharmacy professions (45.7%).

### 8.4.1 Impact on Patient Care

Clinical stakeholders were in agreement that the introduction of nurse/midwife prescribing had directly benefitted patient care. Respondents identified convenience for patients/clients and enabling patient/clients to access medications quicker as the most positive outcomes of nurse/midwife prescribing. Over three quarters of the clinical stakeholders surveyed agreed or strongly agreed that nurse/midwife prescribing had reduced delays in initiating in-patient treatment as well as reducing the number of health care professionals a patient/client must interact with during their visit or stay in hospital. Approximately two-thirds of clinical stakeholders identified that the prescribing initiative had increased patient satisfaction levels whereas fifty-seven per cent agreed that it enhanced patient compliance. Half of the respondents were in agreement that nurse/midwife prescribing reduced the need for patients/clients with long-term illnesses to return to see their doctor as frequently as previously however a significant minority (45.5%) had no opinion in respect of this outcome. Approximately half of the respondents also agreed that the prescribing initiative has reduced delays in discharge of patients/clients while sixteen per cent disagreed that this outcome had been achieved.

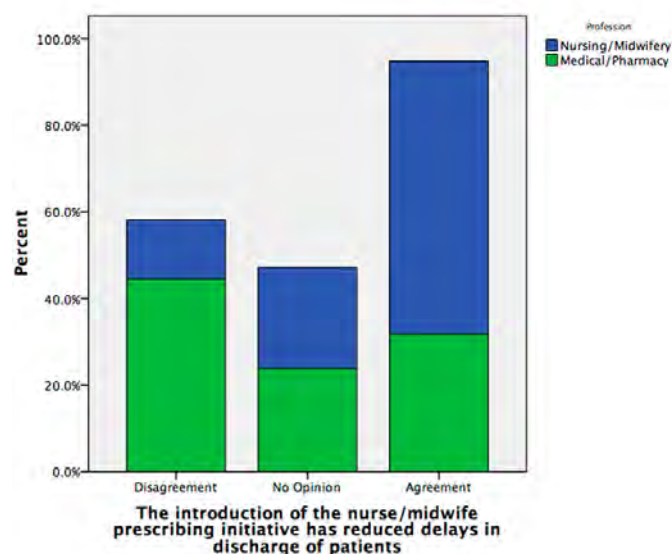


**Table 8.4 Clinical Stakeholders' Perceptions of the Impact of the Prescribing Initiative on Patient/Client Care\***

Item	Percentage Disagreement %	Percentage Agreement %
The introduction of the nurse/midwife prescribing initiative has reduced delays in discharge of patients/clients	27.9	52.3
The introduction of the nurse/midwife prescribing initiative has reduced delays in initiating inpatient treatment	17.8	65.2
The introduction of the nurse/midwife prescribing initiative has reduced the number of health care professionals a patient/client must interact with	24.1	64.2
The introduction of the nurse/midwife prescribing initiative is more convenient for patients/clients	2.2	90.5
The introduction of the nurse/midwife prescribing initiative has enabled patients/clients to access medication quicker	11.7	76.7
The introduction of the nurse/midwife prescribing initiative has increased patient/client satisfaction levels	3.6	54.3
Nurse/midwife prescribing enhances patient/client compliance	8.7	54.3
Nurse/midwife prescribing has reduced the need for patients/clients with long-term illnesses to return to see their doctor as frequently as previously	12.4	49.7
Patients/clients are supportive of nurses/midwives prescribing	2.2	77.6

\*No opinion are omitted

In relation to clinical stakeholders' response to the item 'the introduction of the nurse/midwife prescribing initiative has reduced delays in discharge of patients/clients' approximately two-thirds of nurses/midwives agreed or strongly agreed whereas approximately a third of medical practitioner/pharmacists respondents were in agreement. Forty-five per cent of medical practitioners/pharmacists disagreed that the introduction of the initiative had led to the earlier discharge of patients. This difference in the levels of agreement between medical practitioners/pharmacists and nurse/midwife and other stakeholders was statistically significant ( $\chi^2 = 18.26$ ,  $df = 2$ ,  $p = 0.001$ ) (see figure 8.6).



**Figure 8.6 Attitudes Towards the Statement 'The Introduction of the Nurse/Midwife Prescribing Initiative has Reduced Delays in the Discharge of Patients'**

There were high levels of agreement between the two groups of key clinical stakeholders that nurse/midwife prescribing was more convenient for patients (95.9% of nurses/midwives, 84.1% medical practitioners/pharmacists) (see figure 8.7) and that prescribing initiative has enabled patients/clients to access medication quicker (86.5% of nurses/midwives, 65.1% of medical practitioners/pharmacists) (see figure 8.8).

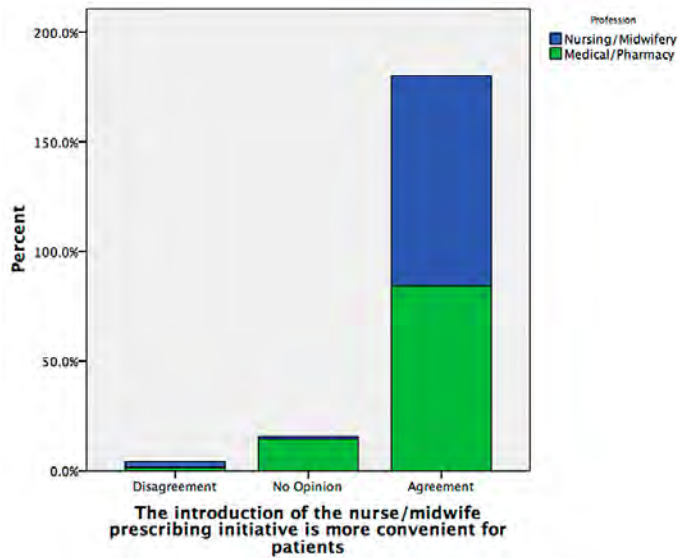


Figure 8.7 Attitudes Towards the Statement 'The Introduction of the Nurse/Midwife Prescribing Initiative is more Convenient for Patients'

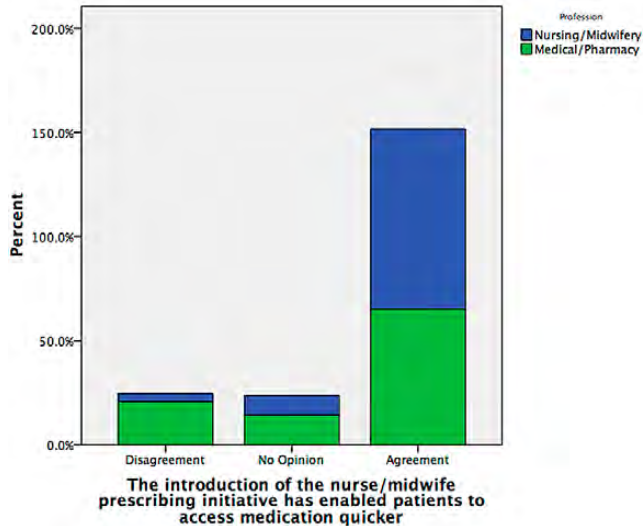


Figure 8.8 Attitudes Towards the Statement 'The Introduction of the Prescribing Initiative has Enabled Patients to Access Medication Quicker'

### 8.4.2 The Impact of the Prescribing Initiative on the Workload of Nurses/Midwives and Medical Practitioners

Clinical stakeholders were requested to respond to a number of statements that measured their attitudes to

the impact the prescribing initiative had on the workload of nurse/midwife prescribers and medical practitioners. The results are outlined in table 8.5. The majority of clinical stakeholders disagreed that prescribing took up too much of nurses' and midwives' time, with over seventy per cent identifying that it had freed up doctors' time (76% of nurses/midwives and 65% of medical practitioners agreed or strongly agreed that nurse/midwife prescribing had freed up doctors' time). The majority of medical practitioner mentors (58.7%) did not perceive that supervising a nurse/midwife prescriber had added a burden to their workload, however approximately a quarter of medical respondents reported that supervision was an extra burden to their workload.

Table 8.5 Clinical Stakeholders' Perceptions of the Impact of the Prescribing Initiative on Nurses'/Midwives' and Doctors' Workloads\*

Item	Percentage Disagreement %	Percentage Agreement %
Nurse/midwife prescribing takes up too much of the nurse's/midwife's time	73.9	6.5
The introduction of the nurse/midwife prescribing initiative has freed up doctors' time	13.0	71.0
Supervising a nurse/midwife prescriber is a burden to my workload	62.8	20.8

\*No opinion are omitted

### 8.4.3 Clinical Stakeholders' Perceptions of Communication and Collaboration

A majority (75%) of clinical stakeholders were in agreement that the introduction of the nurse/midwife prescribing initiative had had a positive effect on interprofessional relationships. Five per cent were in disagreement (see figure 8.9). Three-quarters of key stakeholders also identified that doctors supported prescribers in their role. A higher proportion of nurses/midwives (81.8%) were in agreement than doctors (68.3%), however the differences were not statistically significant. Sixty-three per cent of clinical stakeholders were in agreement that nurse/midwife prescribers

had received support from hospital pharmacists. A higher proportion of nurses/midwives (78.4%) reported that prescribers received support from pharmacists and doctors (44.4%). It should be noted however that approximately half of the medical practitioners/pharmacists surveyed expressed no opinion on this item.

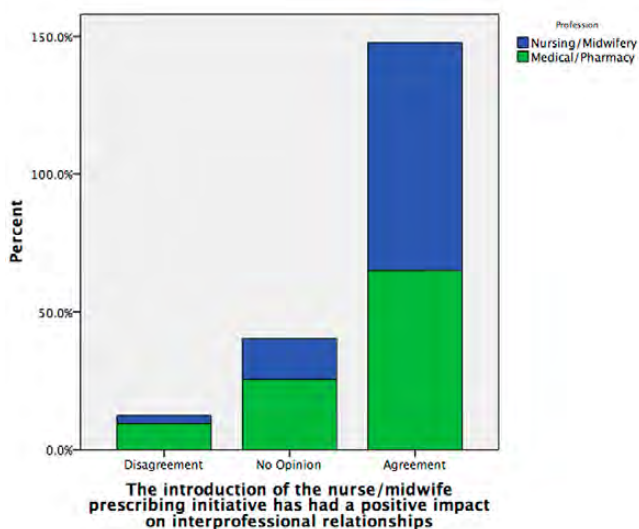


Figure 8.9 Attitudes Towards the Statement 'The Introduction of the Nurse/Midwife Prescribing Initiative has had a Positive Impact on Interprofessional Relationships'.

## 8.5 Conclusion

There was a high level of support towards the introduction of the initiative with the majority of key stakeholders of the opinion that nurse/midwife prescribing was a good service for patients, that it had a positive impact on patient care and that it met the needs of patients. There was also agreement that extending prescriptive authority to nurses and midwives was safe with the majority of stakeholders in agreement that nurses and midwives would prescribe correctly, that they had the knowledge to prescribe and had received appropriate education and training for their role. The majority of stakeholders were also of the opinion that nurses and midwives had a role in the prescribing process and there was a need to extend prescribing beyond the remit of the medical profession. A majority of respondents were very supportive of the initiative overall

and two-thirds of key stakeholders were of the opinion that its introduction had been a success. However, a quarter had no opinion on the success or otherwise of the introduction of the prescribing initiative reflecting the recent introduction of nurse/midwife prescribing in some sites. Stakeholders that worked directly with a nurse/midwife prescriber in their organisation identified the ability of patients to access medication more quickly and efficiently was a key outcome from the prescribing initiative. There was also a perception that it had reduced the number of health professionals a patient had to interact with during their visit or stay in hospital. Clinical stakeholders were also of the opinion that nurse/midwife prescribing impacted positively on a number of patient outcomes such as patient satisfaction and compliance. Although there was variability in opinion on the impact of nurse/midwife prescribing on the frequency with which patients with long-term illness had to visit their doctor for a prescription and the extent to which it reduced delays in the discharge of patients a small majority of clinical stakeholders agreed that nurse/midwife prescribing had impacted positively on these outcomes. However, whilst the majority of nurse/midwife prescribers agreed that the prescribing initiative reduced the delay in the discharge of patients, the majority of medical practitioners disagreed. There was consensus amongst clinical stakeholders that the extension of prescriptive authority had freed up doctor's time. Furthermore medical practitioners perceived that supervising a nurse/midwife prescriber was not, overall, a burden on their workload. The extension of prescribing to nurses and midwives was also perceived by clinical stakeholders as not adding to the workload of prescribers. It was also evident that the majority of clinical stakeholders were of the opinion that nurse and midwife prescribers were supported in their role by health professionals within the organisation within which they were based.

## 8.6 Summary – Key Findings from Stakeholders' Evaluation of the Nurse/Prescribing Initiative

- Key stakeholders were of the opinion that the introduction of nurse/midwife prescribing had a positive impact on patient care and that it met patients' needs.

- Key stakeholders were of the opinion that nurse/midwife prescribing was safe and that nurse/midwife prescribers had been prepared for their role.
- Key stakeholders were of the opinion that nurses and midwives had a role in the prescribing process, that it was necessary and that there was a need to extend prescribing beyond the remit of the medical profession.
- Key stakeholders were of the opinion that the prescribing initiative would not lead to increased healthcare costs and would lead to financial savings.
- A majority of key stakeholders were of the opinion that the introduction of nurse/midwife prescribing had been a success.
- Clinical stakeholders identified convenience for patients and enabling patients to access medications quicker as the most positive outcomes of nurse/midwife prescribing.
- Clinical stakeholders were of the opinion that the prescribing initiative enhanced patient satisfaction and improved patient compliance.
- There was variability in opinion on the impact of nurse/midwife prescribing on the frequency with which patients with long-term illness had to visit their doctor for a prescription and the extent to which it reduced delays in the discharge of patients.
- The majority of key stakeholders were in agreement that extending prescriptive authority to nurses and midwives had freed up doctors' time.
- Medical practitioners were generally of the opinion that supervising a nurse/midwife prescriber was not a burden on their workload.
- Clinical stakeholders agreed that nurse/midwife prescribers were well supported in their role by other healthcare professionals.

# Chapter 9

## Prescribers’/Non-Prescribers’ Evaluation of the Nurse/Midwife Prescribing Initiative

### 9.1 Introduction

This chapter evaluates the prescribing initiative from the perspective of nurses and midwives on their return to clinical practice following the completion of the prescribing preparation programme. To aid in the identification of facilitators and barriers to the prescribing initiative the results are presented firstly from the perspective of nurses and midwives who have commenced prescribing (47 RNPs) and secondly from the perspective of nurses and midwives who completed the prescribing preparation programme but at the time of the survey had not yet initiated their prescribing practice (55 candidate prescribers). For the purpose of the evaluation this cohort will be referred to as currently not prescribing nurses and midwives. A total of 138 nurses and midwives who had completed the preparation for prescribing programme were surveyed, 102 responses were received resulting in a response rate of 73.9%.

### 9.2 Evaluation of the Prescribing Initiative from the Perspective of Nurse/Midwife Prescribers

This section of the evaluation presents the results from a survey of forty-seven nurses and midwives who had commenced prescribing following the completion of their prescribing programme. All nurses and midwives who were actively prescribing at the time of the study were sent a questionnaire.

Firstly the current prescribing practices of nurse/midwife prescribers are outlined, this is followed by prescribers’ evaluations of their current role including their perceptions of the safety of prescribing practice, the impact of the role on their professional practice and the impact of the role on patient care. The support received by nurses and midwives from other healthcare professionals is also evaluated. The final section reports on the extent to which prescribers engaged in clinical professional development following the commencement of their prescribing role.

#### 9.2.1 Current Prescribing Practices

The vast majority of prescribers identified themselves as frequent prescribers (85.1%,  $n = 40$ ) with a minority reporting that they prescribed occasionally or infrequently (14.9%,  $n = 7$ ) (See figure 9.1). Only seven

nurses/midwives identified their prescribing practice as ‘occasional or infrequent’. Occasional or infrequent prescribers were at staff nurse, clinical nurse manager and clinical nurse specialist levels.

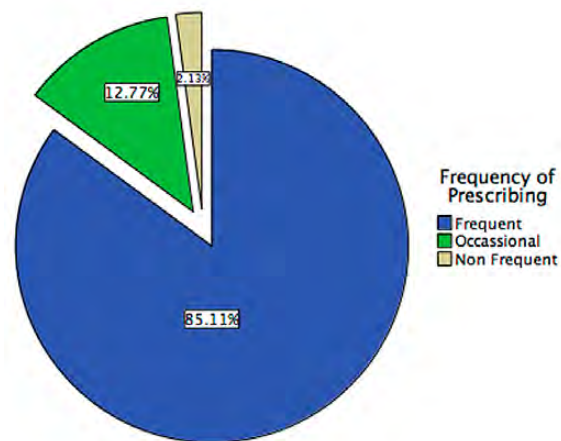


Figure 9.1 Frequency of Prescribing

At the time of the evaluation the vast majority of prescribing was hospital based (87.1%,  $n = 41$ ) with only one prescriber predominantly community based and approximately a tenth ( $n = 5$ ) prescribing both in the hospital and community settings.

The number of prescriptions written on average per week ranged from 0 to 50. This level of prescribing equated to a mean of 8.81 (SD = 9.92) (median = 5.00, IQR = 8.00)<sup>27</sup> prescriptions written per week. The number of medicinal items prescribed per week ranged from 0 to 75 with a mean of 12.8 (SD = 15.48) (median = 5.50, IQR = 20.00)<sup>28</sup>. Approximately half ( $n = 20$ ) of nurse/midwife prescribers reported that they administered five or less prescriptions per week with forty-five per cent administering greater than five. Prescribers who issued five or less prescriptions per week were asked to identify reasons why they didn’t prescribe more frequently. A number of reasons were advocated including: inability to prescribe medications required by a patient due to them

27 Due to the spread of data and the presence of outliers the median and the interquartile range offers a more accurate estimate of the average number of prescriptions written per week.

28 Due to the spread of data and the presence of outliers the median and the interquartile range offers a more accurate estimate of the average number of medicinal items prescribed per week.

being unlicensed, constraints of time, the nurse/midwife prescriber worked on a part-time basis, and prescribing in a specialist area where patient numbers are small.

The majority of respondents reported that they were constrained in their prescribing practice with sixty-three per cent ( $n = 29$ ) identifying that there were drugs they would like to prescribe in their practice but were unable to do so. The principle reason given by respondents was the restrictions placed on nurse/midwife prescribers in the prescribing of unlicensed or 'off-label' medication. The restriction in prescribing unlicensed medications mainly impacted on children's nurses and midwives, however it also impacted on nurses in other specialist areas. A further barrier identified by nurses, especially those working in the area of pain management, was the restrictions placed on their prescribing by Schedule 8 of the Misuse of Drugs (Amendments) Regulations 2007. Schedule 8 restricts prescribing to morphine as the only controlled drug that nurses/midwives can prescribe for acute pain. One respondent commented on the difficulty they faced due to the restrictions outlined in schedule 8: 'Schedule 8 is very restrictive in pain management. Morphine as an oral preparation is used less frequently than other oral opioids' (Prescriber 00120). A third group of drugs that nurse/midwife prescribers identified as being important to prescribe but they were unable to do so were antibiotics. One recurring reason given by prescribers for the restrictions placed on antibiotics was the perception from the either the hospital's Drugs and Therapeutics Committee or the microbiology department that extending the prescribing of this group of drugs would lead to their overuse or over-prescribing.

### 9.2.2 Prescriber's Assessment of the Safety and Ability of their Prescribing Role

A number of items were identified to measure prescribers' perceptions of the safety of their prescribing practice. Overall approximately ninety per cent ( $n = 45$ ) of prescribers agreed that they could prescribe safely and effectively and that they had the necessary skills and training to fulfil their role as a prescriber. A majority were also aware of the conditions that they could prescribe for within their scope of practice (there was near unanimity of agreement on this point) and that they were aware of the principle of accountability associated with a prescribing remit. Although the majority of prescribers disagreed with the statements 'I feel anxious about

writing a prescription', and 'I sometimes feel uncertain about making a diagnosis' a significant minority were in agreement with each of the statements. A quarter of the sample ( $n = 11$ ) identified that they felt anxious about writing a prescription and just under a third ( $n = 15$ ) felt uncertain about making a diagnosis. Although there were no statistically significant differences between prescribers' current grade or years qualified on their responses measuring prescribing safety and ability ( $p > 0.05$ ) a higher proportion of those with less years of experience (44.4%) expressed anxiety about writing a prescription when compared to prescribers with 16-25 years of experience (21.7%) or greater than 25 years of experience than Prescribers' (16.6%).

Table 9.1 Prescribers' Assessment of the Safety of their Prescribing Role\*

Item	Percentage Disagreement %	Percentage Agreement %
I can prescribe safely and effectively	2.1	95.8
I fear making an incorrect diagnosis in my prescribing practice	59.6	34.0
The issue of accountability is never far from my mind when prescribing	6.5	91.4
I feel anxious about writing a prescription	74.5	22.4
I feel I have all the necessary skills and training to fulfil my role as a prescriber	8.5	89.4
I fear litigation	40.4	51.0
I sometimes feel uncertain about making a diagnosis	59.6	31.9
I am uncertain about which conditions I am allowed to prescribe for	97.9	2.1
I feel confident to discontinue a medication prescribed by another doctor/nurse	15.2	71.7

\*No opinion are omitted

### 9.2.3 Impact of Nurse/Midwife Prescribing on Professional Practice

This section of the report evaluates the impact of prescribing on the role of nurses and midwives. It reports on prescribers' perspectives of the impact of the role on patient care, their professional development and the overall benefit of extending prescribing to the nursing and midwifery profession. In most areas the evaluation found that the prescribing initiative has had a positive impact on the professional development of nurses and midwives, the care that can be offered to patients and clients and their overall level of job satisfaction. The greatest impact has been on job satisfaction where ninety-five percent of nurse/midwife prescribers agreed that the initiative had increased their level of job satisfaction. A similar percentage also agreed that the extension of prescriptive authority to nurses and midwives had improved the quality of care that they can deliver to patients and ensured a better use of their skills. The majority of the sample also reported that the initiative had led to increased confidence and autonomy and prescribers also welcomed the increased responsibility associated with prescribing. Approximately eighty-nine per cent of prescribers disagreed that the introduction of prescribing had shifted their focus from their core nursing and midwifery skills, however over ninety per cent were in agreement that taking on a prescribing role led to an increased workload.

Table 9.2 Impact of the Initiative on the Professional Role of Nurse and Midwife Prescribers\*

Item	Percentage Disagreement %	Percentage Agreement %
Prescribing has increased my confidence as a nurse/ midwife	11.4	72.7
Now that I can prescribe I feel pressure to prescribe	61.4	29.6
Prescribing brings with it an increased workload	6.8	90.9
Prescribing ensures better use of my skills	11.4	86.3
I welcome the responsibility that prescribing brings	11.4	70.4

\*No opinion are omitted

Table 9.2 Impact of the Initiative on the Professional Role of Nurse and Midwife Prescribers\* (continued)

Item	Percentage Disagreement %	Percentage Agreement %
I have increased my autonomy since I commenced prescribing	9.1	79.6
The ability to prescribe improves the quality of care I am able to offer patients	4.5	93.1
Prescribing has shifted my focus from my core nursing/ midwifery skills	88.6	9.1
The introduction of this initiative has increased my level of job satisfaction	9.3	95.3

\*No opinion are omitted

Although the majority of nurse/midwife prescribers were in agreement that the introduction of the prescribing initiative had increased their level of job satisfaction, nurses and midwives with greater years of experience reported higher levels of satisfaction than those qualified for shorter periods of time. This difference in levels of satisfaction was statistically significant (K-W = 11.09, df = 3, p = 0.001) (see figure 9.2).

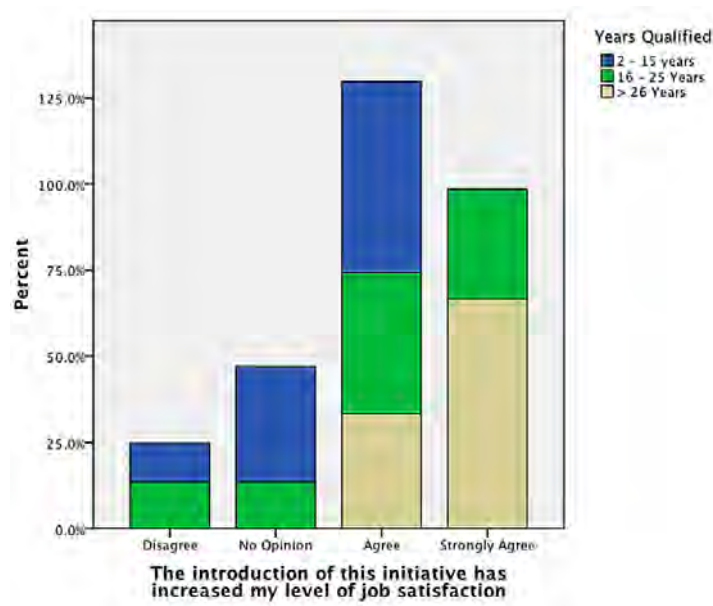


Figure 9.2 Levels of Job Satisfaction Associated with the Prescribing by Years Qualified

### 9.2.4 Prescribers' Evaluation of the Impact of their Role on Patient Care

Nurse and midwife prescribers were in agreement that the introduction of the initiative had directly benefitted patient care. Respondents identified convenience for patients/clients and enabling patients/clients to access medications quicker as the most positive outcomes of nurse/midwife prescribing. Over two-thirds of prescribers agreed or strongly agreed that nurse/midwife prescribing had reduced delays in initiating in-patient treatment as well as reducing the number of health care professionals a patient/client must interact with during their visit or stay in hospital. Although approximately half of respondents identified that the prescribing initiative had increased patient satisfaction levels, enhanced patient compliance and reduced the need for patients/clients with long-term illnesses to return to see their doctor as frequently as previously, a significant minority were uncertain or had no opinion in respect of these outcomes. Approximately half of the respondents also agreed that the prescribing initiative has reduced delays in discharge of patients/clients however over a quarter disagreed that this outcome had been achieved.

Table 9.3 Prescribers' Perceptions of the Impact of the Prescribing Initiative on Patient/Client Care\*

Item	Percentage Disagreement %	Percentage Agreement %
The introduction of the nurse/midwife prescribing initiative has reduced delays in discharge of patients/clients	15.9	48.6
The introduction of the nurse/midwife prescribing initiative has reduced delays in initiating inpatient treatment	6.8	77.2
The introduction of the nurse/midwife prescribing initiative has reduced the number of health care professionals a patient/client must interact with	15.9	79.6
The introduction of the nurse/midwife prescribing initiative is more convenient for patients/clients	2.3	93.2

Table 9.3 Prescribers' Perceptions of the Impact of the Prescribing Initiative on Patient/Client Care\* (continued)

Item	Percentage Disagreement %	Percentage Agreement %
The introduction of the nurse/midwife prescribing initiative has enabled patients/clients to access medication quicker	2.3	90.9
The introduction of the nurse/midwife prescribing initiative has increased patient/client satisfaction levels	4.7	67.4
Nurse/midwife prescribing enhances patient/client compliance	6.8	56.8
Nurse/midwife prescribing has reduced the need for patients/clients with long-term illnesses to return to see their doctor as frequently as previously	4.5	50.0
Patients/clients are supportive of nurses/midwives prescribing	0.0	77.2

\*No opinion are omitted

Overall there was a high level of agreement that the extension of a prescribing remit to nurses and midwives had a positive impact on patient care with over ninety-five per cent of prescribers agreeing or strongly agreeing with the statement (see figure 9.3).

Overall the introduction of the initiative has had a positive impact on patient care

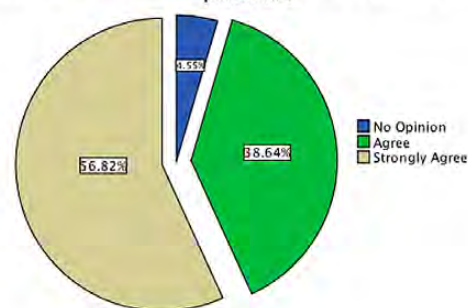


Figure 9.3 Prescribers' Level of Agreement on the Impact of the Prescribing Initiative on Patient Care



At this point it is worth comparing prescribers' evaluation of the impact of the initiative on patient care with that of key clinical stakeholders. On all statements related to patient/client care there were similarities between the attitudes of clinical stakeholders and prescribers (see table 9.4). Similar proportions of stakeholders and prescribers agreed that the initiative had reduced the delay in the discharge of patients, that it was more

convenient for patients, and that it would enhance patient compliance. There was also agreement between the two cohorts that nurse/midwife prescribing has reduced the need for patients/clients with long-term illnesses to return to see their doctor as frequently as previously and patients and clients are supportive of the initiative.

**Table 9.4 A Comparison of Clinical Stakeholders' and Prescribers' Perceptions of the Impact of the Prescribing Initiative on Patient/Client Care\***

Item	Clinical Stakeholders		Nurse/Midwife Prescribers	
	Percentage Disagreement	Percentage Agreement	Percentage Disagreement	Percentage Agreement
	%	%	%	%
The introduction of the nurse/midwife prescribing initiative has reduced delays in discharge of patients/clients	27.9	52.3	15.9	48.6
The introduction of the nurse/midwife prescribing initiative has reduced delays in initiating inpatient treatment	17.8	65.2	6.8	77.2
The introduction of the nurse/midwife prescribing initiative has reduced the number of health care professionals a patient/clients must interact with	24.1	64.2	15.9	79.6
The introduction of the nurse/midwife prescribing initiative is more convenient for patients/clients	2.2	90.5	2.3	93.2
The introduction of the nurse/midwife prescribing initiative has enabled patients/clients to access medication quicker	11.7	76.7	2.3	90.9
The introduction of the nurse/midwife prescribing initiative has increased patient/client satisfaction levels	3.6	54.3	4.7	67.4
Nurse/midwife prescribing enhances patient/client compliance	8.7	54.3	6.8	56.8
Nurse/midwife prescribing has reduced the need for patients/clients with long-term illnesses to return to see their doctor as frequently as previously	12.4	49.7	4.5	50.0
Patients/clients are supportive of nurses/midwives prescribing	2.2	77.6	0.0	77.2

\*No opinion are omitted

The highest level of agreement from both cohorts was that nurse/midwife prescribing was more convenient for patients and that it enabled patients to access medications quicker (see figures 9.4 and 9.5).

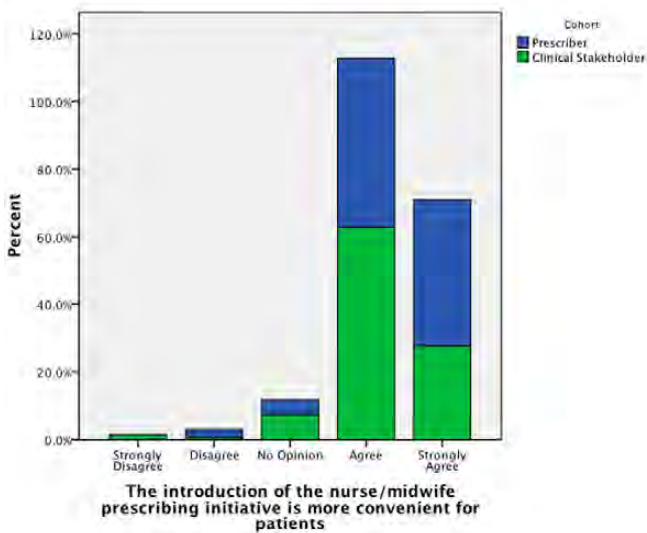


Figure 9.4 Comparison of Stakeholders’ and Prescribers’ Attitudes towards the Convenience of the Prescribing Initiative for Patients/Clients

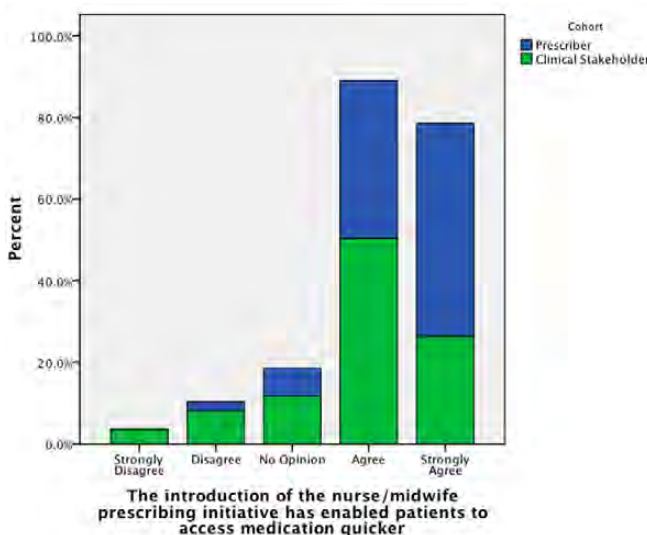


Figure 9.5 Comparison of Stakeholders’ and Prescribers’ Attitudes towards Patient Access to Medication since the Introduction of the Initiative

### 9.2.5 Prescribers’ Evaluation of Support Received for their Role

This phase of the evaluation reports on the level of support received by nurses and midwives for their prescribing role from other nurses and midwives, prescribing site co-ordinators, nursing management, the medical and pharmacy professions, the Health Service Executive and An Bord Altranais. It is evident from the results presented below that nurse/midwife prescribers received high levels of support at both local and national levels. Respondents were in agreement that the highest levels of support came from the prescribing site co-ordinator (93.4%) and nurses and midwives in the prescriber’s clinical area (93.1%). Nurse and midwife prescribers were also in agreement that they were facilitated and supported in their role by consultant and non-consultant hospital doctors (88.6%), their Director of Nursing/Midwifery (86.4%), the Drugs and Therapeutics Committee (86.4%) and pharmacists (75%)<sup>29</sup>. External to their organisation the majority of prescribers were in agreement that they were facilitated in their prescribing role by the Office of the Nursing Services Director, Health Service Executive (84.1%) and by An Bord Altranais (81.8%) (see figures 9.6 to 9.9).

I am facilitated in my prescribing role by my prescribing site co-ordinator

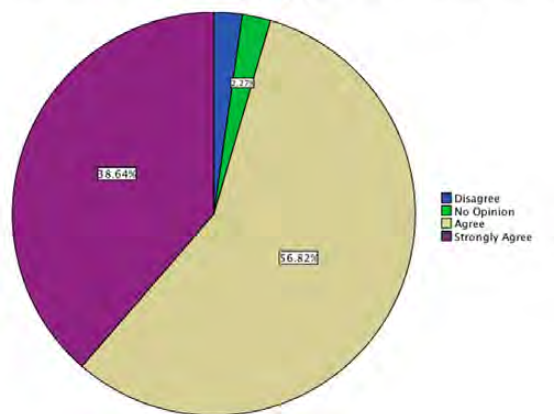


Figure 9.6 Support from Prescribing Site Coordinator

29 15% of respondents expressed no opinion in respect of support received from pharmacists

I am facilitated in my prescribing role by my prescribing mentor

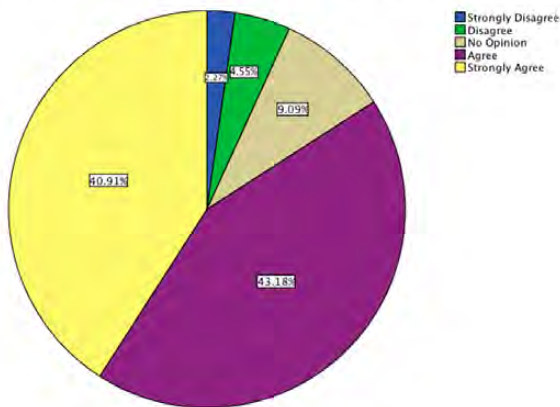


Figure 9.7 Support from Prescribing Mentor

I am facilitated in my prescribing role by the Office of the Nursing Services Director Health Service Executive

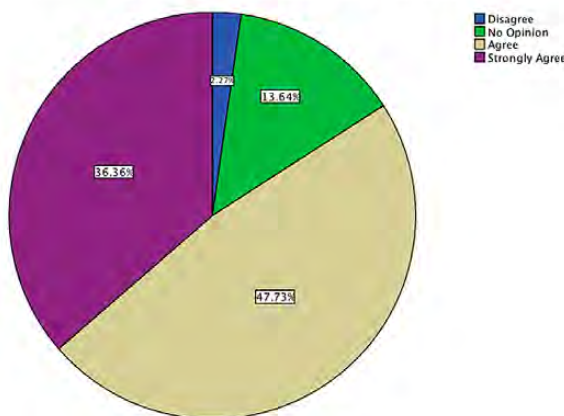


Figure 9.8 Support from Health Service Executive

I am facilitated in my prescribing role by hospital doctors/consultants

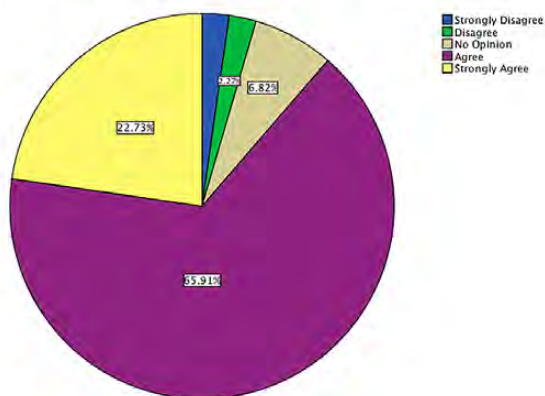


Figure 9.9 Support from Doctors/Consultants

### 9.2.6 Nurse and Midwife Prescribers' Evaluation of Continuing Professional Development

This section of the evaluation reports on respondents' access to, and experiences of, continuing professional development (CPD) (e.g. workshops, study days) since the commencement of their prescribing role. It was found that over three-quarters of the respondents had not undertaken any formal continuing professional development with approximately a quarter identifying that they had undertaken formal CPD relevant to nurse/midwife prescribing since completion of their prescribing preparation educational programme (see figure 9.10).

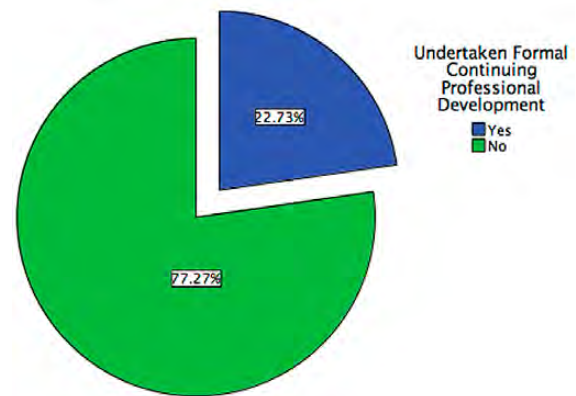


Figure 9.10 Proportion of Prescribers who have Undertaken Formal CPD Relevant to Nurse/Midwife Prescribing

The majority of those who had undertaken formal CPD related to prescribing stated they had done so through attendance at the Royal College of Nursing Prescribers' Conference in the United Kingdom. Other forms of formal CPD completed by prescribers included formal education days organised by a speciality subgroup, attendance at presentations on drugs by pharmaceutical companies and study days organised by their hospital.

Although the majority of nurse/midwife prescribers had not attended formal CPD relevant to prescribing, all surveyed stated that they undertook some form of self-directed CPD. The most cited form was keeping up to date through journals (specifically the journal *Nurse Prescriber*) and the use of protected non-clinical research time for self-directed study. Other examples provided by prescribers included attendance at journal clubs, networking with other Registered Nurse Prescribers,

accessing the Irish Medicines Board website for updates, and keeping reflective journals on prescribing practice. A number of prescribers identified reflective sessions and discussions on prescribing practice with their medical practitioner mentor as being particularly effective in keeping up-to-date. Prescribers also consulted the British National Formulary (BNF), Monthly Index of Medical Specialities (MIMS) and literature from the pharmaceutical industry in developing and updating their knowledge on prescribing practice.

As part of the evaluation, prescribers were asked to identify areas in which they required ongoing continuing professional development. The most frequently cited was in the area of pharmacology education, especially in relation to updates on new forms of pharmaceutical products. This was identified as a priority by sixty-two per cent of respondents. The next most frequently identified CPD priority, identified by a third of respondents, was the development of a national network of RNPs through which knowledge and experiences could be shared. Other CPD initiatives that were highlighted to facilitate the professional development of prescribers included an annual conference dedicated to nurse / midwife prescribing, guidance on developing methods to effectively audit prescribing practice and ongoing education on the legislation related to prescribing practice.

### 9.3 Evaluation of the Prescribing Initiative from the Perspective of Nurses / Midwives who Completed the Education Preparation Programme but are Currently not Prescribing

This section of the evaluation reports on the findings from the evaluation of nurses and midwives who completed the prescribing preparation programme but at the time of the survey had not commenced prescribing practice. The aim of this phase of the evaluation was to identify reasons why they had not yet started prescribing and to identify their future plans in relation to developing their prescribing practice. At the time of the survey 54 respondents identified that they had completed the

preparation programme but were not yet prescribing. The average time since completion of the programme was 10.63 months (SD = 4.98)<sup>30</sup> with a range of between 1 to 24 months. Of the respondents who were currently not prescribing 35.3% were on the An Bord Altranais register of Registered Nurse Prescribers. Of those who had not yet registered as RNPs eighty-seven per cent reported that they intended to register whereas thirteen per cent did not intend to register. Of those who did not intend to register a number of reasons were advanced. These included a lack of support from the medical profession and nursing management for prescribing to commence within their speciality, a lack of desire to commence prescribing as the role was not associated with increased remuneration, and prescribing was not now relevant to the respondents current position. Of those who did intend to register the majority hoped to do so in the immediate future. Eighteen per cent of respondents had, at the time of the time of the evaluation, received a date on which they could commence prescribing practice.

The reasons identified as delaying the initiation of prescribing practice for those who intended to register as an RNP are summarised in table 9.5. Almost 40% reported delays in agreeing their Collaborative Practice Agreement (CPA) with their local Drugs and Therapeutics Committee as the main barrier to initiating prescribing practice. This was followed by issues in agreeing drugs for inclusion on the CPA with a consultant or medical practitioner. Delays also occurred through candidate prescribers being on maternity or other forms of leave. A number of prescribers also identified that their inability to prescribe unlicensed medications within their specialist area had in effect blocked their prescribing practice. This was summed up by a written comment from a respondent who identified the problem with unlicensed medications:

Because so many of the drugs I need to prescribe are unlicensed it is no advantage to the patient, the service or my colleagues to be able to prescribe one commonly used product and not another. Limited prescribing contravenes the purpose of the [prescribing] programme as in my opinion it limits the professional development of advanced practitioners (nurse/midwife currently not prescribing 01001).

<sup>30</sup> The average length of time from completion of the registration programme to registration for prescribers was 8.18 months (SD = 4.68), range 2 to 25 months.

**Table 9.5 Reasons Advocated for Delay in Initiating Prescribing**

Reason	Percentage %
Delays with Drugs & Therapeutics Committee	37.7
Issues with consultant/medical practitioner mentor	13.3
Leave	11.1
Problems associated with unlicensed medications	11.1
Other	26.8

Other issues identified by respondents that delayed the commencement of prescribing included: problems with the registration process, problems accessing prescription pads, communication issues at local level, delay in communicating with local pharmacies about the introduction of the initiative and, change of career pathway within the health service that did not require a prescribing role.

As outlined in table 9.5 the principal point of delay in initiating prescribing practice was the process associated with agreeing the Collaborative Practice Agreement through the Drugs & Therapeutics Committee. Over sixty per cent of respondents were awaiting approval of their CPA by the Drugs and Therapeutics Committee. There was no difference in the length of time since completion of the programme between those nurses/midwives who had and those who had not their CPA approved by the Drugs and Therapeutics Committee. Both cohorts had, on average, completed their educational preparation programme within the last ten months.

## 9.4 Conclusion

Since commencing prescribing the vast majority of nurses and midwives reported that they were prescribing on a frequent basis with, on average, each prescriber administering approximately nine prescriptions per week. However, over half of the prescribers reported that they administered less than five prescriptions per week. A number of reasons were postulated for this rate of prescribing with the most frequently mentioned being the inability to prescribe unlicensed medications to their patient cohort. A majority of prescribers reported that

there were drugs and medications that they would like to prescribe as part of their clinical practice but were unable to do so. The principle reason for this constraint was their inability to prescribe unlicensed medications. Another constraint on prescribing practice, especially for those prescribers working in pain management, was the limits placed on the prescribing of controlled drugs by Schedule 8 of the *Misuse of Drugs (Amendments) Regulations 2007*. In certain sites nurse/midwife prescribers' local Drugs and Therapeutics Committee prohibited them from prescribing antibiotics.

The majority of prescribers agreed that they could prescribe safely and effectively and that they had the necessary skills and training to fulfil their role as a prescriber. They were also aware of their scope of practice and the issue of accountability associated with a prescribing role. Although a majority of respondents were confident in their ability to make a diagnosis and to write a prescription a minority expressed some concern regarding these facets of their role. A substantial minority of prescribers also expressed concern at the possibility of litigation associated with their role.

The instigation of prescriptive authority to nurses has had a positive impact on their clinical role; in particular it has enhanced their professional development, increased their overall job satisfaction and enhanced the care that they can deliver to patients. Furthermore, nurses and midwives were of the opinion that their ability to prescribe improved the quality of care they could deliver to patients, ensured better use of their skills and increased their professional autonomy. Nurses and midwives did not perceive that the addition of a prescribing role had impacted on their core nursing and midwifery skills however a majority reported that it had resulted in an increased workload. There was a general consensus among prescribers that the introduction of prescriptive authority for nurses has had a positive impact on a number of aspects of patient care including enabling patients access medications quicker, enabling in-patients to commence treatment earlier and increasing patient compliance. In comparing prescribers' opinions with that of clinical stakeholders on the benefits of nurse/midwife prescribing it was evident that there was consensus amongst the two groups that it had been a positive addition to patient care.

Nurses and midwives with prescriptive authority were highly satisfied with the level of support they received for their role at both local and national level. It was evident that prescribers were supported at every level of their organisation to help them develop their role. Support was high from medical and pharmacy colleagues as well as from their nursing and midwifery colleagues. At national level prescribers reported that they were well supported in their role by both the HSE and An Bord Altranais.

The experience of prescribers in relation to continuing professional development was variable. While the majority reported that they had not accessed any form of formal CPD related to prescribing following the completion of their prescribing education programme all prescribers reported that they engaged in informal CPD. The area in which prescribers identified that they required ongoing professional development was pharmacology.

The majority of nurses and midwives who had completed the prescribing preparation programme but were not yet prescribing at the time of the survey intended to do so in the near future whereas thirteen percent had no intention to register. Of those who intended to commence prescribing, agreeing their CPA with their local Drugs and Therapeutics Committee was the main barrier to initiating prescribing practice.

### 9.5 Summary – Key Findings from Nurse/ Midwife Prescribers' Evaluation of the Prescribing Initiative

- The majority of nurses/midwives reported that they were prescribing 'frequently' within their clinical practice.
- Over half of nurse/midwife prescribers reported that they administered five or less prescriptions per week.
- The inability to prescribe unlicensed medications was cited as the most common reason for administering five or less prescriptions per week.
- The majority of prescribers reported that they were constrained in their prescribing practice due to the fact that they were prohibited from prescribing unlicensed medications.
- Nurse/midwife prescribers were of the opinion that they were constrained in their prescribing of controlled drugs by Schedule 8 of the *Misuse of Drugs (Amendments) Regulations 2007*.
- A number of prescribers were prohibited from prescribing antibiotics by their local Drugs and Therapeutics Committee.
- The majority of prescribers were in agreement that they could prescribe safely and effectively and that they had the necessary skills and training to fulfil their role.
- The majority of prescribers were confident in their ability to make a diagnosis and to write a prescription.
- The introduction of the prescribing initiative has had a positive impact on the professional development of nurses and midwives.
- The introduction of the prescribing initiative has had a positive impact on the levels of job satisfaction experienced by nurses and midwives especially for nurses and midwives with greater years of experience.
- Nurse and midwife prescribers reported that the ability to prescribe had resulted in a better use of their skills in the delivery of patient care.
- Nurse and midwife prescribers reported that the addition of a prescribing role had resulted in an increased workload.
- Nurse and midwife prescribers were in agreement that the introduction of the initiative had directly benefitted patient care including enabling patients quicker access to their prescriptions.
- There was a consensus among prescribers and clinical stakeholders that the prescribing initiative had positively benefitted patient care.
- Nurses and midwives with prescriptive authority were highly satisfied with the level of support they received for their role at both local and national level.
- The majority of prescribers had not taken any form of formal professional development related to prescribing since completing their prescribing preparation programme.

- All prescribers reported that they had undertaken informal CPD since the completion of the prescribing preparation programme; the most common form of CPD was keeping up-to-date through academic and professional journals.
- The area in which prescribers identified that they required ongoing professional development was pharmacology.
- Of the nurses and midwives who had completed the prescribing preparation programme but were not on the An Bord Altranais Register for prescribers, 87% intended to register whereas 13% did not intend to register as an RNP.
- Most respondents identified the process of agreeing their CPA with their Drugs and Therapeutics Committee as the single most predominant barrier to them commencing prescribing practice.

# Chapter 10

## Qualitative Analysis of the Perspectives of a Sample of Nurses and Midwives who Completed the Prescribing Preparation Programme

### 10.1 Introduction

The focus in this chapter is on the qualitative component of the study, in which the accounts of 18 participants who had successfully completed the nurse/midwife prescribing educational programme are drawn on to facilitate the overall evaluation of the initiative.

The chapter first discusses how participants came to undertake the nurse/midwife preparation programme, and how they viewed their educational preparation for the prescribing role. The barriers, supports and processes involved as participants prepared to practise as nurse/midwife prescribers are then considered. For those participants who had begun prescribing at the time of data-gathering, their experiences in their new role are then explored, from the first prescription through to how they believe that prescribing impacts upon their nursing function and patient care. Here, participants' perspectives on the impact of limitations to the range of drugs that they can prescribe are also considered. Finally, participants' views on the manner in which nurse prescribing is monitored and audited and their views on how this may be managed in the future are presented.

### 10.2 Becoming a Nurse/Midwife Prescriber

Participants' route into prescribing varied across the sample, with some actively lobbying their employers to support them to undertake the nurse/midwife prescribing programme, while for others, the impetus came from the Director of Nursing or Midwifery, or another senior colleague.

The most common pattern emerging was for already motivated and enthusiastic individuals to be positively received by Directors who supported them.

I saw it and I kind of thought, 'I'd love the autonomy and authority that goes with that,' so I rang [the educational institute] ... then I actually kind of approached my own nursing manager and the nurse practice development coordinator who were supportive. (Nurse, 12).

Whether or not the approach to undertake the educational programme came from the Director of Nursing or Midwifery, in the case of this sample, it can be said that the nurse/midwife prescribers were a highly motivated group who chose this additional qualification as a voluntary aspect of their role. An intrinsic motivating factor reported by many was the promise that prescribing offered to make their practice more holistic, improve patient care, and develop a more autonomous role.

It was something that was going on in my head anyway, I suppose between herself and the professional development coordinator, they sort of suggested it to me and really I was trying to put my practice together as a whole and make it much more holistic than it had been. I thought this would be a great addition to the practice, to just make it better for the patient basically. (Nurse, 1).

I think professionally I had come to a level of maturity maybe that I realised it was very frustrating to me to realise what needed to be done and to chase after somebody to do it. ... Especially the weekends or whatever ... at night, if there was an emergency in theatre, if somebody needed some pain relief, there was going to be maybe forty-five minutes, fifty minutes in delay. [Midwife, 3).

For those in roles such as that of Advanced Nurse Practitioner, becoming an RNP was perceived by them to be a natural evolution of their role. In one such case, nurse prescribing by protocol within the nurse's scope of practice was already in place. One participant working in the field of psychiatry reported to be motivated most strongly by the possibility of legitimately being in a position to discontinue medication rather than in initiating new drug therapy, an issue to which we will return a little later.

When asked about the fact that there was no additional remuneration for their prescribing role, participants did not view this as a disincentive, invoking arguments about the benefits of prescribing to their patients, to the expediency of their work, and to their own levels of job satisfaction as sufficient to offset the lack of monetary benefits.



### 10.3 Educational Preparation to Become a Nurse/Midwife Prescriber

Two educational sites administer the prescribing education programme, and patterns emerged in data suggesting that different issues applied to each programme, and indeed to various cohorts of the same programme. Overall, most participants appeared to be satisfied with the programme, though this seemed to apply to one site more than another; that said, there were also criticisms of both.

At one educational site, those in Advanced Nurse Practitioner roles who had undertaken additional pharmacology previously during their ANP preparation were dissatisfied with aspects of the pharmacology teaching, indicating that some of the content was out-of-date. However, they also noted that many of the pharmacology lectures were excellent, and built on their prior knowledge. Although previously having covered pharmacology at the same level as medical students for their ANP programme, almost all commented that they valued the opportunity for revision and that any further exposure to pharmacology that would enhance their knowledge on the topic would be well-received. One ANP did note that she was not convinced that the pharmacology delivered on the prescribing programme would have been sufficient had she not had the previous ANP programme exposure.

Some ANPs were critical of the teaching of advanced physical assessment on the prescribing programme, which they deemed to be of a far less rigorous standard than that taught in their ANP programme. Part of their difficulty was the large number of students being taught at a time (they believed it should be on a one-on-one basis), although there were other difficulties to do with the level of detail involved in the examination. However, there were also positive views of the physical assessment component of the prescribing programme; an ANP described the advanced physical assessment as the highlight of the programme as follows:

I found the greatest thing about the prescribing course is the fact that you learned how to assess patients. It de-mystified the jargon, it de-mystified the findings, it helped you come up with diagnosis. (Nurse, 14)

However, that same participant suggested that advanced physical assessment should be taught in combination with the interpretation of laboratory tests and the patient's biochemical status in order to accurately make a diagnosis prior to determining a treatment option.

To move on to more generic issues, a common concern across the sample as a whole concerned the balance between the teaching of pharmacology at a general level and teaching about drugs associated with particular specialities. Although most participants commented on having to study aspects of pharmacology that resided outside of their scope of practice whilst their own area was excluded, the disciplines of children's nursing and midwifery in particular highlighted issues in this area. One children's nurse described how she was required to relearn adult medicine, a topic that she had not covered in twenty years. Most participants in a range of specialties recognised that each group was small and that educational providers could not be expected to provide for all in a comprehensive way. However, they nonetheless aired issues about aspects that they believed could be addressed within the limitations of the programme. One children's nurse, for example, believed that some content on identifying which drugs were licensed for use in children would have helped as that information she found difficult to establish.

I do understand there is so few of us there that you know we're probably too specialist really but one of the areas that would have really helped us along would have been to identify medications that were licensed or unlicensed in children, even trying to find out that information they just weren't interested in paediatrics. I felt we were a thorn in their side and we just kept asking, bringing it back to paediatrics, bringing it back to paediatrics and you know a lot of the time the answers were not there. (Nurse, 11)

Another area where participants believed that efforts could be made to address the generic versus specialist balance related to the programme examination. Examinations, some believed, could have been constructed with a sufficient amount of choice to allow individuals to focus on areas that came within their scope of practice.

A further issue was that students believed that there was an excessive amount of 'nursing' content in the prescribing preparation programme. At one site in particular, the amount of time devoted to reflective practice and a reflective assessment came in for criticism. The teaching of communication skills was also an issue for some prescribers, although to a lesser extent. Course participants voicing issues related to reflective practice and communication skills believed that those attending the programme would have covered these previously, and that they would be better replaced with pharmacology content.

But at the level that we are practising and you have got to remember most people that were on the course, certainly at CNS level and above, there were a few staff nurses but they would have been competent senior staff nurses ...and reflective practice is fine to a level but there was too much emphasis. There were lectures in there about communication skills, you know like we have done that, we have been there and the lecture was very good but we were all looking at this communication skills when you are talking to a group of experienced people. (Nurse 2)

With regard to medical mentorship during the programme, participants described varying levels of this ranging from the mentor's full engagement in the process with high levels of teaching over the required number of hours, to far more sketchy engagement of the mentor. A few participants felt that the mentor was content to sign off on their placement, but showed little enthusiasm for the mentorship role, mainly because of their existing workload. One participant reported her suspicion was that these consultants believed their role to be to mentor medical students rather than nurses, although they never vocalised this. Another believed that the consultant was the person best placed to become a prescribing mentor, believing that they had developed expertise in prescribing practice.

At the time of the interviews, all participants had, as indicated successfully completed the prescribing preparation programme. Those prescribing were asked about continuous professional development for the role, and the dominant view was that some mechanism ought to be put in place to ensure that prescribing knowledge remained current. There were various

suggestions proposed, such as study days or an optional pharmacology refresher course similar to the one already completed but without the pressure of having to undertake examinations. One participant reported that at her hospital, an informal local arrangement was in place where all nurse prescribers at the site organised a monthly breakfast, during which a pharmacist might be invited to give an update on a drug used fairly widely. There was a strong perception across the sample that individual prescribers had a responsibility to educate and appraise themselves about the drugs that fell into their own scope of practice, and that some way of making this transparent to auditors would be useful. Evidence of attendance at conferences and updates was one suggestion proposed.

Throughout the interviews participants were very positive about the ongoing support and information available from the Office of the Nursing Services Director, Health Service Executive and from the prescribing site co-ordinators.

### 10.4 Preparing to Practise as a Nurse/Midwife Prescriber: Barriers, Supports and Processes

A strong theme in data was for participants to refer to their scope of practice as a starting point for developing their Collaborative Practice Agreement (CPA). The first step was for the participant to document what he or she believed to be the drugs he/she most needed to prescribe. In many cases the list was then passed on to the medical consultants for comments. In some cases, particularly where the medical consultant had a good relationship with the candidate nurse/midwife prescriber, an additional drug or drugs may have been suggested. In other instances, a drug may have been removed that may not have initially been recognised as problematic (unlicensed or off-label drugs).

The next step in the process was the candidate prescriber submitted the list of drugs that they intended to prescribe to the Drugs and Therapeutics Committee, and one participant herself also made a presentation of their intended prescribing practice to the Committee. In one case a senior member of staff from the Office of the Nursing Services Director of the Health Service Executive gave a presentation to the Committee on behalf of a participant, which the latter found to be of great benefit

because the explanation by the former of this new initiative served to appease some of the concerns of the Committee.

The submission of the CPA to the Drugs and Therapeutics Committee resulted in various outcomes for individuals. In some cases, queries about particular drugs were raised by the Committee, and the CPA was returned for revisions, which could make CPA approval a protracted process, as the following participant experienced:

I found the Drugs and Therapeutics Committee, I am sure they do very good work in an awful lot of things. I am sure they are very busy people in their own areas and they are doing this as extra and they meet once a month but, they were not helpful at all. They delayed and delayed and delayed things. I think I got off lighter than most. I have about fifteen drugs in total... what I have an issue with is that you as the prescriber are not let go to the meetings. Which to me defies any logic, you can't sort the problem there and then. The Practice Development Coordinator or the Site Coordinator goes. She doesn't know your drugs. ... So then they question and she has to come back and respond at the meeting next month. So this went on for about three to four months. So like I got my exam results at the end of June and I because I want, no delays, I just went boom boom boom and I would be considered one of the lucky ones in that I suppose it took four months for the Drugs and Therapeutics Committee. The big thing that was coming back to me was "Oh you can't have these five drugs, they are from the one group and they are not on our formulary". So it took me a while to cop that the formulary was the hospital issue and they would, which is fair enough you know, of not having five different drugs with the one group. So if it wasn't on the formulary they wouldn't pass it. (Nurse, 5)

The requirements of the Drugs and Therapeutics Committees seems to vary across different clinical sites: in some cases, it appears that a list of drugs suffices, while at other sites, considerable details about each drug are needed. In one case, the participant (very willingly) agreed to write a detailed account about each and every drug that she prescribed. At the time of the interviews, a number of participants were still negotiating the terms of the CPA.

Most participants had a strong and positive working relationship with the consultant in their field (who was also their medical mentor) and for these, the initial drafting of the CPA was largely unproblematic. A number of participants referred to the notion of trust that had developed between themselves and their medical mentors. This trust was usually rooted in an established and sometimes extended working relationship and the nurse's/midwife's experience in the field that she believed her medical colleagues valued.

For others, for example in one maternity site, the participant felt restricted by the consultant about what drugs she could include. In most cases, where there was opposition to nurse prescribing, it tended to come from other consultants at the same hospital as the participant and this opposition tended to reverberate at the Drugs and Therapeutics Committee. In some cases, particular drugs with a high risk of administration error created difficulty, if these were central to the role of the particular nurse/midwife in question; in one case at least, opposition to a key drug meant that the entire CPA was delayed. In a few cases, resistance was manifest from the Pharmacy Department, although dialogue with key pharmacists resolved some issues in such situations. Participants believed that opposition from pharmacy was rooted in that group's concerns about safety, and in addition, to the presence of occupational tensions. Pharmacists, participants noted, were themselves attempting to negotiate a prescribing role, although the split between patient examination, diagnoses and prescribing in their case was a central hurdle for them. A few commented on the prescribing initiative presenting such a cultural departure from previous images and expectations about nursing that it required a level of adjustment in thinking on the part of associated professional groups. A few participants mentioned the fact that they had been given either a different size prescribing pad, or a pad with pages of a different colour to that of doctors (Nurse, 14). At least one of these queried the necessity of this practice as it differentiated their prescribing practice as 'different' and 'lesser' than that of their medical colleagues.

### 10.5 The Experience of Prescribing

A strong theme in data was that, for those approved to prescribe, the first prescription was a poignant experience, executed with great care and attention. For some it bought a sense of fear.

I remember the fear and panic of writing my first prescription. I was terrified!... I think I put it off for like a week [laugh]! I thought "I can't cope with that now, I have not to do that now" and then it was a big step! (Nurse, 3)

For others the experience was described more as thought-provoking than frightening:

You just kind of get this thing "Ok this is me now writing it". "The buck stops with me" and it was .. 'frightening' is the wrong word - kind of thought provoking. ...you know, 'Is this really what you wanted to do'. ....You are now totally responsible. But that only lasted for the first two and then I forgot about it. (Midwife, 5)

Many described their anxieties about misspelling, writing illegibly, omitting essential information from the prescription sheet, or making an error. Double-checking of doses and details was common. These anxieties were short-lived, and overall, the experience of prescribing was reported as a consistently positive one across the sample. As indicated earlier, the possible additional stress of extending their role and taking on new responsibilities appeared to be well compensated by the additional autonomy, efficiency and job satisfaction that ensued (this issue will be considered in greater detail a little later).

Virtually all participants referred to their scope of practice, and were satisfied with the constraints that this imposed on their prescribing. Participants viewed this as a positive limitation that enabled safe practice and enhanced their sense of competence and expertise within their own field. A strong theme in data was participants' sense of reluctance to push the boundaries they had themselves defined by negotiating for greater prescribing powers that could stretch them outside of their scope. None of those already prescribing appeared to find the experience to be particularly stressful, and they noted that the limitations placed on them by their scope of practice was largely responsible for this.

Of those already prescribing, many were conscious of the frequency with which they used their prescriptive powers. Several noted how conservative they were about the act of prescribing and reported trying out alternative treatment options first where feasible rather than relying on pharmaceuticals as a first line intervention.

I still would be conservative about prescribing, especially about my antibiotic use and in a lot of cases I would actually bring a wound back much sooner rather than prescribe for it. (Nurse, 1)

I think it is you are not so quick to write [a prescription] and run. You stay; you try different things you know. Pain relief or whatever. "Have you tried the shower" if she is in labour you know, massage. To be able to take the time to sit down and see what is happening with you. Do you know? ... Sometimes a woman is just scared and if you can talk to her and say: "look I understand it" you know "don't be frightened" ... all those things are just as valid as giving Pethidine or something. [Midwife, 3)

A few commented that they wondered whether their caution about prescribing might trigger doubts among those in the HSE who were monitoring their prescribing activities about the value-for-money involved in having sent them on the prescribing programme. A point made by one participant (a CNS) was that in her role as a specialist nurse, she frequently stopped medication that she deemed to be unnecessary which brought benefits both in terms of the patient's health and the cost to the health service. However, she felt aggrieved that stopping medication was not captured by the *Nurse and Midwife Prescribing Data Collection System*.

I would see and that's my big bugbear is that an awful lot of my assessments I stop medication. I stop medication more than start it. Because I will get people who will have been on medication and they come to me specifically for their condition. And I do tail-off medications. Or based on the assessment, I kind of say "You should never have been on that, let's try stopping it". And I have the onus to stop it. There is no problem. So those drugs are a hundred Euros a month...But nobody wants that recorded. They all want to record what I am prescribing and that's my big bugbear. I stop more than I start. ... And even making a judgement not to put somebody on is often a better judgement. (Nurse, 5)

Another participant noted that the volume of her prescriptions had fallen since the early weeks of prescribing. This, she believed, was in part at least due to the fact that instead of writing prescriptions for over-the-counter drugs, she now merely wrote them on a non-prescription pad.

## 10.6 Limitations to the Range of Drugs that a Nurse/Midwife can Prescribe

The limitations to prescribing practice associated with prescribing unlicensed medications was felt in a range of specialisms, however, it impacted more strongly in some areas such as in children's nursing, although not all RNPs working in children's nursing were affected to the same extent. Other factors also inhibited the range of drugs that nurses can prescribe in specific fields; according to a participant working in paediatric oncology, children receiving cancer treatment tend to be on clinical trials so the majority of their treatment falls into the unlicensed category. A few participants indicated that it was difficult to know definitively what was licensed for the purposes of the CPA because some drugs 'are off licence [unlicensed] one week, on licence the next week.' That participant's suggestion for overcoming the restriction was that those safe products that were unlicensed (generally because there was no financial incentive for a pharmaceutical company to licence them) should be permitted on the CPA with the expressed permission of the consultant. One midwife participant indicated that local policies and procedures covered staff to use unlicensed drugs at the clinical (maternity) site where she was employed, although she also added that her colleague working in the neonatal division was heavily compromised by the An Bord Altranais regulations regarding unlicensed medications.

Regulations around the use of controlled drugs was an issue for those working in pain management restricting their prescribing options (morphine was the only controlled drug they were permitted to prescribe). One nurse working in this speciality commented that she constantly reviewed her rationale when prescribing morphine; she always checked that the prescribing of morphine was to observe best practice for that case rather than because other options were legally closed off.

## 10.7 Conceptualising Prescribing as a Nursing/Midwifery Function

As indicated in the literature review of this report, one of the criticisms of the nurse/midwife prescribing initiative internationally is that it blurs the boundaries between nursing/midwifery and medicine, with the possibility of eroding the nurse's/midwife's role by taking on more and more biomedical functions hitherto within the jurisdiction of medicine. When participants in the sample were challenged to reflect on this argument, the majority were quick to defend the distinctness of the nurse's/midwife's role from that of the doctor, and far from threatening the role of the nurse/midwife, a strong and consistent perspective was that nurse/midwife prescribing actually enhanced that role. To this effect, participants invoked the discourse of holism and completeness, central to the identity of nursing and midwifery. Nurse/midwife prescribing, they argued, enabled and empowered them to give 'complete' care autonomously in all its realms, and this now included drug therapy captured within the biophysical realm of the holistic model. Thus, unlike doctors who had a culture of formalising a nurse's/midwife's clinical judgement on a pharmacological treatment by the practice of writing a prescription at a nurse's/midwife's request, often without having examined the patient, participants in the study prided themselves in the wholeness and completeness of the patient encounter that prescribing allowed. Thus, far from threatening the nurse's/midwife's role, the view was that nurse/midwife prescribing – hitherto the missing link – represented the ultimate in holistic care.

I knew it was, for me it was the missing link ... I do total holistic care from assessment to treatment planning to evaluation and discharge. So it was the missing link. I used to be running around getting somebody to fill a prescription for me. (Nurse, 5)

And I am very autonomous within the role (ANP) and prescribing has certainly added to that, but it was the holism of the role that I wanted to add... The prescribing is like a piece of the jigsaw that has just fitted in so well with my practice, it has been absolutely brilliant. And as I said, my prescribing is limited, local anaesthetics; antibiotics, pain relief and a few more little bits, and they are the things that I would use the most. And it fits beautifully. The way

that I make sure that I am still utilising my nursing role is the holism of my role. The doctors, they see a broken arm, they prescribe and give the patient all the education around that. I now do all of that. So I am bringing my nursing into everything that I do, so I am doing all the education, I am doing all the drug education, the pharmacology, everything. I am giving them everything all in this one consultation. (Nurse, 1)

It means you can give holistic care. I know it sounds like a twee term but it is actually is the case. You see the patients, you decide, 'Yes I can do this', you assess them ... you prescribe the drug, the assessment at checking the bloods and all that can be quite time consuming but it does give you a great sense of satisfaction and you can go back and see your patient and they say yes my pain is much better under control so it is the whole package. (Nurse, 13)

Participants used various ways to describe a new sense of holistic nursing that the autonomy associated with prescribing brought. One talked about 'the missing piece in the jigsaw', another about 'completing the picture,' while another commented that she now felt like a 'real' nurse. Many participants had experiences of being mistakenly identified as doctors by patients, and all indicated that they were quick to correct their mistaken identity. A few indicated that they became annoyed when other hospital staff 'slagged' or teased them by addressing them as 'Doctor'.

However, whilst participants exalted the benefits to care that nurse/midwife prescribing brought, most cautioned that it be approached judiciously, and should not become the preserve of every nurse without extended additional preparation. However, some participants were of the view that all nurses/midwives who wished to prescribe should be allowed to do so within a limited range, assuming that they were adequately prepared and operating within their scope of practice. In the following quotation, one CNS proposes that the basis for nurse prescribing should start early in nursing education, and suggests that this should supplant what she deemed to be the excessive emphasis on nursing models in undergraduate education.

I can understand the restrictions and cautiousness but I think sometimes it may be too cautious and I do think they need to go, like start from the

undergraduate. Have a big pharmacology input and work on it from undergraduate. Drop a few of these Benners [reference to Patricia Benner's nursing model] ...get into the real world you know. (Nurse, 5)

It appears that at least some non-prescribing nurses/midwives may not themselves be acceptable to the notion of nurse/midwife prescribing, even by their senior ANP/AMP colleagues. An indicator of this came in the narrative of one participant who stated that they had experienced far greater tensions and negativity from their nursing colleagues about their prescribing role, with one insinuating that they were moving into a medical role. That participant was under pressure from nursing colleagues to put their CPA on the hospital's intranet for the purposes, they believed, of being monitored by them, a pressure which they ultimately resisted. However, this response from within the profession was rare, as most participants found little or no negativity to their prescribing from within either nursing or midwifery.

### 10.7.1 Integrated care

Let us return briefly to the issue of the importance for participants of the integration of patient history-taking, physical examination, diagnosis and treatment, because this was a strong feature of participant narratives. All participants stressed the importance of this in executing their new authority, claiming that they would never write a prescription without first having examined the patient. One participant reported that she had been approached by her midwifery colleagues to prescribe for patients in a similar manner in which a doctor might be conventionally approached (viz, 'Will you write him/her up for x'). She was adamant that irrespective of how busy the routine was, she would insist on examining the patient first. In another example, a participant described how a colleague from a separate clinical site, apprised of the participant's new prescriptive authority, approached her to write a prescription for a personal ailment. The participant refused on the grounds that it was neither within her scope of practice nor within the clinical site covered by her normal role.

One of the key outcomes for participants of this integrated care was that it formalised the nurse's/midwife's input into clinical decision-making and diagnosis that arose previously. Participants' accounts indicate the commonplace practice of the nurse/midwife

recommending a treatment intervention, and the doctor simply signing the prescription form.

I was seeing the patient, I was making the diagnosis, I was doing everything and then I had to go and ask a doctor, who hadn't seen this patient, to prescribe such and such a drug. (2)

Well it was a frustration we never had it [prescriptive authority] ... I suppose nurses were always... I mean all we were doing was handing over the prescription form [to the doctor] saying "Write this, write that". I did it in paed, I did it in you know. ...and you directed people in that way anyway and I mean the medics always complied with it. There was never any problem. Do you know? And I found in my own area in public health and when I was doing specialist, you know whatever I, they would acknowledge my expertise. (5)

Accounts suggest that busy doctors tend to trust the nurse's/midwife's recommended course of action and do not usually request to see the patient, although this practice reportedly varies from physician to physician and from condition to condition. Thus, integrated care had the advantage of saving time associated with 'chasing up' doctors who were not constantly available in all departments, with concomitant reduced waiting times for patients.

Overall the advantages of nurse prescribing are succinctly captured in the following quotations:

I don't need to be calling up an intern, a SHO or a registrar to get a drug prescribed therefore the patient is waiting less in my clinic and giving them a drug, prescribing them a drug which I know about which I can discuss with them about, I can go through things like side-effects and ensure that they have an awareness of it which I feel helps my role in the long run. Because when I see them in review clinic I know what I'm looking for, I also try to give them the information and complications that are picked up much quicker so it's impacted from an autonomous point of view – I think it's having a huge effect ... I mean I'm picking up things myself which had being missed and I feel that patients don't see me as just purely a nurse prescriber they see me as nurse whose able to do something for them in a timely and effective manner (Nurse 14)

They [patients] are getting their drugs in a more timely fashion; I will see them every day. ...patient satisfaction ... definitely as pain management I suppose there is an awful lot of literature to suggest that poorly controlled acute pain can turn into chronic pain. It's not that controlled so if you nip it in the bud and control post operative pain well it won't evolve into any chronic pain syndrome which will obviously impact on the patient and economic impact as well. (Nurse 13)

Just one participant reported that her prescribing role added to her workload insofar as she undertook a far more detailed assessment on patients than would be the case if she were merely recommending a course of treatment to a physician.

## 10.8 Monitoring and Auditing of Nurse/Midwife Prescribing

The requirement by the HSE for prescribers to record all prescriptions electronically for auditing purposes was frequently cited as the most time-consuming aspect of prescribing, although some participants found this more arduous than others.

The database is as I say, it's fine em I am glad I don't write too many prescriptions because if I thought if I was working in A&E and I had so many, like no matter what it is, it takes a couple of minutes to do. Yes it is self-explanatory but it takes a while to open up, put it in. So you add that on to everything else you have to do. It does take time. You know it will all add two to three minutes. (Nurse 5)

In particular, recording for local audits contributed to the bureaucracy, although it should be noted that there were a small number who found that that recording in general was little or no burden. Participants accepted that given that nurse/midwife prescribing was a new initiative, auditing was essential. Indeed, a few nurses/midwives were very heavily in favour of high levels of monitoring both within their own clinical site and by the HSE because it provided an additional safety net for patients and could also provide a learning opportunity should any issue arise.

In addition, there was a general acceptance that over the longer-term – after the prescribing initiative had become

established – a certain level of external surveillance was acceptable for accountability and patient safety reasons. However, across the sample, there was a sense of dissatisfaction that all prescribers were not subjected to the same level of monitoring as were nurses. A number of participants believed that the standards and educational preparation required of nurses before they could achieve autonomous practice, including drug prescribing, were more rigorous than those required by medical practitioners. Nurses/midwives, they deemed, had to ‘prove themselves’ to a greater degree.

In relation to the requirement to update the CPA annually, most participants accepted this as a reasonable requirement of a new venture. However, many hoped that as the project rolled out and became more established, a lengthier time period over which a CPA would be valid might be introduced. When asked whether they believed that their prescribing should always be restricted by a CPA, many participants were uncertain, but there was a sense across the sample that unrestricted prescribing was not to be embraced; scope of practice remained central to participants perspectives on how far their prescribing should extend.

### 10.9 Conclusion

The qualitative component of this study suggests that the first cohorts of nurse/midwife prescribers in Ireland are largely self-selected, self-motivated and very proactive in getting their prescribing role formalised. Whilst various deficits in the educational preparation for the role were highlighted, participants in this study displayed a respect for their new authority that bodes well for safe prescribing practice. Rather than canvassing for greater prescribing powers for themselves and other nurses/midwives, participants erred on the side of caution and were satisfied with the limitations placed on them by their scope of practice. However, participants working in specific areas affected by legislative restrictions (unlicensed and off-label drugs and those that come under Schedule 8 of the *Misuse of Drugs (Amendments) Regulations 2007*) believed that they were impacted upon negatively by these and that this compromised their prescribing role. As has been found in other studies (BMA 2005; Bradley et al 2007) impediments to the introduction of nurse prescribing, and specifically in completing the CPA have come from medicine and pharmacy, although

individuals within both occupations have also been cited as offering high levels of support. Whilst individual medical support of specific nurse/midwife prescribers was very high across the sample, more general medical opposition to nurse/midwife prescribing as an initiative was evident at some clinical sites, restricting or impeding the initiation of prescribing for some participants.

With regard to the impact of prescribing on the nurse’s/midwife’s role and function, in contrast to Nolan *et al*’s (2001) study where nurse prescribing was found to result in increased workloads and reduced patient contact, data from the qualitative component of this study for the most part suggests that there was no apparent increase in workload, and that patient contact was less fractured and therefore more favourable. Concurring with Luker and McHugh’s (2002) study, participants in the present study reported more comprehensive, higher quality care. In particular, it saved nurses/midwives the time otherwise required to pursue a doctor for a prescription. Overall, participants felt that prescribing allowed them to complete the cycle of holistic care, enhanced their job satisfaction, and made for more efficient care.



# Chapter 11

## Discussion and Conclusions

### 11.1 Introduction

Legislation providing nurses and midwives with prescriptive authority was introduced in Ireland in 2007 with the first prescribers commencing practice in 2008. Since then there has been an exponential growth in the number of nurses and midwives registering with An Bord Altranais as Registered Nurse Prescribers (RNPs). This report is the first major evaluation of the initiative since its inception and it evaluates the impact of nurse/midwife prescribing from a number of perspectives. This chapter discusses the findings of an extensive evaluation of nurses', midwives', stakeholders' and patients', clients' and parents'/guardians' perceptions of the prescribing initiative and its impact on the health services.

### 11.2 Profile of Nurse/Midwife Prescribers

Nurse and midwife prescribers who had completed the prescribing preparation programme had extensive clinical experience and the majority were employed at higher nursing grades (e.g. ANP/AMP, CNS/CNM). Practically all respondents held a third-level qualification with over half educated to master's level. This profile matched the demographics of nurse/midwife prescribers in the UK where three-quarters of the respondents were educated to degree level or higher (Courtenay *et al.* 2006, 2007; Courtenay & Carey 2008) and the majority of prescribers had ten or more year's clinical experience.

It was found that at the time of this evaluation that over half ( $n = 54$ ) of those who had completed the prescribing programme were not yet prescribing. However, at the completion of the evaluation (June 2009) ninety-three nurses and midwives who had completed the prescribing preparation programme were registered with An Bord Altranais (Office of the Nursing Services Director, Health Service Executive, 2009). The principal barrier to a nurse/midwife commencing prescribing was the time spent in agreeing their Collaborative Practice Agreement with their local Drugs and Therapeutics Committee and/or a medical practitioner.

A proportion of nurses and midwives administered less than five prescriptions per week and the reasons for this were multivariate. In some cases prescribers were stopping medications and this was not captured on

the prescribers minimum data set<sup>31</sup>, in other situations where over the counter medications were required as an intervention these would be advised off-prescription. Another reason for the lack of prescriptions in some areas was the restrictions placed on prescribing practice by the prescribers' inability to prescribe unlicensed medications. A number of studies have highlighted that restrictions on prescribing can impact on the number of prescriptions that a nurse/midwife writes in clinical practice (Luker *et al.* 2001). Over half of respondents in this study reported that they were restricted in their prescribing practice. Restrictions were identified in three main areas: 1) the prescribing of unlicensed medications; 2) the restrictions imposed on controlled drugs by Schedule 8 of the *Misuse of Drugs (Amendments) Regulations 2007* and; 3) the restrictions placed on the prescribing of antibiotics by Drugs and Therapeutics Committees.

There is evidence internationally that nurse/midwife prescribers prescribe less than their medical colleagues (Avorn *et al.* 1991) and that the prescribing of antibiotics by nurse/midwife prescribers was not problematic. Latter *et al.* (2005) reported that nurses and doctors were confident in prescribers ability to prescribe antibiotics and that they were not over-prescribed by nurses and midwives with prescriptive authority. However, there is concern in respect of antimicrobial resistance due to the overprescribing of antibiotics. Latter *et al.* (2005) report on the concerns expressed by The Specialist Advisory Committee on Antimicrobial Resistance (SACAR) which recommended that there be limitations on the types of antibiotics available for nurses to prescribe.

The prescribing of controlled drugs by nurses and midwives with prescriptive authority is regulated by MDA Schedule 8. This was introduced specifically to identify the drugs, and route of administration for which a Schedule 2 or 3 medication can be prescribed by an RNP (An Bord Altranais 2007). In its present form Schedule 8 is inhibiting the prescribing by nurses/midwives, especially those working in the area of pain management, of certain controlled drugs. This evaluation recommends that there be a review of the relevant medicinal product regulations for Schedule 8 with a view to enabling all nurses and midwives prescribe controlled drugs in Part II of Schedule

31 The Prescribing Minimum Data Set was not designed to capture medications that were stopped by a nurse/midwife prescriber.

8 where the drug is normally used in a specific clinical setting and falls within a nurse's/midwife's scope of practice.

### 11.3 Safety and Competency to Prescribe

Nurse/midwife prescribers, stakeholders and patients were all in agreement when surveyed that nurses and midwives could prescribe safely and effectively. Many prescribers in the interview phase of the evaluation recognised that the constraints imposed by their scope of practice had in fact ensured that they prescribe safely and effectively and that this process ensured that they prescribed within safe parameters. There was an acknowledgement amongst stakeholders surveyed that nurses and midwives can prescribe correctly, that they had the knowledge to prescribe and had received appropriate education and training for their role. Although the majority of prescribers were confident in their competency to prescribe, a significant minority expressed anxiety about prescription writing and uncertainty about making a diagnosis with those with less experience expressing greater anxiety. Luker (1997) has also identified that prescribers with less experience also express concerns in these areas.

The audit component of the study found evidence that overall the majority of nurse/midwife prescribing was appropriate and safe. There was some variability in the quality of the nursing consultations recorded however there were also examples of excellent practice. The context of the consultation and the rationale for the prescription issued was indicated in the majority of consultations; however there was evidence that this aspect of the prescribing process needs greater emphasis. In addition there is a need for formal direction from the regulatory and health service providers in the area of consultation. As a minimum all consultations need to clearly indicate the context of the consultation including patient age and gender, the primary reason for the consultation; in particular drug allergies should always be noted as should over-the-counter medications patients might be taking. Any special precautions with new therapy prescribed should also be clearly identified. Of particular utility in this regard would be a publication from the National Hospitals Office (2007) entitled *National Hospitals Office Code of Practice for Healthcare Records Management: Abbreviations*. This document provides

guidance on best practice in relation to abbreviations that should be used when recording dose, frequency, time and route of administration of a medication.

Nurse/midwife prescribing is extending into areas of more complex patient care including particular vulnerable groups such as the elderly and breastfeeding mothers. The potential for drug or disease/condition related interactions increases in these settings and has particular requirements regarding ongoing professional education.

### 11.4 Prescribers' Evaluation of their Education Programme

Candidate nurse and midwife prescribers complete a Certificate in Nursing (Nurse/Midwife Prescribing) over a period of six-months at either the School of Nursing, Royal College of Surgeons in Ireland or the School of Nursing and Midwifery, University College Cork. This evaluation explored two aspects of the educational programme; firstly the extent to which course participants gained in prescribing capabilities as a consequence of the programme and secondly their experience of the overall quality of the programme.

Course participants reported that they had gained abilities in a number of key areas as a consequence of their prescribing preparation programme not least in areas related to accountability, legislation, pharmacology and application of the prescribing process to professional practice. Course participants tended not to substantially change in areas in which they had extensive experience prior to commencing the prescribing programme; these areas included taking a medical history from a patient, patient education and communication; however they continued to make gains in these areas as a consequence of the programme. Course participants made substantial gains in each of the five educational domains of the prescribing programme. The greatest gains were made in overall prescribing ability and self-confidence to prescribe, an understanding of pharmacology and pharmacotherapeutics and an understanding of the legal and ethical aspects of prescribing practice. The majority of course participants were satisfied with the quality of teaching on their education programme, especially in relation to the levels of explanation received. There was however some variability in satisfaction at the level of feedback received by participants. The assessment

process was also highly rated by candidate prescribers with levels of satisfaction around seventy per cent for the both the theoretical and clinical assessment processes used in the programme. Respondents also reported that the programme had prepared them for prescribing practice, however a number of participants were dissatisfied with the level of preparation they received for their particular area of specialist practice. There was variability in respondents' perception of the workload throughout the course and it was the only domain that was rated negatively overall. Educational research has identified that courses with combined theoretical and practical elements tend to lead students to perceive that workloads are heavy (Drennan 2007). The main issue in relation to workload was the volume of work to be comprehended by course participants throughout the course. The most positive aspect of the prescribing programme was the high level of satisfaction expressed by course participants at the support they received from their medical practitioner mentor. Participants were highly satisfied with the level of access, learning opportunities, communication and feedback received from mentors throughout the mentoring process. Course participants generally perceived the preparation programmes to be well organised, however there was some variation in respondents' understanding of the level of work expected of them throughout the course.

In conclusion the educational preparation programmes, guided by the *Requirements and Standards for the Education Programme for Nurses and Midwives with Prescriptive Authority* (An Bord Altranais 2007b), provided students with a broad range of educational experiences in the area of prescribing practice. It is evident that the education delivered through these programmes had a positive impact on student learning and led to substantial change in course participants' ability to prescribe. It is also evident from the overall findings that course participants received a quality educational experience and that students were generally satisfied with the organisation and delivery of the programmes.

In exploring future directions for the education of nurse/midwife prescribers and to reduce the workload associated with an intensive six-month prescribing preparation programme the independent evaluation would recommend that other models of delivery be explored. The evaluation team considers that there are

three educational pathways for the development of nurse/midwife prescribing: maintenance of stand-alone prescribing programme, integration with post-registration education and consideration of prescribing practice at pre-registration level. The current stand alone Certificate in Nursing (Nurse & Midwife Prescribing) has been demonstrated through this evaluation as being effective in the preparation of nurses and midwives for prescribing practice therefore it should continue. There is also a need to consider integrating the modules currently offered in the preparation programme into relevant clinical post-registration programmes offered at graduate level. These clinically based programmes prepare nurses and midwives to practice at clinical nurse/midwife specialist or advanced nurse/midwife practitioner levels and the introduction of prescribing modules would have utility in preparing nurses/midwives practising at these levels for prescribing practice. Within the stand alone Certificate in Nursing and in future post-registration programmes there is a need to introduce innovative methods of delivering the prescribing programme. These innovations could include blended learning, online learning and distance education. Finally, there is a need to debate the extent to which prescribing practice is introduced into pre-registration nurse/midwife education. The rationale being as the number of nurse/midwife prescribers increases there is a need to facilitate an understanding of nurse/midwife prescribing at undergraduate level.

## 11.5 Communication and Support for the Prescribing Role

The attitudes and support of other health professionals can determine the success or failure of extending prescriptive authority to nurses and midwives in the clinical setting (Stenner *et al.* 2009). In this evaluation it was evident that nurse/midwife prescribers received high levels of support from a multitude of health professionals. The most positive aspect of the prescribing programme was the high level of satisfaction expressed by course participants at the support they received from their medical practitioner mentor.

Nurses and midwives with prescriptive authority were also highly satisfied with the level of support they received for their role at both local and national level. At a local level it was evident that prescribers were

supported at every level of the organisation to help them develop their role, although a minority of prescribers did highlight that they encountered some difficulties with the administrative functioning of their role such as a lack of access to prescription pads and delays in agreeing their Collaborative Practice Agreement. Overall support in implementing the role was high from medical and pharmacy colleagues as well as from prescribers' nursing and midwifery colleagues. At national level prescribers reported that both the HSE and An Bord Altranais supported them in developing and maintaining their role.

The level of support nurse and midwife prescribers received from other health professionals was conducive to the overall success of the initiation of the initiative. This level of support has also been identified as the reason for the success of the initiative in the UK (Stenner *et al.* 2009). High levels of support from health professionals are associated with the advancement of the prescribers' capability in prescribing practice. As Stenner *et al.* (2009: 857) point out 'anxiety about nurse prescribing is reduced where prior working relationships exist, and where the nurse has a high level of clinical knowledge and experience and prescribes within an agreed framework in a relevant setting'.

There was a high level of support towards the introduction of the initiative with the majority of key stakeholders of the opinion that nurse/midwife prescribing was a good service for patients, that it had a positive impact on patient care and that it met the needs of patients. There was also agreement that extending prescriptive authority to nurses and midwives was safe with the majority of stakeholders in agreement that nurses and midwives had both the capacity and knowledge to prescribe correctly and had received comprehensive education and training for their role. A majority of stakeholders were of the opinion that nurses and midwives had a role in the prescribing process and there was a need to extend prescribing beyond the remit of the medical profession. A majority of respondents were also very supportive of the initiative overall and two-thirds of key stakeholders were of the opinion that its introduction had been a success. However, a quarter had no opinion on the success or otherwise of the introduction of the prescribing initiative reflecting the recent introduction of nurse/midwife prescribing in some sites.

Stakeholders that worked directly with a nurse/midwife prescriber in their organisation identified the ability of patients to access medication more quickly and efficiently as a key outcome from the prescribing initiative. There was also a perception that it had reduced the number of health professionals a patient had to interact with during their visit or stay in hospital. Clinical stakeholders were also of the opinion that nurse/midwife prescribing impacted positively on a number of patient outcomes such as patient satisfaction and compliance. Although there was variability in opinion on the impact of nurse/midwife prescribing on the frequency with which patients with long-term illness had to visit their doctor for a prescription and the extent to which it reduced delays in the discharge of patients a small majority of clinical stakeholders agreed that nurse/midwife prescribing had impacted positively on these outcomes. However, whilst the majority of nurse/midwife prescribers agreed that the prescribing initiative reduced the delay in the discharge of patients, the majority of medical practitioners disagreed. There was consensus amongst clinical stakeholders that the extension of prescriptive authority had freed up doctor's time. Furthermore, medical practitioners perceived that supervising a nurse/midwife prescriber was generally not a burden on their workload. Key stakeholders also perceived that the extension of prescribing to nurses and midwives was not adding to the workload of nurse/midwife prescribers. It was also evident that the majority of key stakeholders were of the opinion that health professionals overall were supportive of the introduction of the prescribing initiative.

### 11.6 Patients' Evaluations of Nurse/Midwife Prescribing

The patients surveyed were highly satisfied with the care they received from nurse/midwife prescribers and all were of the opinion that nurses and midwives should have prescriptive authority. Patients reported that they had received comprehensive education and advice from the nurse/midwife prescriber on their medication. The ability of nurse and midwife prescribers to provide education and advice to patients has been identified as one of the predominant beneficial outcomes of nurse/midwife prescribing (Luker *et al.* 1997, 1998; Brooks *et al.* 2001; Latter 2005). Furthermore, providing patients with information and advice on their medications is associated

with increased patient satisfaction and compliance (Berry *et al.* 2008). Patient's self-reported intent to comply with the medication prescribed was high, indicating that patients trusted the education and advice provided by the nurse/midwife prescriber. Similar levels of intention to comply with the directions given by a nurse/midwife prescriber have been found in surveys of people with inflammatory joint disease (Berry *et al.* 2008). There was also a perception that receiving a prescription from a nurse or midwife had led to a reduction in their waiting time. A number of studies report that delays in waiting to be seen or treated are a major source of patient dissatisfaction with the health services (Luker *et al.* 1998).

The high levels of patient support for nurse/midwife prescribing mirror findings found internationally (Luker *et al.* 1997, 1998; Brooks *et al.* 2001; Latter 2005). Only a small proportion of patients in this evaluation expressed a preference to see a doctor rather than a nurse for their prescription, a finding that is also reflected in other evaluations of patients' perceptions of nurse/midwife prescribing (Latter *et al.* 2005). Patients were satisfied with the level of information and advice provided to them about how and when to take their medication; however approximately a fifth would like to have received more information about their medication. It has been reported that patients, especially those with long-term illnesses, want information about their medications, especially information related to the side-effects that they may experience (Berry *et al.* 2008). The open-ended comments from patients with long-term illnesses surveyed alluded to the close relationship that they had built up with the nurse prescriber and their ability to understand and meet their needs, a finding also identified by Luker *et al.*'s (1998) evaluation of patients' perceptions of nurse prescribing in the UK. Although not directly measured in this study the ability to speak to a female nurse as opposed to a male doctor about intimate matters was addressed in a number of open-ended comments from female patients. Luker *et al.* (1998: 240) identified the quality of approachability that nurse prescribers may have over their medical colleagues and the 'more relaxed and equal style of consultation with the nurse'. As Luker *et al.* (1998: 241) point out 'boundary shifts between doctor's and nurse's work are acceptable to patients, and that patients are able to decide whom to consult.'

Overall satisfaction with the consultation process was high with the majority of patients surveyed of the opinion that the nurse/midwife was comprehensive in their care, listened to their concerns and treated them as a person. Patients were also satisfied with the time the nurse/midwife prescriber spent with them during the consultation process; however some patients, especially those reporting poorer health, would like to have had more time. Length of consultation is a factor associated with patient satisfaction with the treatment and care patients receive (Luker 1998).

Overall, there were high levels of support for the prescribing initiative with the vast majority of patients in favour of nurse/midwife prescribing. Patients were also satisfied with the care and advice provided by prescribers and reported high levels of intent to comply with the prescription administered.

### 11.7 Prescribers' Evaluation of their Role

Since commencing prescribing the vast majority of nurses and midwives reported that they were prescribing on a frequent basis with, on average, each prescriber administering approximately nine prescriptions per week. However, over half of the prescribers reported that they administered less than five prescriptions per week. A number of reasons were postulated for this rate of prescribing with the most frequently mentioned being the inability to prescribe unlicensed medications to their patient cohort. A majority of prescribers reported that there were drugs and medications that they would like to prescribe as part of their clinical practice but were unable to do so. The principal reason for this constraint was their inability to prescribe unlicensed medications. Another constraint on prescribing practice, especially for those prescribers working in pain management, was the limits placed on the prescribing of controlled drugs by Schedule 8 of the *Misuse of Drugs (Amendments) Regulations 2007*. Furthermore, in certain sites, Drugs and Therapeutics Committees prohibited nurses from prescribing antibiotics. The limitations placed on the drugs that nurses'/midwives' can prescribe in has been identified as the greatest barrier to developing prescribing practice in the UK (Courtenay *et al.* 2007).

One particular problem that arose in the evaluation was the issue of unlicensed medications. The prescribing of

unlicensed medications by nurses or midwives is not permitted under Practice Standard 4 of the *Practice Standards for Nurses and Midwives with Prescriptive Authority* (An Bord Altranais 2007) whereas medical practitioners are devolved this authority through the *Medicinal Products (Licensing and Sale) Regulations 1998*. The prescribing of unlicensed medications is currently deemed to be outside the scope of practice of nurse and midwife prescribers. An Bord Altranais (1997: 9) states that:

An unlicensed medication has not been approved for licensing or authorisation as per the Irish Medicines Board or the European Medicines Evaluation Agency and therefore there are issues of accountability and responsibility (and possibly indemnity) regarding a nurse/midwife prescribing these medications.

In the UK independent extended nurse prescribers are normally not permitted to prescribe unlicensed medications however the UK Department of Health states:

Nurse Independent Prescribers who are also supplementary prescribers can still prescribe them as part of a supplementary prescribing arrangement, if the doctor agrees within a Clinical Management Plan' (accessed at: [http://www.dh.gov.uk/en/Healthcare/Medicinespharmacyandindustry/Prescriptions/TheNon-MedicalPrescribingProgramme/Nurseprescribing/DH\\_4123003](http://www.dh.gov.uk/en/Healthcare/Medicinespharmacyandindustry/Prescriptions/TheNon-MedicalPrescribingProgramme/Nurseprescribing/DH_4123003)).

Courtenay *et al.* (2007) highlights how this is the only means by which nurse prescribers in the UK can prescribe controlled drugs or unlicensed medications.

It is important to note that medications are not only unlicensed for safety reasons they, may also be unlicensed due to marketing concerns. Because a drug is unlicensed for use in a particular group, for example children, it does not necessarily mean that it is unsafe or unsuitable (Stephenson 2000). One area identified in the evaluation in which prescribing practice was severely limited was children's nursing. A substantial number of medications used to treat children are unlicensed (Turner *et al.* 1996, 1998). In the UK there is a 'view was that there should be a further development of the role of specialist nurse practitioners and other health professionals to afford them the authority to prescribe drugs for children, including those which are unlicensed and used outside their licence,

where clear guidance existed' (Stephenson 2000: 201). Stephenson (2000: 201) writing in relation to the use of unlicensed medications with children argues that:

...it should not be necessary to take additional steps, beyond those taken when prescribing licensed medicines, to obtain the consent of parents or the child to prescribe or administer unlicensed medicines or licensed medicines for unlicensed applications (Stephenson 2000: 201).

In the UK for example advanced neonatal nurse practitioners are allowed to prescribe unlicensed drugs under group protocols<sup>32</sup> drawn up at local level (Stephenson 2000).

The Nursing and Midwifery Council in the UK in the document *Standards and Proficiency for Nurse Midwife Prescribers* (2005: 28-29) outlines the conditions attached to the prescribing of unlicensed medications by supplementary prescribers:

You may prescribe an unlicensed medication as a supplementary prescriber as part of a clinical management plan providing: a) The doctor/dentist and, you acting as a supplementary prescriber, have agreed the plan with the patient/client in a voluntary relationship b) You are satisfied an alternative, licensed medication would not meet the patient/client's needs c) You are satisfied there is a sufficient evidence base and/or experience to demonstrate the medications safety and efficacy for that particular patient/client d) The doctor/dentist is prepared to take the responsibility for prescribing the unlicensed medicine and has agreed the patient/client's clinical management plan to that effect e) The patient/client agrees to a prescription in the knowledge that the drug is unlicensed and understands the implications of this f) The medication chosen and the reason for choosing it is documented in the clinical management plan.

The independent evaluation would recommend that nurses and midwives should be enabled to prescribe unlicensed medications once they come within the

32 'A group protocol is a specific written instruction, drawn up locally by doctors and pharmacists, for the supply or administration of named medicines by other health professionals in an identified clinical situation' (Stephenson 2000: 199)

prescriber's scope of practice. In extending the authority to nurses and midwives in prescribing unlicensed medicines a number of factors need to be taken into consideration including: 1) the unlicensed medication is regularly used to treat patients in the prescriber's area of practice, 2) the unlicensed medication to be prescribed must be agreed in advance with the prescriber's Drugs and Therapeutics Committee, 3) it is acknowledged by the prescriber that an alternative licensed medication would not be more suitable, 4) unlicensed medications that are new or on clinical trial should not normally be prescribed by nurse/midwife prescribers, 5) the patient should be made aware that the drug being prescribed is unlicensed.

Although the issue of the prescribing of a medication 'off-label' did not arise as a major concern in this evaluation it is evident that it is related to the issue of unlicensed medications. Furthermore there has been some confusion in distinguishing between definitions of unlicensed and off-label medications (Neubert *et al.* 2008). Therefore, it was decided to address the issue of off-label medications as well as unlicensed medicines. 'Off-label' medications are licensed medicines used outside their terms of licence; for example they could be used with an age group or administered by a route for which they are not licensed. The prescribing of off-label medications is most predominant in the area of paediatrics (Lindell-Osuagwu 2009) but it also occurs in other specialities such as care of the older person. Guidelines for the prescribing of 'off-label' medications have been developed in countries where prescriptive authority for nurses and midwives has been in place for a number of years. In the UK nurses and midwives with prescriptive authority are not precluded by legislation from prescribing off-label medication (NMC 2005). The UK Nursing and Midwifery Council (2005) have outlined a number of guidelines related to the prescribing of off-label medications by both independent and supplementary prescribers. These guidelines state that the prescriber should ensure that there is not an alternative medication that can be used within its terms of licence to treat a patient and that there is evidence that the drug is both safe and effective when used outside its terms of licence.

The independent evaluation would recommend that nurses and midwives should be enabled to prescribe off-label medications once they come within their scope

of practice and nurse/midwife prescribers are cognisant of best practice in the prescribing of medications outside their terms of licence. Areas that would need to be taken into consideration in respect of nurse/midwife prescribers prescribing 'off-label' medication would include: 1) the off-label medication is regularly used to treat patients in the prescriber's area of practice, 2) the off-label medication to be prescribed must be agreed in advance with the prescriber's Drugs and Therapeutics Committee, 3) it is acknowledged by the prescriber that an alternative medication would not be more suitable, 4) the patient should be made aware that the drug being prescribed is off-label. In addition, An Bord Altranais currently does not address the issue of 'off-label' medications in the document *Practice Standards for the Nurses and Midwives with Prescriptive Authority* (An Bord Altranais 2007), therefore the Board should be asked to develop guidance for nurses/midwives on the best practice for the prescribing of off-label medications.

The majority of prescribers agreed that they could prescribe safely and effectively and that they had the necessary skills and training to fulfil their role as a prescriber. They were also aware of their scope of practice and the issue of accountability associated with a prescribing role. Although a majority of respondents were confident in their ability to make a diagnosis and to write a prescription, a minority expressed some concern regarding these facets of their role. A number of prescribers also expressed concern at the possibility of litigation associated with their role.

The instigation of prescriptive authority to nurses/midwives has had a positive impact on their clinical role; in particular it has enhanced their professional development, increased their overall job satisfaction and enhanced the care that they can deliver to patients. Furthermore, nurses and midwives were of the opinion that their ability to prescribe improved the quality of care they could deliver to patients, ensured better use of their skills and increased their professional autonomy. Nurse prescribers in Luker and McHugh's (2002) and Rodden's (2001) studies also reported an increase in autonomy for nurse/midwife prescribers due to their ability to manage patients' care more completely and that the extension of prescriptive authority to nurses and midwives had reduced their dependence on the medical team.

Nurses and midwives did not perceive that the addition of a prescribing role had impacted on their core nursing and midwifery skills, however a majority reported that it had resulted in an increased workload. There was a general consensus among prescribers that the introduction of prescriptive authority for nurses has had a positive impact on a number of aspects of patient care including enabling patients access medications quicker, enabling in-patients to commence treatment earlier and increasing patient compliance. In comparing prescribers' opinions with that of clinical stakeholders on the benefits of nurse/midwife prescribing it was evident that there was consensus amongst the two groups that it had been a positive addition to patient care.

Nurses and midwives with prescriptive authority were highly satisfied with the level of support they received for their role at both local and national level. It was evident that prescribers were supported at every level of the organisation to help them develop their role. Support was high from medical and pharmacy colleagues as well as from their nursing and midwifery colleagues. At national level prescribers reported that both the HSE and An Bord Altranais supported them in their role.

The experience of prescribers in relation to continuing professional development was variable. While the majority reported that they had not accessed any type of formal CPD related to prescribing following the completion of their prescribing education programme all prescribers reported that they engaged in informal CPD. The principal area in which prescribers identified that they required ongoing professional development was pharmacology. Findings from the UK suggest that over half of nurse/midwife prescribers had undertaken CPD since qualifying (however this finding did not distinguish between formal and informal CPD) (Courtenay *et al.* 2007).

The majority of nurses and midwives who had completed the prescribing preparation programme but were not yet prescribing at the time of the survey intended to do so in the near future whereas thirteen percent had no intention to register. Of those who intended to commence prescribing, agreeing their CPA with their local Drugs and Therapeutics committee was the main barrier to initiating prescribing practice. Therefore the independent evaluation would recommend that Drugs

and Therapeutics Committees review their current arrangements for assessing Collaborative Practice Agreements with a view to expediting the process for nurse/midwife prescribers.

### 11.8 Conclusion

In conclusion the extension of prescriptive authority to nurses and midwives has been a positive development, not only for the impact it has had on the professional development of nurses and midwives but also for the impact that it has had on patient care. From the perspective of nurse/midwife prescribers it has increased their autonomy, increased levels of job satisfaction, ensured better use of their skills and ultimately has allowed them to provide holistic care to patients. For many nurses and midwives this was an aspect of their role that was missing. Patients are highly supportive and accepting of the initiative and it is evident that it reduces waiting times and facilitates them in accessing treatments that previously they would have had to wait for. It is also evident that overall there is support for nurse/midwife prescribing from those surveyed from the nursing, midwifery, medical and pharmacy professions although levels of support in some cases are variable. There are a number of issues that need to be resolved including further communication with the various groups of health professionals, issues associated with the documentation of prescribing consultations, the reduction of the administrative burden on prescribers and the further development of the initiative to ensure that nurses and midwives with prescriptive authority become independent in their prescribing practice. The principal barriers to the further development of prescribing practice for nurses and midwives include issues surrounding the prescribing of unlicensed medications and the limitations placed on the prescribing of controlled drugs. Candidate prescribers agreeing collaborative agreements with their local Drugs and Therapeutics Committees has also been identified as a barrier in some areas to the development of the role. Overall, based on the findings from this evaluation the independent national evaluation recommends that the national rollout of independent nurse/midwife prescribing continue and be further supported and strengthened.



# Chapter 12

## Recommendations

### 12.1 Conclusive Finding and General Recommendation

This evaluation has found that overall the initiative for independent nurse and midwife prescribing has been safely developed and implemented on a national basis.

#### 12.1.1 Recommendation I

The independent national evaluation recommends that the national rollout of independent nurse/midwife prescribing continue and be further supported and strengthened through the implementation of the recommendations outlined below.

### 12.2 Supporting Recommendations

#### 12.2.1 Recommendation II – Unlicensed Medications

It is evident from the findings of this independent evaluation that a major barrier for nurse and midwife prescribers is their inability to prescribe unlicensed medications. This is a particular problem for prescribers in the areas of children's nursing and neonatal care, however it also extends to prescribers in other specialities. Therefore it is recommended that:

- Nurses and midwives should be enabled to prescribe unlicensed medications once they come within their scope of practice and nurse/midwife prescribers are cognisant of best practice in the prescribing of unlicensed medications<sup>33</sup>.

33 When reviewing this recommendation the independent evaluation would suggest that the following should be taken into consideration: 1) the unlicensed medication is regularly used to treat patients in the prescriber's area of practice, 2) the unlicensed medication to be prescribed must be agreed in advance with the prescriber's Drugs and Therapeutics Committee, 3) it is acknowledged by the prescriber that an alternative licensed medication would not be more suitable, 4) unlicensed medications that are new or on clinical trail should not normally be prescribed by nurse/midwife prescribers, 5) the patient should be made aware that the drug being prescribed is unlicensed.

- The Department of Health and Children review all relevant medicines regulations to enable nurses and midwives prescribe unlicensed medications once they come within their scope of practice<sup>34</sup>.
- An Bord Altranais be asked to review their Practice Standards in light of any changes arising from implementation of the above recommendations.
- An Bord Altranais be asked to develop guidance for nurses/midwives on the best practice for prescribing unlicensed medications.

#### 12.2.2 Recommendation III – Prescribing Medications Outside their Terms of Licence (Off-Label Medications)

It is evident from the findings of this independent evaluation that a barrier for nurse and midwife prescribers is their inability to prescribe medications outside their terms of licence (Off-Label Medications). Therefore it is recommended that:

- Nurses and midwives should be enabled to prescribe off-label medications once they come within their scope of practice and nurse/midwife prescribers are cognisant of best practice in the prescribing of medications outside their terms of licence<sup>35</sup>.
- The Department of Health and Children review all relevant medicines regulations to enable nurses and midwives prescribe off-label medications once they come within their scope of practice.
- An Bord Altranais be asked to review their Practice Standards in light of any changes arising from implementation of the above recommendations

34 *Medicinal Products (Control of Wholesale Distribution) Regulations 2007 (S.I. no. 538 of 2007)*  
*Medicinal Products (Control of Manufacture) Regulations 2007 (S.I.) no. 539 of 2007)*  
*Medicinal Products (Control of Placing on the Market) Regulations 2007 (S.I. no. 540 of 2007)*  
*Medicinal Products (Licensing and Sales) Regulations 2007 (S.I. no. 540 of 2007)*

35 When reviewing this recommendation the independent evaluation would suggest that the following should be taken into consideration: 1) the off-label medication is regularly used to treat patients in the prescriber's area of practice, 2) the off-label medication to be prescribed must be agreed in advance with the prescriber's Drugs and Therapeutics Committee, 3) it is acknowledged by the prescriber that an alternative medication would not be more suitable, 4) the patient should be made aware that the drug being prescribed is off-label.

- An Bord Altranais be asked to develop guidance for nurses/midwives on the best practice for the prescribing of off-label medications.

#### 12.2.3 Recommendation IV – Prescribing of Controlled Drugs

The prescribing of controlled drugs by nurses and midwives with prescriptive authority is regulated by MDA Schedule 8. This was introduced specifically to identify the drugs and route of administration for which an RNP can prescribe a Schedule 2 or 3 medication. In its present format Schedule 8 is inhibiting the prescribing practice of nurses/midwives, especially those working in the area of pain management, due to the restrictions on the type of controlled drugs that they are permitted to prescribe. It is therefore recommended that:

- The Department of Health and Children review the relevant medicines products regulations for Schedule 8 with a view to enabling all nurses and midwives prescribe controlled drugs in Part II of Schedule 8 where the drug is normally used in a specific clinical setting and falls within a nurse's/midwife's scope of practice.

#### 12.2.4 Recommendation V – Education of Nurse/Midwife Prescribers

The independent evaluation considers that there are three educational pathways for the development of nurse/midwife prescribing: maintenance of stand-alone prescribing programme, integration with post-registration education and consideration of prescribing practice at pre-registration level. Therefore it is recommended that:

- The current stand alone Certificate in Nursing (Nurse & Midwife prescribing) continue, remain at level 8, and that requirements for entry to the programme remain unchanged.
- The relevant modules be integrated into existing and future post-registration nursing and midwifery programmes where prescribing is relevant to clinical practice.
- The provision of prescribing practice within pre-registration education should be debated within the proposed review of undergraduate nursing education being undertaken by the Department of Health and Children.

- Innovative forms of education should be considered to deliver the prescribing preparation programme such as blended learning, online learning and distance learning.

- Higher Education Institutions providing nurse/midwife prescribing education programmes in the future should have access to expertise in pharmacy and medicine.
- Accreditation of prior learning is considered for applicants to the programme.
- Experienced nurse/midwife prescribers should be considered to act as mentors to candidate prescribers.

#### 12.2.5 Recommendation VI – Registration of Nurse/Midwife Prescribers

The independent evaluation has found satisfaction with the registration process and therefore recommends that the process remain unchanged. However it does recommend that:

- An Bord Altranais should be requested to consider putting a timeframe on an acceptable period between completion of the course and registration as a nurse prescriber.

#### 12.2.6 Recommendation VII – Continuing Professional Development

The independent evaluation has found that there is variability to the extent to which nurse/midwife prescribers access continuing professional development. Therefore it is recommended that:

- All nurse and midwife prescribers should maintain their professional competence in prescribing on an ongoing basis; this recommendation will be informed by proposed legislation related to professional competence in the forthcoming Nurses and Midwives Act.

#### 12.2.7 Recommendation VIII – Collaborative Practice Agreement (CPA)

It is evident from the findings of this independent evaluation that the Collaborative Practice Agreement has utility in the early development of the nurse/midwife prescribing practice. It is also identified that the CPA over time may add an administrative burden to prescribers and

Drugs and Therapeutics Committees. Furthermore, the CPA may be a barrier the development of independent prescribing by nurses and midwives in the future. Therefore it is recommended that:

- The Collaborative Practice Agreement remains in place as a requirement for registration as it establishes the clinical, management and corporate governance arrangements within each organisation. It also officially records prescriptive authority given by an employer to the nurse/midwife, thus facilitating a clinical indemnity requirement.
- Once the prescribing initiative has been further developed consideration should be given by An Bord Altranais to phasing out the requirement for the Collaborative Practice Agreement on an ongoing basis.
- In light of the above recommendation An Bord Altranais give consideration to providing guidance to RNPs on establishing clinical, management and corporate governance arrangements on prescribing practice with their health service employer.
- Drugs and Therapeutics Committees review their current arrangements for assessing Collaborative Practice Agreements with a view to expediting the process for nurse/midwife prescribers.
- In light of the above recommendations the health service employer should assure itself that it has established clinical, management and corporate governance arrangements on prescribing practice with each nurse/midwife prescriber.

#### 12.2.8 Recommendation IX – Prescribing Practice

The independent evaluation found that overall nurse/midwife prescribing was safe and efficient however there are a number of areas in which prescribing practice can be improved. Therefore it is recommended that:

- The *Nurse and Midwife Prescribing Data Collection System* for monitoring nurse and midwife prescribing should continue.

- The health service provider put into place the appropriate arrangements to ensure that prescribing practices are congruent with HSE national policies<sup>36</sup> for nurse and midwife prescribing including security of prescription pads, recommendations on Photostat copies of patient consultations and legibility of prescriptions and documentation.
- The independent evaluation team considers that consideration should be given to the introduction of electronic prescribing system. This system would significantly reduce duplication of documentation while improving clarity and communication between multidisciplinary teams.
- An Bord Altranais, in conjunction with health service providers, should review Practice Standards with a view to outlining the criteria that should be recorded on patient/service-user case notes and medication administration records following a prescribing consultation by an RNP. These standards, once agreed, should be reflected in prescribing education preparation programmes.
- Health Service Providers should continue to develop a culture of critical review and multidisciplinary audit to ensure a good practice develops and to promote a culture of mutual respect and learning among health care professionals.

#### 12.2.9 Recommendation X – Future Developments

The independent evaluation further recommends that:

- A further evaluation of the nurse/midwife prescribing initiative is undertaken two years following the publication of this report. The rationale being that a critical mass of prescribers will be in place and there will have been a roll out of the initiative in a number of diverse clinical settings.
- The implementation framework developed, designed and rolled out by the HSE provides a model of best practice for the implementation of prescribing for health service providers external to the Executive.

<sup>36</sup> Health Service Executive (2009) National Policy for Nurse and Midwife Medicinal Product Prescribing in National Hospitals Office. HSE.

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Appendix I  
Educational Outcomes Evaluation Questionnaire



University College Dublin

# Independent Evaluation of the Nurse/Midwife Prescribing Initiative

## Evaluation of Educational Preparation for Prescribing Practice Certificate in Nursing (Nurse/Midwife Prescribing)

*Please return your completed questionnaire in the enclosed  
stamped addressed envelope to:*

*Dr. Jonathan Drennan,  
School of Nursing, Midwifery and Health Systems  
University College Dublin  
Belfield  
Dublin 4*

## Part 1-Evaluation of Educational Preparation for Prescribing Practice

**DIRECTIONS:** The statements below are designed to identify your understanding and ability in a number of areas following completion of your educational programme to prepare you for prescribing practice. Each item has 7 possible responses. The responses range from **1** (Low understanding/Low ability) through **2, 3, 4, 5, 6** (increasing understanding/ability) to **7** (High understanding/High ability). Please read each statement and first rank your ability as a **result** of the course (**After my Programme**). Next, think back and rank your ability **before** the commencement of the course (**Before my Programme**). If the statement is not applicable, please **leave it blank**.

Understanding and ability:	Understanding and Ability													
	Circle the appropriate numbers where you see yourself now as a result of the Prescribing course and where you saw yourself prior to commencing the Prescribing course. 1 = low ability/understanding through to 7 = high ability/understanding.													
	After my Programme							Before my Programme						
	Low 1	2	3	4	5	6	High 7	Low 1	2	3	4	5	6	High 7
1. Understanding of the An Bord Altranais regulatory framework associated with prescribing	1	2	3	4	5	6	7	1	2	3	4	5	6	7
2. Understanding of pharmacovigilance	1	2	3	4	5	6	7	1	2	3	4	5	6	7
3. Understanding of pharmacotherapeutics	1	2	3	4	5	6	7	1	2	3	4	5	6	7
4. Understanding of pharmacodynamics	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5. Understanding of pharmacokinetics	1	2	3	4	5	6	7	1	2	3	4	5	6	7
6. Ability to identify and treat adverse reactions and interactions	1	2	3	4	5	6	7	1	2	3	4	5	6	7
7. Understanding of accountability and responsibility for prescribing practice	1	2	3	4	5	6	7	1	2	3	4	5	6	7
8. The ability to self-audit	1	2	3	4	5	6	7	1	2	3	4	5	6	7
9. Understanding of risk management in prescribing practice	1	2	3	4	5	6	7	1	2	3	4	5	6	7
10. Understanding of public health issues in relation to prescribing	1	2	3	4	5	6	7	1	2	3	4	5	6	7

## Appendix I Educational Outcomes Evaluation Questionnaire (continued)

		<b>Understanding and Ability</b>														
		Circle the appropriate numbers where you see yourself now as a result of the Prescribing course and where you saw yourself prior to commencing the Prescribing course. 1 = low ability/understanding through to 7 = high ability/understanding.														
		After my Programme							➔	Before my Programme						
<b>Understanding and ability:</b>		<b>Low</b>						<b>High</b>	<b>Low</b>							<b>High</b>
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	
	11. Understanding of policy in relation to medication error/near miss reporting	1	2	3	4	5	6	7	1	2	3	4	5	6	7	
	12. Ability to prescribe for special groups (e.g. older people, pregnant or breast feeding women, people with mental health problems, children)	1	2	3	4	5	6	7	1	2	3	4	5	6	7	
	13. Ability to discontinue medication	1	2	3	4	5	6	7	1	2	3	4	5	6	7	
	14. Understanding of the psychology of prescribing	1	2	3	4	5	6	7	1	2	3	4	5	6	7	
	15. Understanding of applied biosciences for prescribing practice	1	2	3	4	5	6	7	1	2	3	4	5	6	7	
	16. Understanding of the steps of the prescribing process	1	2	3	4	5	6	7	1	2	3	4	5	6	7	
	17. Ability to take a history from a patient/client	1	2	3	4	5	6	7	1	2	3	4	5	6	7	
	18. Ability to undertake a physical examination of a patient/client	1	2	3	4	5	6	7	1	2	3	4	5	6	7	
	19. Understanding of evidence-based practice in relation to prescribing	1	2	3	4	5	6	7	1	2	3	4	5	6	7	
	20. Understanding of clinical governance in relation to prescribing	1	2	3	4	5	6	7	1	2	3	4	5	6	7	

		<b>Understanding and Ability</b>														
		Circle the appropriate numbers where you see yourself now as a result of the Prescribing course and where you saw yourself prior to commencing the Prescribing course. 1 = low ability/understanding through to 7 = high ability/understanding.														
		<b>After my Programme</b>							<b>Before my Programme</b>							
<b>Understanding and ability:</b>		<b>Low</b>						<b>High</b>	<b>Low</b>							<b>High</b>
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	
21. Understanding of legislation for nursing/midwifery practice and medication management		1	2	3	4	5	6	7	1	2	3	4	5	6	7	
22. Understanding of legal liability and clinical indemnity for prescribing practice		1	2	3	4	5	6	7	1	2	3	4	5	6	7	
23. Ability to obtain informed consent from patient/client for treatment		1	2	3	4	5	6	7	1	2	3	4	5	6	7	
24. Understanding of fraud in relation to prescribing		1	2	3	4	5	6	7	1	2	3	4	5	6	7	
25. Understanding of issues relating to substance abuse and dependence related to prescribing		1	2	3	4	5	6	7	1	2	3	4	5	6	7	
26. Overall ability to prescribe		1	2	3	4	5	6	7	1	2	3	4	5	6	7	
27. Understanding of budgetary issues in relation to prescribing (cost vs. benefit ratio)		1	2	3	4	5	6	7	1	2	3	4	5	6	7	
28. Understanding of issues related to the licensing of medical products		1	2	3	4	5	6	7	1	2	3	4	5	6	7	
29. Understanding of ethical principles related to the practice of prescribing		1	2	3	4	5	6	7	1	2	3	4	5	6	7	
30. Understanding of documentary practices related to prescribing		1	2	3	4	5	6	7	1	2	3	4	5	6	7	

## Appendix I Educational Outcomes Evaluation Questionnaire (continued)

		<b>Understanding and Ability</b>														
		Circle the appropriate numbers where you see yourself now as a result of the Prescribing course and where you saw yourself prior to commencing the Prescribing course. 1 = low ability/understanding through to 7 = high ability/understanding.														
		After my Programme								Before my Programme						
Understanding and ability:		Low	2	3	4	5	6	High	Low	2	3	4	5	6	High	
		1						7	1						7	
31. Ability to interpret laboratory and diagnostic tests		1	2	3	4	5	6	7	1	2	3	4	5	6	7	
32. Understanding of cultural differences in prescribing practices		1	2	3	4	5	6	7	1	2	3	4	5	6	7	
33. Ability to deal with patient/client expectations for prescribing medicinal products		1	2	3	4	5	6	7	1	2	3	4	5	6	7	
34. Ability to apply diagnostic reasoning to prescribing practices		1	2	3	4	5	6	7	1	2	3	4	5	6	7	
35. Understanding of risk vs. benefit ratio in prescribing decisions		1	2	3	4	5	6	7	1	2	3	4	5	6	7	
36. Ability to integrate appropriate non-pharmacological interventions into a plan of care		1	2	3	4	5	6	7	1	2	3	4	5	6	7	
37. Ability to provide patients with education and preventative healthcare advice regarding medicinal products		1	2	3	4	5	6	7	1	2	3	4	5	6	7	
38. Ability to write a prescription		1	2	3	4	5	6	7	1	2	3	4	5	6	7	
39. Understanding of national and local guidelines, policies and protocols for prescribing		1	2	3	4	5	6	7	1	2	3	4	5	6	7	
40. Understanding of communication skills necessary to foster collaborative relationships with allied health professionals		1	2	3	4	5	6	7	1	2	3	4	5	6	7	

		<b>Understanding and Ability</b>														
		Circle the appropriate numbers where you see yourself now as a result of the Prescribing course and where you saw yourself prior to commencing the Prescribing course. 1 = low ability/understanding through to 7 = high ability/understanding.														
		<b>After my Programme</b>							<b>Before my Programme</b>							
<b>Understanding and ability:</b>		<b>Low</b>						<b>High</b>	<b>Low</b>							<b>High</b>
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	
41. Understanding of the role and functions of other healthcare professionals involved in medication management		1	2	3	4	5	6	7	1	2	3	4	5	6	7	
42. Ability to manage conflict with other healthcare professionals involved in medication management		1	2	3	4	5	6	7	1	2	3	4	5	6	7	
43. Ability to provide advice to patients/clients about the side-effects of medications		1	2	3	4	5	6	7	1	2	3	4	5	6	7	
44. Understanding of the role of the Irish Medicines Board		1	2	3	4	5	6	7	1	2	3	4	5	6	7	
45. Understanding of pharmacology		1	2	3	4	5	6	7	1	2	3	4	5	6	7	
46. Overall self-confidence in my ability to prescribe medicinal products		1	2	3	4	5	6	7	1	2	3	4	5	6	7	

## Appendix I

### Educational Outcomes Evaluation Questionnaire (continued)

#### Part 2

**DIRECTIONS:** The statements below are designed to identify your attitudes about your experience of your prescribing preparation programme. Each item has 5 possible responses. The responses range from **1 (Strongly Disagree)** through **3 (No Opinion)** to **5 (Strongly Agree)**. Please read each statement. **Circle** the one response that most clearly represents your degree of agreement or disagreement with that statement. **Please respond to all of the statements.**

	Strongly disagree	Disagree	No Opinion	Agree	Strongly agree
1. The theoretical aspects of the prescribing examination process were fair	1	2	3	4	5
2. The clinical aspects of the prescribing examination process were fair	1	2	3	4	5
3. The course prepared me to prescribe	1	2	3	4	5
4. The workload was too heavy	1	2	3	4	5
5. I had good access to the supervisory support I needed from my medical practitioner mentor	1	2	3	4	5
6. The staff made it clear right from the start what they expected from students	1	2	3	4	5
7. My medical practitioner mentor provided suitable learning opportunities	1	2	3	4	5
8. Overall I was satisfied with the mentoring process	1	2	3	4	5
9. I understood the requirements for the examinations of the course	1	2	3	4	5
10. The course helped me develop my ability to plan my prescribing work	1	2	3	4	5
11. My medical practitioner mentor provided helpful feedback on my progress	1	2	3	4	5
12. My medical practitioner mentor communicated effectively with me	1	2	3	4	5
13. I was satisfied with the examination of the pharmacology and prescribing module	1	2	3	4	5
14. The examination of my assessments was completed in reasonable time	1	2	3	4	5



	<b>Strongly disagree</b>	<b>Disagree</b>	<b>No Opinion</b>	<b>Agree</b>	<b>Strongly agree</b>
15. I was satisfied with the examination of my case study	1	2	3	4	5
16. I was satisfied with the Objective Structured Long Examination Record (OSLER) assessment	1	2	3	4	5
17. I was satisfied with the assessment of my reflective portfolio	1	2	3	4	5
18. I was satisfied with the assessment related to my Collaborative Practice Agreement	1	2	3	4	5
19. My medical practitioner mentor made a real effort to understand the difficulties I faced	1	2	3	4	5
20. I had a clear idea of where I was going and what was expected of me on this course	1	2	3	4	5
21. The staff put a lot of time into commenting on my work.	1	2	3	4	5
22. To do well in this course all you really needed was a good memory.	1	2	3	4	5
23. The course was too long	1	2	3	4	5
24. There was appropriate financial support during the course	1	2	3	4	5
25. The course helped me develop my ability to work as a member of a prescribing team	1	2	3	4	5
26. I was generally given enough time to understand the things I had to learn	1	2	3	4	5
27. The teaching staff made a real effort to understand difficulties I might be having with my work	1	2	3	4	5
28. My lecturers were extremely good at explaining things	1	2	3	4	5
29. Too many course staff asked me questions just about facts	1	2	3	4	5
30. The teaching staff of this course motivated me to do my best work	1	2	3	4	5
31. The teaching staff worked hard to make their subjects interesting	1	2	3	4	5

## Appendix I

### Educational Outcomes Evaluation Questionnaire (continued)

	Strongly disagree	Disagree	No Opinion	Agree	Strongly agree
32. There was a lot of pressure on me to do well in this course	1	2	3	4	5
33. The course was too short	1	2	3	4	5
34. The sheer volume of work to be got through in this course meant that it couldn't all be thoroughly comprehended	1	2	3	4	5
35. My medical practitioner mentor provided additional research/resources relevant to my prescribing practice	1	2	3	4	5
36. The course equipped me with the appropriate knowledge, skills and competencies to prescribe medicinal products in my specific area of clinical practice	1	2	3	4	5
37. The staff seemed more interested in testing what I had memorised than what I had understood	1	2	3	4	5
38. The teaching staff normally gave me helpful feedback on how I was doing	1	2	3	4	5
39. It was always easy to know the standard of work expected	1	2	3	4	5
40. It was often hard to discover what was expected of me in this course	1	2	3	4	5
41. Overall I was satisfied with the prescribing preparation course	1	2	3	4	5

**Thank you for taking the time to complete this questionnaire. Your assistance in providing this information is very much appreciated. If there is anything else you would like to tell me of your experience of your educational programme preparing you for prescribing practice please do so in the box below (please add extra sheets if required):**

**If you have any queries regarding this questionnaire please do not hesitate to contact:**

**Dr. Jonathan Drennan or Ms. Deirdre Allen  
School of Nursing, Midwifery and Health Systems  
University College Dublin  
Belfield  
Dublin 4  
Tel: 01 7166404 or 01 7166673  
Email: Jonathan.Drennan@ucd.ie or Deirdre.Allen@ucd.ie**

## Appendix II Audit Tools

### Audit Data Extraction Proforma from Patient clinical records:

Researcher ID	Prescribing Site Study ID	Participant RNP Study ID	Patient Study ID

### Evaluation of PRN Patient Assessment/Review ( Patient Medical Record)

	Yes	No	Comments
Patient age			Record age
Patient gender			Record gender
Evidence of PRN Patient assessment			
Date of assessment (record)			
Time of assessment (record)			
Identifies primary complaint			
Record of presenting symptoms			
Record of duration of symptoms			
Record of past medical history			
Record of current medication prescribed			
Record of over-the- counter medication			
Record of Known Allergies (if yes), nature of allergy			
Explores Family History			
Record of Physical examination			
Record of Final diagnosis			
Request Diagnostic Tests			
Interprets Diagnostic tests			
Evidence of Treatment/Action plan			
Evidence of PRN patient review/reassessment			
Other			
<b>Patient outcomes from Hospital records</b>			
Hosp presentation	Date Time		
Hosp Discharge	Date		
Discharge Status	Alive Dead		
Evidence of Medication Error			
Readmission/re-attendance within 14 days	Date Reason		

### Audit Evaluation of Prescription Record + photocopy of drug chart/prescription pad where prescription written

Researcher ID	Site Study ID	Participant PRN Study ID	Patient Study ID

	Yes	No	Comments
Prescription legible in ink			
Patients Name (Do not record)			
Patients MRN			
Patients DOB (Do Not record)			
Date of Prescription			Record
Name of Prescription item			Record
Strength			Record
Dosage			Record
Frequency			Record
Quantity (in number of dose units or days of treatment)			Record
Instructions			
Signature			
PRN PIN ( Do not record)			
Other			

## Appendix II Audit Tools (continued)

### Prescription Evaluation Criteria used by Expert Panel ‘ Appropriateness of Medication Index’

Expert panel ID	Site Study ID	Participant PRN Study ID	Patient Study ID

	Indicated	Not Indicated	Comment
Is there an indication for the medication?			
Is the medication effective for the condition?			
Is the dosage correct?			
Are the directions correct?			
Are the directions practical?			
Are there clinically significant medication interactions?			
Are there clinically significant Medication disease/ condition interactions?			
Is there unnecessary duplication with other medication(s)?			
Is the duration of therapy acceptable?			

# Appendix III

## Patient Questionnaire



University College Dublin

# Independent Evaluation of the Nurse Prescribing Initiative

## Patient Questionnaire

**Thank you for your time.  
The questionnaire will take about  
10 minutes to complete**

*Please return your completed questionnaire in the  
enclosed stamped addressed envelope to:*

*Dr. Jonathan Drennan,  
School of Nursing, Midwifery and Health Systems  
University College Dublin  
Belfield  
Dublin 4*

## Appendix III Patient Questionnaire (continued)

### Patient Questionnaire

**SECTION 1: DIRECTIONS:** The statements below are designed to identify your attitudes about your experience of receiving **your prescription** from a **nurse prescriber** during your recent visit to hospital. Each item has 5 possible responses. The responses range from **1 (Strongly Disagree)** through **3 (No Opinion)** to **5 (Strongly Agree)**. Please read each statement. Mark the **one** response that most clearly represents your degree of agreement or disagreement with that statement. **Please respond to all of the statements.**

	Strongly disagree	Disagree	No Opinion	Agree	Strongly agree
1. The nurse prescriber gave me time to clarify questions I may have had about my medication	1	2	3	4	5
2. The nurse prescriber provided me with information about the time I should take my medication	1	2	3	4	5
3. The nurse prescriber provided me with information on the frequency with which I should take my medication (for example twice a day, three times a day etc.)	1	2	3	4	5
4. The nurse prescriber provided me with information on the purpose of my medication	1	2	3	4	5
5. The nurse prescriber provided me with information on how to take my medication	1	2	3	4	5
6. I expect that it will be easy for me to follow the nurse's advice	1	2	3	4	5
7. The nurse prescriber told me the name of my medication	1	2	3	4	5
8. The nurse prescriber explained the side-effects of my medication	1	2	3	4	5
9. I would have liked to receive more information from the nurse about my medication	1	2	3	4	5
10. The nurse provided me with information on what to do if I missed a dose of my medication	1	2	3	4	5
11. Nurses should be able to prescribe medications for patients	1	2	3	4	5
12. I would prefer a doctor to prescribe my medication	1	2	3	4	5
13. I would prefer a nurse to prescribe my medication	1	2	3	4	5
14. I have no preference whether a doctor or nurse prescribes my medication	1	2	3	4	5



	Strongly disagree	Disagree	No Opinion	Agree	Strongly agree
15. It may be difficult for me to do exactly what the nurse told me to do	1	2	3	4	5
16. I'm not sure the nurse's treatment will be worth the trouble it will take	1	2	3	4	5
17. Receiving a prescription from a nurse reduced my waiting time	1	2	3	4	5

Please read the following statement and **circle the number** that best matches your view to the statement:

1. How likely are you to take the medicine prescribed by the nurse?      Not at all likely      1      2      3      4      5      6      7      Very likely

**SECTION 2 DIRECTIONS:** The statements below are designed to identify your attitudes about your **consultation** with a **nurse prescriber** during your recent visit to hospital. Each item has 5 possible responses. The responses range from **1 (Strongly Disagree)** through **3 (No Opinion)** to **5 (Strongly Agree)**. Please read each statement. **Circle the one** response that most clearly represents your degree of agreement or disagreement with that statement. **Please respond to all of the statements.**

	Strongly Disagree	Disagree	No opinion	Agree	Strongly Agree
1. Overall I was satisfied with the consultation from this nurse	1	2	3	4	5
2. This nurse was very careful to check everything when carrying out my care	1	2	3	4	5
3. I will follow this nurse's advice because I think she/he is right	1	2	3	4	5
4. The time I was able to spend with this nurse was a bit too short	1	2	3	4	5
5. The nurse explained the reasons for the advice given	1	2	3	4	5
6. Some things about the consultation with the nurse could have been better	1	2	3	4	5
7. The nurse listened very carefully to what I had to say	1	2	3	4	5
8. I thought the nurse took notice of me as a person	1	2	3	4	5

## Appendix III Patient Questionnaire (continued)

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>No opinion</b>	<b>Agree</b>	<b>Strongly Agree</b>
9. The time I was able to spend with this nurse was not long enough to deal with everything I wanted	1	2	3	4	5
10. I understand my treatment much better after seeing this nurse	1	2	3	4	5
11. The nurse was interested in me as a person not just my illness	1	2	3	4	5
12. I wish it had been possible to spend a little longer with the nurse	1	2	3	4	5
13. I am not completely satisfied with the advice received from this nurse	1	2	3	4	5

# Appendix IV Stakeholders' Questionnaire



University College Dublin

## Independent Evaluation of the Nurse/Midwife Prescribing Initiative

### Stakeholder's Questionnaire

*Please return your completed questionnaire in the  
enclosed stamped addressed envelope to:*

*Dr. Jonathan Drennan,  
School of Nursing, Midwifery and Health Systems  
University College Dublin  
Belfield  
Dublin 4*

## Appendix IV Stakeholders' Questionnaire (continued)

### Part 1 – Evaluation of Prescribing Initiative

This questionnaire is designed to elicit your views on the Nurse/Midwife Prescribing Initiative. Each item has 5 possible responses. The responses range from **1 (Strongly Disagree)** through **3 (No Opinion)** to **5 (Strongly Agree)**. If you have no opinion, choose response 3. Please read each statement. Mark the one response that most clearly represents your degree of agreement or disagreement with that statement. Please respond to all of the statements.

	Strongly disagree	Disagree	No Opinion	Agree	Strongly agree
1. Nurse/midwife prescribing is necessary	1	2	3	4	5
2. Nurse/midwife prescribing is a good service for patients	1	2	3	4	5
3. Prescribing should only be undertaken by doctors	1	2	3	4	5
4. Nurse/midwife prescribing saves time for doctors	1	2	3	4	5
5. Nurse/midwife prescribing increases the risk of incorrect treatment	1	2	3	4	5
6. Nurses/midwives should be allowed to prescribe medications	1	2	3	4	5
7. I support the nurse/midwife prescribing initiative	1	2	3	4	5
8. Nurse/midwife prescribing leads to extra healthcare costs	1	2	3	4	5
9. I trust nurses/midwives to prescribe correctly	1	2	3	4	5
10. I am worried that nurses/midwives do not have the necessary knowledge to prescribe	1	2	3	4	5
11. I fully understand nurses'/midwives' role as prescribers	1	2	3	4	5
12. Nurse/midwife prescribing has a positive impact on patient care	1	2	3	4	5
13. There is a need for more nurse/midwife prescribers	1	2	3	4	5
14. Overall the introduction of the nurse/midwife prescribing initiative has been a success	1	2	3	4	5
15. Nurse/midwife prescribing meets the needs of the patients	1	2	3	4	5
16. The prescribing of medicinal products by nurses and midwives will advance the nursing profession.	1	2	3	4	5

	Strongly disagree	Disagree	No Opinion	Agree	Strongly agree
17. Nurse/midwife prescribing results in financial savings	1	2	3	4	5
18. There are certain drugs that nurses/midwives should not be allowed to prescribe	1	2	3	4	5
19. There are certain conditions that nurses/midwives should not be allowed to prescribe for	1	2	3	4	5
20. Nurses/midwives receive adequate training for their role	1	2	3	4	5
21. I fear nurses/midwives will make an incorrect diagnosis	1	2	3	4	5
22. Nurse/midwife prescribing is unnecessary, patients can receive their medication from a doctor	1	2	3	4	5

**Thank you for completing Part 1. If a nurse/midwife prescriber is currently employed in your organisation please complete Part 2, if *not* please complete part 3 of the questionnaire.**

## Part 2 – Only Complete this Section of the Questionnaire if a Nurse/Midwife Prescriber is Currently Employed in your Organisation. Otherwise please proceed to Section 3

This questionnaire is designed to elicit your views on the role of Nurse/Midwife Prescribers within your organisation. Each item has 5 possible responses. The responses range from **1 (Strongly Disagree)** through **3 (No Opinion)** to **5 (Strongly Agree)**. If you have no opinion, choose response 3. Please read each statement. Mark the one response that most clearly represents your degree of agreement or disagreement with that statement. Please respond to all of the statements.

	Strongly disagree	Disagree	No Opinion	Agree	Strongly agree
1. The introduction of the nurse/midwife prescribing initiative has reduced delays in discharge of patients	1	2	3	4	5
2. The introduction of the nurse/midwife prescribing initiative has reduced delays in initiating inpatient treatment	1	2	3	4	5

## Appendix IV Stakeholders' Questionnaire (continued)

	Strongly disagree	Disagree	No Opinion	Agree	Strongly agree
3. The introduction of the nurse/midwife prescribing initiative has reduced the number of health care professionals a patient/service user must interact with	1	2	3	4	5
4. The introduction of the nurse/midwife prescribing initiative is more convenient for patients	1	2	3	4	5
5. The introduction of the nurse/midwife prescribing initiative has enabled patients to access medication quicker	1	2	3	4	5
6. The introduction of the nurse/midwife prescribing initiative has increased patient satisfaction levels	1	2	3	4	5
7. Nurse/midwife prescribing takes up too much of the nurse's/midwife's time	1	2	3	4	5
8. The introduction of the nurse/midwife prescribing initiative has freed up doctors' time	1	2	3	4	5
9. The introduction of the nurse/midwife prescribing initiative has had a positive impact on interprofessional relationships	1	2	3	4	5
10. Nurse/midwife prescribing enhances patient compliance	1	2	3	4	5
11. Nurse/midwife prescribing is safe	1	2	3	4	5
12. Nurse/midwife prescribing has reduced the need for patients with long-term illnesses to return to see their doctor as frequently as previously	1	2	3	4	5
13. Patients/service users are supportive of nurses/midwives prescribing	1	2	3	4	5
14. The introduction of the nurse/midwife prescribing initiative has increased nurses' job satisfaction levels	1	2	3	4	5
15. Supervising a nurse/midwife prescriber is a burden to my workload	1	2	3	4	5
16. Nurse/midwives are adequately supported by doctors in their role as prescribers	1	2	3	4	5
17. Nurse/midwives are adequately supported by pharmacists in their role as prescribers	1	2	3	4	5

### Part 3 – Demographic and Professional Profile

Please answer the following questions as they apply to you and your employment. Where indicated please tick the appropriate box.

**1. Please indicate Your Role in Relation to the Prescribing Initiative (Please tick as many as apply):**

Director of Nursing/Midwifery/Public Health	<input type="checkbox"/>
Assistant Director of Nursing/Midwifery/Public Health	<input type="checkbox"/>
Prescribing Site Co-ordinator	<input type="checkbox"/>
Medical Practitioner Mentor/Supervisor	<input type="checkbox"/>
Hospital Consultant/Doctor	<input type="checkbox"/>
Hospital Pharmacist	<input type="checkbox"/>
Academic (e.g. Professor/lecturer etc.)	<input type="checkbox"/>
Regulation (e.g. An Bord Altranais)	<input type="checkbox"/>
Policy (e.g. HSE, Department of Health & Children)	<input type="checkbox"/>
Other (Please state)	<input type="checkbox"/>

---

	Very involved	Somewhat involved	Minimal Involvement	No involvement
Please indicate your level of involvement in the introduction of the nurse/midwifery prescribing initiative	1	2	3	4

**1. Are you a member of your hospital's Drugs and Therapeutics Committee (please tick)?**

Yes

No





# Appendix V

## Prescribers' and Currently not Prescribing Questionnaires



University College Dublin

## Independent Evaluation of the Nurse/Midwife Prescribing Initiative

### Prescriber's Questionnaire

*Please return your completed questionnaire in the  
enclosed stamped addressed envelope to:*

*Dr. Jonathan Drennan,  
School of Nursing, Midwifery and Health Systems  
University College Dublin  
Belfield  
Dublin 4*

# Appendix V Prescribers' and Currently not Prescribing Questionnaires (continued)

## Part 1- Prescribing Practice

### 1. Are you currently prescribing (please tick)?

Yes

No

If **YES** please continue with this questionnaire. If **NO** please complete the '**Currently Not Prescribing**' questionnaire (yellow questionnaire)

### 2. Would you describe yourself as (please tick one only):

1. A frequent prescriber (prescribe weekly) -----[ ]

2. An occasional prescriber (prescribe monthly) -----[ ]

3. A non-frequent prescriber (prescribe less than once a month) ----- [ ]

### 3. How many prescriptions on average do you typically write per:

Week \_\_\_\_\_ (please state number)

### 4. How many items on average do you typically prescribe per:

Week \_\_\_\_\_ (please state number)

### 5. If you issue less than five prescriptions per week please give brief details of why you do not prescribe more frequently:

---

---

---

### 6. Are there any drugs you need/would like to prescribe in your everyday work but can't (please tick)?

Yes

No

If yes, what are the reasons you cannot prescribe these drugs?

---

---

---

**7. Is your prescribing predominantly (please tick)?**

- 1. Hospital based----- [ ]
- 2. Community based----- [ ]
- 3. Combination of hospital and community----- [ ]

---

**Part 2-Selection Process**

**1. Please give brief details of how you were chosen to complete the Certificate in Nursing (Nurse/Midwife Prescribing)**

---

---

---

---

---

**2. Was there any resistance to your selection for the course?**

Yes

No

If yes, please provide details:

---

---

---

---

---

**3. Were you satisfied with the application/selection process for the Certificate in Nursing (Nurse/Midwife Prescribing)?**

Yes

No

## Appendix V Prescribers' and Currently not Prescribing Questionnaires (continued)

If no, please give reasons:

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### Part 3-Professional Experience

The statements below are designed to identify your attitudes about your experiences as a nurse/midwife prescriber. Each item has 5 possible responses. The responses range from **1 (Strongly Disagree)** through **3 (No Opinion)** to **5 (Strongly Agree)**. Please read each statement. Mark the one response that most clearly represents your degree of agreement or disagreement with that statement. **Please respond to all of the statements.**

	Strongly disagree	Disagree	No Opinion	Agree	Strongly agree
1. I can prescribe safely and effectively	1	2	3	4	5
2. Prescribing has increased my confidence as a nurse/midwife	1	2	3	4	5
3. Now that I can prescribe I feel pressure to prescribe	1	2	3	4	5
4. Prescribing has earned me greater respect from other health care professionals	1	2	3	4	5
5. Prescribing has shifted my focus from my core nursing/midwifery skills	1	2	3	4	5
6. I fear making an incorrect diagnosis in my prescribing practice	1	2	3	4	5
7. The issue of accountability is never far from my mind when prescribing	1	2	3	4	5
8. I feel anxious about writing a prescription	1	2	3	4	5
9. I feel I have all the necessary skills and training to fulfil my role as a prescriber	1	2	3	4	5
10. Other health care professionals have a clear understanding of my role as a prescriber	1	2	3	4	5
11. Prescribing brings with it an increased workload	1	2	3	4	5

	<b>Strongly disagree</b>	<b>Disagree</b>	<b>No Opinion</b>	<b>Agree</b>	<b>Strongly agree</b>
12. Prescribing ensures better use of my skills	1	2	3	4	5
13. I am able to prescribe all the drugs I need in order to do my job	1	2	3	4	5
14. I fear litigation	1	2	3	4	5
15. I welcome the responsibility that prescribing brings	1	2	3	4	5
16. The ability to prescribe improves the quality of care I am able to offer patients	1	2	3	4	5
17. I am limited in my prescribing practice	1	2	3	4	5
18. I have increased my autonomy since I commenced prescribing	1	2	3	4	5
19. I sometimes feel uncertain about making a diagnosis	1	2	3	4	5
20. I require further education in pharmacology	1	2	3	4	5
21. I am aware of cost issues when I am prescribing	1	2	3	4	5
22. As a nurse/midwife who can prescribe I have an improved status	1	2	3	4	5
23. I am uncertain about which products and conditions I am allowed to prescribe for	1	2	3	4	5
24. I am satisfied with the level of supervision I receive in my role as a prescriber	1	2	3	4	5
25. I am happy to seek advice regarding my prescribing practices from doctors and/or pharmacists	1	2	3	4	5
26. I feel confident to discontinue a medication prescribed by another doctor/nurse	1	2	3	4	5
27. The introduction of this initiative has increased my level of job satisfaction	1	2	3	4	5
28. Overall I am confident in my prescribing practice	1	2	3	4	5

## Appendix V Prescribers' and Currently not Prescribing Questionnaires (continued)

### Part 4-Evaluation of the Prescribing Initiative

The statements below are designed to identify your overall opinion on the benefits or otherwise of the prescribing initiative. Each item has 5 possible responses. The responses range from **1 (Strongly Disagree)** through **3 (No Opinion)** to **5 (Strongly Agree)**. Please read each statement. Mark the **one** response that most clearly represents your degree of agreement or disagreement with that statement. **Please respond to all of the statements**

	Strongly disagree	Disagree	No Opinion	Agree	Strongly agree
1. The introduction of the nurse/midwife prescribing initiative has enabled patients to access medication quicker	1	2	3	4	5
2. The introduction of the nurse/midwife prescribing initiative has reduced delays in the discharge of patients	1	2	3	4	5
3. The introduction of the nurse/midwife prescribing initiative has reduced delays in initiating inpatient treatment	1	2	3	4	5
4. The introduction of the nurse/midwife prescribing initiative has reduced the number of health care professionals a patient/service user must interact with	1	2	3	4	5
5. The introduction of the nurse/midwife prescribing initiative is more convenient for patients	1	2	3	4	5
6. There is a need for more nurse/midwife prescribers	1	2	3	4	5
7. The introduction of the nurse/midwife prescribing initiative has increased patient satisfaction levels	1	2	3	4	5
8. The introduction of the nurse/midwife prescribing initiative has positive benefits for the nursing & midwifery professions	1	2	3	4	5
9. The introduction of the nurse/midwife prescribing initiative has freed up doctors' time	1	2	3	4	5
10. Overall the introduction of the initiative has had a positive impact on patient care	1	2	3	4	5
11. Nurse/Midwife prescribing enhances patient compliance	1	2	3	4	5
12. Nurse/Midwife prescribing is cost effective	1	2	3	4	5
13. Nurse/Midwife prescribing is safe	1	2	3	4	5

	Strongly disagree	Disagree	No Opinion	Agree	Strongly agree
14. Nurse/Midwife prescribing has reduced the need for patients with long-term illnesses to return to see their doctor as frequently as before	1	2	3	4	5
15. Patients are supportive of nurses/midwives prescribing	1	2	3	4	5
16. Overall the implementation of nurse/midwife prescribing initiative has been successful	1	2	3	4	5

**1. Thinking about your clinical practice area are there any limitations on your practice imposed by legislation related to nurse/midwife prescribing?**

Yes

No

**If yes, please provide details**

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**2. In your experience are there any barriers/limitations to successful nurse/midwife prescribing?**

Yes

No

**If yes, please specify**

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**3. Are there any conditions under which you do not feel comfortable to prescribe?**

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## Appendix V Prescribers' and Currently not Prescribing Questionnaires (continued)

### Part 5 -Support for my Role as Prescriber

The statements below are designed to identify your attitudes about levels of support you have received in your role as nurse/midwife prescriber. Each item has 5 possible responses. The responses range from **1 (Strongly Disagree)** through **3 (No Opinion)** to **5 (Strongly Agree)**. Please read each statement. Mark the **one** response that most clearly represents your degree of agreement or disagreement with that statement. **Please respond to all of the statements.**

	Strongly disagree	Disagree	No Opinion	Agree	Strongly agree
1. I am facilitated in my prescribing role by my prescribing site co-ordinator	1	2	3	4	5
2. I am facilitated in my prescribing role by my prescribing mentor	1	2	3	4	5
3. I am facilitated in my prescribing role by my Director of Nursing/Midwifery	1	2	3	4	5
4. I am facilitated in my prescribing role by the hospital pharmacist	1	2	3	4	5
5. I am facilitated in my prescribing role by the hospital drugs and therapeutics committee	1	2	3	4	5
6. I am facilitated in my prescribing role by the Office of the Nursing Services Director Health Service Executive	1	2	3	4	5
7. I am facilitated in my prescribing role by An Bord Altranais	1	2	3	4	5
8. I am satisfied with the Nurse and Midwife Prescribing Data Collection System	1	2	3	4	5
9. I receive support through the Irish Registered Nurse Prescribers eNetwork	1	2	3	4	5
10. I am facilitated in my prescribing role by hospital doctors/consultants	1	2	3	4	5
11. I am facilitated in my prescribing role by nurses in the clinical area in which I work	1	2	3	4	5
12. I was satisfied with the registration process put in place by An Bord Altranais	1	2	3	4	5
13. I was satisfied with the length of time it took for my registration application to be processed with An Bord Altranais	1	2	3	4	5
14. Overall my organisation is committed to nurse/midwifery prescribing	1	2	3	4	5



## Part 6-Continuing Professional Development

The questions below are designed to identify your experiences of your Continuing Professional Development (CPD) in relation to prescribing.

**1. Have you undertaken any formal continuing professional development (CPD) (e.g. workshops, study days) relevant to nurse/midwife prescribing since completion of the Certificate in Nursing (Nurse/Midwife prescribing)**

Yes

No

**If yes, please give details**

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**2. Are you able to engage in informal CPD? (e.g. private study, reading journals]. If yes please give examples, if no please give reasons as to why this is not possible**

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**3. In your opinion what are the top three continuing educational needs for nurse/midwife prescribers?**

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_

## Part 7-Demographic, Academic and Professional Profile

Please answer the following questions as they apply to you and your employment. Where indicated please tick the appropriate box.

**1. What is your age?**

\_\_\_\_\_Years

## Appendix V Prescribers' and Currently not Prescribing Questionnaires (continued)

### 2. Please indicate Your Gender:

Female

Male

### 3. Please specify your current grade

Staff Nurse

Clinical Nurse Manager I

Clinical Nurse Manager II

Clinical Nurse Manager III

Clinical Nurse Specialist

Advanced Nurse Practitioner

Other (Please state)

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### 4. Please specify the clinical area in which you work (for example Emergency Department, Psychiatry, Midwifery etc.)

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### 5. Please tick the highest academic qualification you currently hold

Certificate

Diploma

Higher/Postgraduate Diploma

Bachelor's Degree

Master's Degree

PhD

Other (Please state)

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6. Please indicate the length of time (years) since qualification as a nurse/midwife. If you hold multiple registrations please calculate from the time of your first registration

\_\_\_\_\_ Years

7. Please indicate the length of time since completing the course until your registration as a prescriber was complete

\_\_\_\_\_ Months

Thank you for taking the time to complete this questionnaire. Your assistance in providing this information is very much appreciated. If there is anything else you would like to tell us about your experience of nurse/midwifery prescribing please do so in the space provided below (please attach further sheets if required).

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If you have any queries about this questionnaire please do not hesitate to contact:

**Dr. Jonathan Drennan or Ms. Deirdre Allen**  
**School of Nursing, Midwifery and Health Systems**  
**University College Dublin**  
**Belfield**  
**Dublin 4**  
**Telephone: 01 – 716 6404 or 01 – 716 6673**  
**E-mail: Jonathan.Drennan@ucd.ie or Deirdre.Allen@ucd.ie**



University College Dublin

# Independent Evaluation of the Nurse/Midwifery Prescribing Initiative

## Currently Not Prescribing Questionnaire

*Please return your completed questionnaire in the  
enclosed stamped addressed envelope to:*

*Dr. Jonathan Drennan,  
School of Nursing, Midwifery and Health Systems  
University College Dublin  
Belfield  
Dublin 4*

Part 1- Prescribing Practice

1. Are you currently a Registered Nurse/Midwife Prescriber (please tick)?

Yes

No

2. Are you currently prescribing (please tick)?

Yes

No

If **NO** please continue with this questionnaire. If **YES** please complete the 'Prescriber's Questionnaire' (blue questionnaire)

3. Please provide reasons why you are currently not prescribing:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. Please indicate the length of time since you completed the Certificate in Nursing (Nurse/Midwife Prescribing) postgraduate educational programme?

\_\_\_\_\_ months

5. Have you completed the An Bord Altranais registration process?

Yes

No

If yes, were you satisfied with the registration process?

Yes

No

Appendix V  
Prescribers' and Currently not Prescribing Questionnaires  
(continued)

**If no please state reasons**

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**6. If you have not already registered are you intending to register as a nurse/midwife prescriber?**

Yes

No

**If no please give reasons**

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**7. If you are intending to register as a nurse/midwife prescriber when are you intending to register?**

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**8. Has your Collaborative Practice Agreement been approved by the Drugs and Therapeutics Committee of your hospital?**

Yes

No

**If no please give reasons**

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**9. Have you received a commencement date for prescribing?**

Yes

No

**If yes, please indicate when you are due to begin prescribing**

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**Part 2-Selection Process**

**1. Please give brief details of how you were chosen to complete the Certificate in Nursing (Nurse/Midwife Prescribing)**

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**2. Was there any resistance to your selection for the course?**

Yes

No

**If yes, please provide details:**

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**3. Were you satisfied with the application/selection process for the Certificate in Nursing (Nurse/Midwife Prescribing)?**

Yes

No

## Appendix V Prescribers' and Currently not Prescribing Questionnaires (continued)

**If no, please give reasons:**

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### Part 3 – Evaluation of Prescribing Initiative

This questionnaire is designed to elicit your views on the Nurse/Midwife Prescribing Initiative in Ireland. Each item has 5 possible responses. The responses range from **1 (Strongly Disagree)** through **3 (No Opinion)** to **5 (Strongly Agree)**. If you have no opinion, choose response 3. Please read each statement. Mark the **one** response that most clearly represents your degree of agreement or disagreement with that statement. **Please respond to all of the statements.**

	<b>Strongly disagree</b>	<b>Disagree</b>	<b>No Opinion</b>	<b>Agree</b>	<b>Strongly agree</b>
1. Nurse/midwife prescribing is necessary	1	2	3	4	5
23. Nurse/midwife prescribing is a good service for patients	1	2	3	4	5
24. Prescribing should only be undertaken by doctors	1	2	3	4	5
25. Nurse/midwife prescribing saves time for doctors	1	2	3	4	5
26. Nurse/midwife prescribing increases the risk of incorrect treatment	1	2	3	4	5
27. Nurses/midwives should be allowed to prescribe medications	1	2	3	4	5
28. I support the nurse/midwife prescribing initiative	1	2	3	4	5
29. Nurse/midwife prescribing leads to extra costs	1	2	3	4	5
30. I trust nurses/midwives to prescribe correctly	1	2	3	4	5
31. I am worried that nurses/midwives do not have the necessary knowledge to prescribe	1	2	3	4	5
32. I fully understand nurses'/midwives' role as prescribers	1	2	3	4	5
33. Nurse/midwife prescribing has a positive impact on patient care	1	2	3	4	5
34. There is a need for more nurse/midwife prescribers	1	2	3	4	5



	Strongly disagree	Disagree	No Opinion	Agree	Strongly agree
35. Overall the introduction of the nurse/midwife prescribing initiative has been a success	1	2	3	4	5
36. Nurse/midwife prescribing meets the needs of the patients	1	2	3	4	5
37. The prescribing of medicinal products by nurses and midwives will advance the nursing profession.	1	2	3	4	5
38. Nurse/midwife prescribing results in financial savings	1	2	3	4	5
39. There are certain drugs that nurses/midwives should not be allowed to prescribe	1	2	3	4	5
40. There are certain conditions that nurses/midwives should not be allowed to prescribe for	1	2	3	4	5
41. Nurses/midwives receive adequate training for their role	1	2	3	4	5
42. I fear nurses/midwives will make an incorrect diagnosis	1	2	3	4	5
43. Nurse/midwife prescribing is unnecessary, patients can receive their medication from a doctor	1	2	3	4	5

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## Part 4-Demographic, Academic and Professional Profile

Please answer the following questions as they apply to you and your employment. Where indicated please tick the appropriate box.

### 1. What is your age?

\_\_\_\_\_Years

### 2. Please indicate Your Gender:

Female

Male

## Appendix V Prescribers' and Currently not Prescribing Questionnaires (continued)

### 3. Please specify your current grade

Staff Nurse

Clinical Nurse Manager I

Clinical Nurse Manager II

Clinical Nurse Manager III

Clinical Nurse Specialist

Advanced Nurse Practitioner

Other (Please state)

### 4. Please specify the clinical area in which you work (for example Emergency Department, Psychiatry, Midwifery etc.)

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### 5. Please tick the highest academic qualification you currently hold

Certificate

Diploma

Higher/Postgraduate Diploma

Bachelor's Degree

Master's Degree

PhD

Other (Please state)

