# Review of Nurses and Midwives in the Prescribing and Administration of Medicinal Products

**Summary**JUNE 2005





# Contents

Introduction Steering Committee Membership Terms of Reference		1 2 2 3			
			Section 1 Literature	e Review	5
			1 Medication Manag	gement and the Process of Prescribing	5
			2 International Expe	eriences of Nurse Prescribing	6
3 Competency Frame	eworks	9			
4 Research Studies of	on Nurse Prescribing	10			
Section 2 Context	of Nursing and Midwifery	13			
5 The Context for a	n Expanded Scope of Practice	13			
6 Professional Guide	elines	16			
Section 3 Project A	ctivities	17			
7 Medication Manag	gement Seminars	17			
8 Revision of Guida	nce Document	18			
9 Needs Assessment	Survey	19			
10 Exploration of Nee	eds Survey	21			
11 Pilot Site Study		23			
Section 4 Discussio	n and Recommendations	25			
12 Discussion		25			
Recommendations		28			
References		30			

# Foreword

I am pleased to introduce this brief summary of the *Review of Nurses and Midwives in the Prescribing and Administration of Medicinal Products.* The full report is the culmination of a 31/2 year project and is a comprehensive evaluation of the need for the introduction of nurse and midwife prescribing in Ireland. The full report is available from the two bodies who initiated the Review. An Bord Altranais and the National Council for the Professional Development of Nursing and Midwifery and it is available on the websites of both organisations (www.nursingboard.ie and www.ncnm.ie).

The Review builds on the pioneering work of the *Report of the Commission on Nursing* and the *Scope of Nursing and Midwifery Practice Framework Report* and presents a clear and powerful case for expanding the medication management practices of nurses and midwives and most especially the introduction of prescriptive authority as an integral part of the national health strategy. The Review outlines how this can best be done to the benefit of the Irish health care system and the people it services, as well as the nursing and midwifery professions. I strongly urge the full implementation of the Review's recommendations.

I wish to thank the many individuals and organisations who gave generously of their time and expertise in contributing to this Review.

Anne Carrigy
Chairperson of the

Chairperson of the Review President of An Bord Altranais

# Introduction

The Review of Nurses and Midwives in the Prescribing and Administration of Medicinal Products is a joint project of An Bord Altranais and the National Council for the Professional Development of Nursing and Midwifery (the National Council). Previous consultative exercises of the Commission on Nursing and the Review of the Scope of Nursing and Midwifery Practice illustrated that nurses and midwives experienced challenges in their current roles with medication management. The possibility of enhanced responsibility and involvement of the professions with this critical activity allowing for improvements in patient care emerged from these reports. The principal objective of the current Review is to examine the potential future role of nurses and midwives in the prescribing of medications.

The Steering Committee represented members of the nursing, midwifery, medical, pharmacy and education professions, as well as representatives from the Nursing Policy Division and Pharmacy Division of the Department of Health and Children, and public and patient organisations, with the President of An Bord Altranais as Chairperson.

### **Members of the Steering Committee**

Mrs Anne Carrigy, Chairperson, Director of Nursing, Mater Misericordiae University Hospital, Dublin; President, An Bord Altranais (commenced September 2002)

Ms Sheila O'Malley, Chairperson, Director of Nursing and Midwifery, Health Service Executive (HSE) Eastern Region; Past President, An Bord Altranais (term completed September 2002, reappointed as a member January 2003)

Dr Cecily Begley, Director of School of Nursing and Midwifery, Trinity Centre for Health Sciences, The University of Dublin, Trinity College

Dr William Blunnie, Medical Council (resigned August 2004)

Mr Colum Bracken, Director of Nursing and Midwifery Planning and Development Unit, HSE North Eastern Area (resigned April 2004)

Mr John Byrne, An Bord Altranais (term completed September 2002)

Ms Antoinette Doocey, An Bord Altranais (term completed September 2002)

Ms Mary Durkin, An Bord Altranais (appointed January 2003)

Ms Mary Farrelly, Scope of Practice Representative, National Council for the Professional Development of Nursing and Midwifery

Mr Pearse Finnegan, National Council for the Professional Development of Nursing and Midwifery

Mr Pat Gaughan, Chief Executive Officer Group, Health Service Executive

Ms Margaret Hanahoe, Co-ordinator, Community Midwife Programme

Dr Velma Harkins, Irish College of General Practitioners

Ms Colette Hempenstal, Public Representative, (joined April 2002)

Ms Marie Keane, National Council for the Professional Development of Nursing and Midwifery

Ms Eileen Kelly, An Bord Altranais (term completed September 2002)

Ms Annette Kennedy, Nursing Alliance (February - September 2003)

Ms Catherine Killilea, Director of Nursing and Midwifery Planning and Development Unit, HSE Southern Area, (joined April 2004)

Ms Marita Kinsella, Assistant Registrar, Pharmaceutical Society of Ireland (joined April 2005)

Ms Veronica Kow, An Bord Altranais (appointed January 2003)

Mr Matthew Lynch, Assistant Registrar, Pharmaceutical Society of Ireland (resigned February 2005)

Dr Kathleen Mac Lellan, Head of Continuing Education and Professional Development, National Council for the Professional Development of Nursing and Midwifery

Ms Mary Mahon, Director of Public Health Nursing, HSE Community Care

Ms Ann Martin, An Bord Altranais (term completed September 2002)

Ms Mary McCarthy, Chief Nursing Officer, Nursing Policy Division, Department of Health and Children

Mr Tom McGuinn, Chief Pharmacist, Department of Health and Children (resigned March 2005)

Mr Stephen McMahon, Chairperson, Irish Patients Association (joined April 2002)

Ms Kathryn McQuillan, National Council for the Professional Development of Nursing and Midwifery (resigned March 2003)

Ms Catherine McTiernan, An Bord Altranais (appointed January 2003)

Ms Jacinta Mulhere, An Bord Altranais (term completed September 2002)

Ms Yvonne O'Shea, Chief Executive Officer, National Council for the Professional Development of Nursing and Midwifery

Ms Mary Power, Nursing Alliance (temporarily replaced by Annette Kennedy, February - September 2003)

Dr Colm Quigley, Vice President, Medical Council (appointed April 2005)

Ms Simonetta Ryan, Principal Officer, Nursing Policy Division, Department of Health and Children (appointed September 2004)

Ms Valerie Small, Advanced Nurse Practitioner (Emergency)

Ms Pauline Treanor, An Bord Altranais (appointed January 2003)

### In Attendance

Ms Anne-Marie Ryan, Chief Education Officer, An Bord Altranais

Mr Thomas Kearns, Acting Chief Education Officer, An Bord Altranais (January - June 2005)

Ms Kathleen Walsh, Project Officer

Ms Denise Carroll, Project Assistant

### **Terms of Reference**

- 1. Review of current practice, identifying relevant issues
- 2. Review of appropriate international literature and experience
- 3. Review of national and international legislation relating to nurse and midwife prescribing
- 4. Review of the *Guidance to Nurses and Midwives on the Administration of Medical Preparations* (An Bord Altranais, 2000a)
- 5. Review of intra- and inter- professional issues and their implications for nurse and midwife prescribing
- 6. Consideration of the circumstances in which nurses and midwives might prescribe
- 7. Identification of pilot sites suitable for the initiation of nurse and midwife prescribing
- 8. Identification and delivery of educational preparation necessary to support nurse and midwife prescribing
- 9. Consideration of documentation necessary to support nurse and midwife prescribing
- 10. Initiation and evaluation of nurse and midwife prescribing in pilot sites
- 11. Production of detailed guidelines including a framework for nurse and midwife prescribing where appropriate.

The Review has extended over 31/2 years with an interim report produced in July 2003 for the Boards of An Bord Altranais and the National Council. In December 2004 a report was published giving a summary of progress and outlined the concluding activities of the Review (*Review of Nurses and Midwives in the Prescribing and Administration of Medicinal Products – Progress Report*). The Final Report presents the full literature review, project activities and discussion.

The Summary Report provides an overview of the Final Report content and comprises four sections. The first section involves the literature review including the concept of medication management and the prescribing process. The international experiences of nurse/midwife prescribing and competency frameworks for advanced practice and prescriptive authority are examined. The research studies on nurse prescribing conclude the literature review. Section two examines the context of nursing and midwifery as they relate to an expanded scope of practice for medication management. The professional guidelines provided by An Bord Altranais are presented. The third section is devoted to the project activities of the Review. They are the medication management seminars; revision of the guidance document on the administration of medications; the needs assessment survey; the exploration of needs survey and the pilot study of collaborative prescribing. The final section presents a discussion of the themes from the literature review and project activities and concludes with the recommendations of the Steering Committee.

### **SECTION 1**

## Literature Review

### 1. Medication Management and the Process of Prescribing

### **Medication Management**

The term *medication management* has been employed extensively in health care literature to describe the interventions and activities of nurses and other health care professions involving medicines. It has been introduced as the core concept for the current Review.

- The United Kingdom's Department of Health (DH) describes medicines management as "...the clinical, cost-effective and safe use of medicines to ensure that patients get the maximum benefit from the medicines they need, while at the same time minimising potential harm" (DH 2004, p. 1).
- The University of Keele's Department of Medicines Management has adopted the definition: "Medicines management seeks to maximise health gain through the use of medicines. It encompasses all aspects of medication use from the prescribing of medicines through the ways in which medicines are taken or not taken by patients" (University of Keele, 2005).
- The Nurses Board of Victoria (2001) provides a definition of medication management incorporating the phrase "therapeutic medication management". Components of the activity include the assessment and diagnosis of the patient, providing advice to the patient regarding correct use of medications and the administration, supply and sale of medicines.
- Nurse researchers McCloskey and Bulechek (2000), describe medication management as: "...the facilitation of safe and effective use of prescription and over-the-counter drugs."

### **Nursing Activities in Medication Management**

Nursing activities in the management of medications include the monitoring of the patient for therapeutic effects, adverse effects and non-therapeutic drug interactions (McCloskey & Bulechek, 2000; Naegle, 1999; Nurses Board of Victoria, 2001). Education of the patient is also an integral part of this practice, in collaboration with other health care professionals (Naegle, 1999). Medication management (inclusive of prescribing) is described as a comprehensive intervention that encompasses the nurse's knowledge, and activities that are undertaken for the patient's maximum benefit from pharmacotherapeutic agents (Naegle, 1999). The importance of educating nurses and midwives on the comprehensiveness of medication management and its related interventions cannot be underestimated when considering an expansion of scope of practice involving medicines (Bailey, 1999; Naegle, 1999; Nurses Board of Victoria, 2001; Wong & Rawlins, 2000).

### **The Prescribing Process**

In considering the introduction of nurse and midwife prescribing in Ireland, it is critical that health care practitioners, service providers and policy makers possess a general understanding of the prescribing process, without which there cannot be informed debate. The formation of educational, clinical practice and regulatory requirements for nurses and midwives to safely and effectively prescribe must be founded on an agreed consensus as to what prescribing entails and the skills and knowledge that an individual prescriber should possess.

### **Prescribing Practice Models**

A summary of three prescribing models is presented below, incorporating the works of various authors (Buchan & Calman, 2000 and 2004; Cohn, 1984; McDermott, 1995; New Zealand Ministry of Health, 1997; Nolan & Can, 2001; Pearson, 2001; Poulton, 1994; Snell, 1999). It is important to note that there is no uniformity of prescribing practices amongst those nurses and midwives in other countries who have obtained prescriptive authority.

- Initial/Independent/Autonomous: Under this model, the nurse/midwife is legally authorised to independently prescribe or advise about medications. A limited or open drug formulary may be used to determine the specific medication to be prescribed, as determined by legislation and local policy. The nurse/midwife encompasses the prescribing process in his/her overall care of the patient/client. This model supports the autonomy of the nurse's/midwife's prescribing decisions, with the accountability of the decision fully resting with them.
- Dependent/Collaborative/Semi-Autonomous/Supplementary: Under this model, the nurse/midwife is legally authorised to prescribe medications in collaboration with a medical practitioner. This may involve a written agreement and/or verbal consultation between the nurse/midwife and the medical practitioner as to which medications she/he is authorised to prescribe within that practice. Direct on site supervision by a doctor may or may not be required. The accountability for the patient assessment, the treatment plan and the decision to prescribe rest fully with the nurse/midwife. In some practices of collaborative prescribing, the nurse/midwife is limited to making adjustments to a medication, such as dosage changes and prescribing repeat prescriptions.
- **Group Protocols:** The group protocol model is not, strictly, prescribing in the true sense. It involves the use of written guidelines developed through multidisciplinary collaboration by health care professionals (nursing, medicine, pharmacy) and based on evidence of best practice, under which specific medications are supplied and administered by nurses/midwives to patient/clients in a defined clinical situation. The accountability of all individuals involved in the use of the protocol should be stated along with the identified patient population. The nurse/midwife using the protocol model is responsible for determining whether or not the patient's/client's condition warrants the use of the medication protocol and it applies only to the defined medication stated in the protocol.

### 2. International Experiences of Nurse Prescribing

The delivery of care provided by nurses and midwives has undergone significant change on the international scene due to a variety of interrelated factors, including economic circumstances, a diminishing number of medical providers, the unavailability of adequate health services in underserved and rural areas and the growing specialisation amongst the professions. These factors, coupled with the increasing specialisation of nurses and midwives in association with an expanded and advanced scope of practice, have made prescribing an essential component of medication management by nurses and midwives in the United Kingdom, United States, Canada, New Zealand, Australia and Sweden, and their experiences are reviewed below.

### **United Kingdom**

In 1989, the report of the *Advisory Group on Nurse Prescribing*, known as *Crown 1*, (DH, 1989) recommended that nurses holding a district nurse or health visitor qualification should be able to prescribe from a limited formulary, which included over-the-counter medications and a small number of prescription-only medications. It also recommended that doctors and nurses should collaborate in drawing up group protocols to allow the supply and administration of medications by nurses to groups of patients with similar needs (e.g., vaccinations). The government supported the recommendation for limited independent prescribing and legislative changes were made enabling the first pilot sites to be conducted in 1994 (Caulfield in Jones, 1997).

A second *Crown* report, issued in two parts, examined both the protocol issue (DH, 1998) and the extension of prescribing rights to other professional groups (DH, 1999). The first part dealt solely with group protocols, termed as *patient group directions*, which provided a framework for the necessary components of a group protocol for safe and effective practice. Changes to the law were also recommended to ensure the legality of patient group directions, and the government accepted this recommendation.

Health care professionals qualified to supply or administer medicines under a patient group direction included nurses, midwives, health visitors, pharmacists, ambulance paramedics, physiotherapists, occupational therapists and radiographers (NHS Modernisation Agency – Changing Workforce Programme and Department of Health – Core Prescribing Group, 2005). Since 2003, many organisations outside of the National Health Service are authorised to use them also. Medications that can be supplied or administered under a patient group direction include most licensed pharmacy, general sales list and prescription-only medications. Initially controlled scheduled drugs were excluded. However, in 2003 the government amended the legislation pertaining to the *Misuse of Drugs Act* (1971) and associated regulations to allow many to be supplied under protocol.

The second and final report of *Crown 2*, delivered in 1999, recommended that the legal authority in the UK to prescribe should be extended to all registered nurses and other health professionals (DH, 1999). In 2001, legislation was enacted to allow nurses in a number of settings to prescribe from an expanded but still limited nurses' prescribing formulary (approximately 140 medications). Further legislation in 2004 expanded the

medication formulary and included a broader number of health conditions for nurse prescribers to treat. Government consultation with key stakeholders continues to progress the work to expand independent prescribing and the number of medications authorised within the extended formulary for nurse prescribers (DH, 2005a).

Crown 2 also recommended the introduction of a new form of prescribing, to be undertaken by non-medical health professionals, after a diagnosis had been made and a Clinical Management Plan drawn up for the patient by a doctor in agreement with the patient. April 2003 saw the introduction of *supplementary prescribing* for registered nurses, midwives and pharmacists. These prescribers are legally authorised to prescribe from a broader range of medications than independent nurse prescribers, and are able to manage more complex health conditions after the medical practitioner performs the initial assessment and treatment planning. There is no designated medication formulary and supplementary prescribers have the discretion to alter dosage, frequency and active ingredients of the medication within the limits of the agreed clinical management plan (DH, 2005b).

Midwives are authorised under legislation to supply and administer specific medications for use in their practices without the need for a prescription. Changes in the medicines legislation for advancing nurse prescribing have prompted midwifery professional organisations to consider the various prescribing models for adoption for their own speciality.

The initial education and training for nurse prescribers, begun in the mid 1990s, was replaced in early 2004 with a new course that takes place over a three/six month period, including 25 taught days in a university and 12 clinical days when a medical practitioner will provide the student with supervision. The Department of Health has recommended that nurses put forward for training as prescribers have at least three years' post-registration experience (NHS & DH, 2005). Supplementary prescribing is based on the structure for the 'extended formulary' education with an additional module dealing with the content and concept of the model.

### **United States**

Nurse and midwife prescribing has evolved in the US out of the establishment of the advanced practice roles of the nurse as nurse practitioner and nurse-midwife (Towers, 1999). As part of the expanded scope of practice in providing primary care, the ability of the advanced practice nurse to perform comprehensive health assessments, make clinical diagnoses and prescribe treatments was recognised by health care providers and organisations. Federal and state health care policies have influenced the initiation and development of advanced nursing and midwifery practices across the health care continuum. There was no gate-opening policy or legislation at a national level for the advanced practice nurse in obtaining prescriptive authority, as nursing and midwifery practice is regulated at state level, and each state legislates differently.

Medicare and Medicaid (two programmes administered at state and federal government levels to provide health care to eligible individuals) have acknowledged the value of the advanced practice nurse/midwife in providing quality, cost-effective health care, by mandating reimbursement for their services. These programmes, together with consumer demand and preference, have contributed to the growing numbers of advanced practice nurses/midwives and have pushed the agenda for legislative and regulatory changes to enable these practitioners to prescribe for their patients and clients.

Initially, in states where nurses work as nurse practitioners, legislation was introduced to allow them to prescribe medications under the rules and regulations of the regulatory Boards of Medicine and Nursing, and prescriptive authority for advanced practice nurses was limited to a dependent/collaborative model. Prescribing authority then progressed to allowing over-the-counter medications and a limited number of prescriptive medications, on a formulary to be initiated and written by the nurse practitioner. These often limiting formularies have since been replaced in many states by collaborative practice agreements between the medical practitioner and the advanced practice nurse, whose authority in prescribing medications continues to evolve in the United States, particularly with regard to controlled scheduled drugs (Fennell, 1991; McDermott, 1995; Pearson, 2003).

An annual summary of legislation for advanced practice nursing is published by the American Academy of Nurse Practitioners, which details prescriptive authority developments (Pearson, 2003; Phillips, 2005). In 2005, 13 states and the District of Columbia authorise advanced practice nurses to independently prescribe, including controlled drugs. Thirty-three states require some degree of medical practitioner involvement or delegation for prescription writing to the advanced practice nurses; this includes controlled medications. In four states, advanced practice nurses are not allowed to prescribe controlled medications; however, they may prescribe other medications with a doctor's participation. This may involve state mandated requirements for collaborative practice agreements between the advanced practice nurse and the medical practitioner.

Those advanced practice nurses who receive prescriptive authority by the relevant state regulatory agencies are required to undergo extensive education in pharmacology, physical assessment, clinical decision-making and diagnostic skills at a graduate, master's level (American Academy of Nurse Practitioners, 1998; American College

of Nurse-Midwives, 1998; Pearson, 2003). In many states, national certification and continuing education requirements, some involving specific unit hours in pharmacology, have been included in the regulatory policies for nurse prescribing. The hours for these courses may vary from state to state (McDermott, 1995; Pearson, 2003; Phillips, 2005).

### Canada

The nursing role of advanced practice and accompanying prescriptive authority in Canada is difficult to analyse since there is great variability owing to regulation at both federal and provincial levels (de Leon, Chalmers & Askin, 1999). Essentially, nurses who are able to prescribe in Canada are working either as nurse practitioners in primary care or in an advanced practice role in remote and isolated regions. The implementation of prescribing rights for nurses has not occurred on its own but as part of the roles of the nurse practitioner and nurses working in remote and isolated areas with indigenous communities.

There is a distinct difference regarding prescriptive authority between those working as nurse practitioners in primary care and those working in isolated areas. The role of the nurse practitioner in Canada had an early start in the 1970s. However, it was not until the mid 1990s, with the government's focus on improving health care in the community, that significant efforts have been made in expanding nurses' scope of practice. As regulatory frameworks continue to be structured for nurse practitioners, many provinces are also implementing legislation for prescribing and, in some areas, this extends to nurse practitioners working in acute hospital settings (Nurse Practitioners' Association of Ontario, 2005). The provinces of Ontario, Alberta and British Columbia are examples of where significant advances have been made.

Nurses in federal employment have been able to prescribe since the early 1990s as part of their delivery of care in meeting the health needs of remote, isolated and indigenous communities. A Nurses Drug Classification System was created as part of the framework for allowing these nurses to prescribe certain drugs, based on the need for medical practitioner consultation or treatment initiated by the nurse and other variables (Buchman & Calman, 2000).

Clinical practice guidelines have also been developed for use by these nurses for the assessment, diagnosis and treatment of common disease entities and emergency situations (Health Canada, 2001). The educational programme consists of a postgraduate 16-week course involving clinical skill development

Midwifery is a rapidly growing profession in Canada and the legislation and models of midwifery care are diverse across the country (Canadian Association of Midwives, 2005). Some provinces or territories have midwifery legislation, and others are in the process of developing it. Where midwifery practices are regulated, there are varying degrees of autonomy and prescriptive authority.

A medical directive is a form of prescribing similar to the protocol model, used by nurses and midwives. It is defined as a medical practitioner's order, which can apply to a range of patients/clients who meet certain conditions. Strict guidelines are provided for the directives. They identify the specific medication, the particular condition that must be met and any specific circumstances that must exist prior to the directive being implemented (College of Nurses of Ontario, 2004).

### **New Zealand**

Nurse prescribing has developed in tandem with the role of the nurse practitioner (Nursing Council of New Zealand, 2001). In 1999, after consultation with key stakeholders, the New Zealand government approved authority for limited prescribing for defined scopes of advanced practice nursing in aged care and child family health. These two areas of practice were selected for the perceived benefits relating to the improved flexibility in the delivery of care to these populations and also improved access to treatment.

The New Zealand Medicines Act, 1981 was amended in 1999 to enable a new class of designated prescribers the authority to prescribe. The model of prescribing practice introduced was autonomous, without supervision of a medical practitioner.

The Ministry of Health charged the Nursing Council of New Zealand with responsibility for establishing the competency requirements of advanced speciality practice, experience and training of nurse practitioners having the authority to prescribe. The Nursing Council requires a person applying for nurse practitioner and prescriber registration to have a minimum of four to five years in a specialist area and have the equivalent of a master's level education from a school approved by the Nursing Council.

The original changes made to the medicines legislation in 1999 were amended in 2004. The new regulatory structure allows all new prescribers legal access to all pharmacy-only, prescription and general sale medicines listed in the medicines regulations. As a result, each registration authority is responsible for the approval listing of medications for prescribing for each designated scope of practice (Hughes & Lockyer, 2004).

Midwives in New Zealand have been regulated by the national government and the Nursing Council to prescribe medicines since 1991 (New Zealand Ministry of Health, 1997). The midwife is authorised to prescribe any medicines that have relevance to midwifery care and these can be prescribed from conception up to the six-week postnatal check. A new separate regulatory body has been established for midwives; it is not known yet whether they will follow the precedent set by the Nursing Council for defining the standards or scope of practice for prescriptive authority for midwives.

The Ministry of Health identified that, in the everyday delivery of care, standing orders and medication protocols were used as means for health care professionals to supply or administer medications. Following public consultation on the subject, legislation was passed in 2002 for the guidelines on the development and operation of standing orders (New Zealand Ministry of Health, 2002). Audit practices and application of fines for non-compliance were included in this regulatory framework.

### **Australia**

There has been an expansion of the scope of practice and limited prescriptive authority of nurses and midwives in many areas of Australia, in order to improve health care delivery in rural, outback and under-served areas, which have suffered from unavailable or poorly accessible medical services. Throughout Australia, the individual states are responsible for determining prescriptive authority for nurses and midwives. In many of these states, such as Western Australia, Victoria and New South Wales, this authority has been linked with defining the scope of practice for nurse practitioners in their respective areas (Royal College of Nursing Australia, 2002). Similar to the United States, differences exist within both legislative and professional regulatory structures for nurses to prescribe. A collaborative model of prescribing practice is most typical as the advanced practice roles continue to evolve in the community and in acute care settings.

The state of Queensland has implemented a unique approach to expanding nurses' and midwives' medication management practices that allows for advanced educated professionals to initiate medical interventions without a doctor's orders. Health Management Protocols and Drug Therapy Protocols have been established through law to provide a regulated mechanism for health service providers to meet the needs of the population for medications and medical treatments, particularly in rural and remote areas (Queensland Nursing Council, 1999). They cover an extensive range of health conditions and associated medical interventions that are detailed in the Primary Care Clinical Care Manual used by the nurse in practice (Queensland Health and Royal Flying Doctor Service, 2001).

The regulation of midwifery practices varies considerably among Australia's eight states and territories. The report of the working group, *The Review of Services Offered by Midwives* (National Health Medical Research Council, 1998), found that there were divergent practices of ordering and interpreting diagnostic studies and prescribing of medications that were not necessarily supported or authorised by state legislation and/or midwifery regulation. Both the government and professional organisations at national and state/territory levels are addressing the differing standards for education and regulation.

### **Sweden**

District nurses practising in health care and medical care settings outside of hospitals have had prescribing authority from the government since 1994, following a pilot scheme in 1988 (Wilhelmsson, Ek & Åkerlind, 2001). These nurses are authorised to prescribe medications for certain indications. Over 230 medications for over 60 areas of health indications or conditions are available for the nurse to consider. In 1997, the government evaluated the prescribing practices of these district nurses, and this showed that there had been many positive results (Socialstyrelsen, National Board of Health and Welfare, 1997). As a direct consequence, the government has recently extended prescribing authority to nurses working in local authorities in the care of the elderly.

Midwifery practices in Sweden utilise both independent and collaborative models of prescriptive patterns, most prominently in family planning with the prescribing of oral contraceptives. The educational requirements for midwifery involve working as general nurse for one year followed by 18 months of specialised training (Ragnar, Tydén & Olsson, 2003).

### 3. Competency Frameworks

An Bord Altranais defines competence as the ability of the registered nurse to practise safely and effectively, fulfilling his/her responsibility within his/her scope of practice (An Bord Altranais, 2000b). The objective of a competency framework is to ensure that students acquire the skills of critical analysis, problem-solving, decision-making, reflective skills and abilities essential to the art and science of nursing.

### **National Competencies**

An Bord Altranais has established national competencies as part of the *Requirements and Standards for Nurse Registration Education Programmes* (An Bord Altranais, 2005a). The domains of competence for nursing practice approved by An Bord Altranais are: professional/ethical practice; holistic approaches to care and integration of knowledge; interpersonal relationships; organisation and management of care; and personal and professional development.

### **International Experiences**

Governmental health care and nursing and midwifery organisations in other countries have developed competency frameworks for nurses and midwives for safe professional practice (Australian Nursing and Midwifery Council, 2004; Australian Nursing Federation, 2000; College of Midwives of British Columbia, 1997; National Council of State Boards of Nursing and National Organisation of Nurse Practitioner Faculties, 1998; National Organisation of Nurse Practitioner Faculties and American Association of Colleges of Nursing, 2002; National Prescribing Centre, 2004, 2001; Nursing Council of New Zealand, 1999). Many have given special attention to the activity of medication management, particularly prescribing, within the individual competency structures.

### **Shared Themes**

The competencies developed by the professional and regulatory nursing and midwifery organisations to support prescribing (typically within an advanced practice model) share many themes in setting the standard for guiding programme/curriculum development, reflecting current practice and addressing continuing professional development needs. Patient assessment involving physical examination, history-taking, identification of risk factors, interpretation of laboratory and diagnostic tests, pharmacotherapeutics, treatment planning, prescribing effectively and safely, treatment planning and critical review and audit represent some elements listed. These shared themes and subject matter of the international frameworks, coupled with the established domains identified by An Bord Altranais, were employed in this Review in devising competencies for collaborative prescribing for nurses and midwives in the pilot study.

### 4. Research Studies on Nurse Prescribing

Since prescribing is an expansion of practice by nurses and midwives, an examination of the research studies on nurse prescribing has been conducted from a quality and regulatory perspective. Studies have been conducted principally in the primary care setting, where the need for this role has been greatest internationally. There are a few studies conducted in secondary care speciality areas and these are also referred to. Many of the studies cited involved nurses working in advanced practice positions (e.g. nurse practitioners), and prescribing was not the only outcome examined.

Eight themes have been used for the presentation of the outcomes. They are:

- Appropriate and safe prescribing
- Patient satisfaction
- Convenience and greater accessibility for patients
- Nurses as information providers
- Improved medication compliance by patients
- Fewer pharmacological interventions by the prescribing nurse
- Better clinical decision-making by the nurse prescribers
- Cost-effectiveness.

Many studies considered more than one of these themes and so they are not mutually exclusive.

When considered from a regulatory perspective, the studies encompass the principles of providing effective, safe and ethical care.

A summary of the studies evaluating the need for prescribing by nurses who do not yet have prescribing authority is also included. A comprehensive examination of all of the research studies is found in the main Final Report – Chapter 4.

### **Need for Nurse Prescribing**

This focus is a helpful one for key stakeholders as they can examine where the real need is, for which patient/client groups, what benefits might result and what supports the prescribing nurse or midwife may

require. Most nurses in these studies agreed on what was important to support this practice, such as formal and informal mechanisms. Teamwork, peer and doctor support were all deemed critical elements.

Nurses practicing in psychiatric care settings and community mental health areas were studied in both the United Kingdom (Allen, 1998; Hemingway, et al., 2001; Nolan, Hasque & Badger, 2001) and Australia (McCann & Baker, 2002). Issues to emerge included identifying specific areas that would benefit from nurse prescribing, and consideration of the extent of prescriptive authority – independent, collaborative and based on one's scope of practice.

Identifying the need for prescribing has also been examined from other specialities – dermatology (Jackson, 2000), paediatrics (Gibson et al., 2002), practice nurses (Ogilvie, 1999) and family planning (Tyler & Hicks, 2001). The supports required for these specialised nurses for expanding and developing their roles with regard to education, clinical experience, peer support were considered.

### **Appropriate and Safe Prescribing**

Two studies (Mayes, 1996; Spitzer et al., 1974) examining the prescribing patterns of nurse practitioners compared with doctors revealed that advanced nurses working in primary care settings were appropriately and safely prescribing within their scope of practice for their clients. Another study within an inpatient dermatology setting (Cox, Walton & Bowman, 1995) showed that nurses made more prescribing decisions in line with experienced consultant dermatologists than did the senior house officers. Additional studies on this theme include Cox and Jones (2000), Myers et al., (1997) and Rosenaur et al., (1984).

### **Patient Satisfaction**

Myers, Lenci and Sheldon (1997) examined the suitability of nurse practitioners in assessing and managing urgent clinical problems presenting to a general practice. Results showed that the patients fully supported the policy of offering nurse practitioner consultations. Results from a study by Shum et al., (2000) showed that patients seen by practice nurses in a minor illness service were significantly more satisfied with their consultation than those provided by the general practitioner. A study by Kinnersley et al., (2000) showed similar results.

Horrocks et al., (2002) in a systematic review of studies of nurse practitioners and doctors providing care at first point of contact in a primary care setting found that patients were more satisfied with their consultation with a nurse practitioner than with the doctor, in both US and UK general practice settings.

### **Convenience for Patients**

The issue of inconvenience for patients as a result of the nurse's inability to prescribe has been studied by Chapple (2001) and Biester and Collins (1991). Delays experienced by patients were one of the main findings in the *Cumberlege Report of Community Nursing in the UK* (DHSS, 1987) which provided the impetus for the extension of prescribing authority to nurses.

The benefit of nurse prescribing in saving time was recognised by the main study evaluating nurse prescribing in the UK (Luker et al., 1997). Additional work by Brooks (2001) also revealed that patients found nurse prescribing convenient.

### **Nurses as Information Providers**

The communication skill of the nurse in caring for patients has been found to be a critical element in stating the case for prescriptive authority. Findings from research conducted by Brooks et al., (2001) and Luker (1997) showed that the prescribing nurse shared greater information and that the approachability and time spent with the patient were influencing factors. Other researchers found similar findings in Accident and Emergency settings (Byrne et al., 2000; Cooper et al., 2002 and Sakr, 1999).

### **Improved Medication Compliance by Patients**

A US study (Office of Technology Assessment, 1986) has shown that the patients of nurse practitioners and nurse-midwives had higher compliance with recommended therapies because they provided better patient education, including non-pharmacological alternatives and complementary therapies. This finding was further supported by Brown and Grimes's (1995) meta-analysis of patient outcomes in primary care of nurse practitioners and nurse midwives when compared with physicians. Compliance was somewhat better in patients who had been randomly assigned to the nurse practitioner. In mental health, Nolan, Carr and Harold (2001) found that nurse prescribers provided better patient education and that this resulted in reduced side effects from drugs for their patients.

### **Fewer Pharmacological Interventions**

Mahoney (1994) compared nurse practitioners with physicians in a simulated study to determine whether extending prescriptive authority to nurses reduced the quality of prescribing. Study findings indicated that the nurse practitioners scored higher on an index of appropriateness than the physicians. These findings support previous research that recorded more non-drug interventions and fewer drug recommendations by nurse practitioners (Munroe et al., 1982; Simborg, Starfield & Horn, 1978).

### **Clinical Decision-Making**

The process of providing safe and effective prescribing is a direct result of the clinical assessment skills and decision-making competence of the clinician. A survey of primary care physicians and nurse practitioners conducted by Avorn et al. (1991), found that nurse practitioners were far more likely than physicians to assess the patient's previous medical history before making a decision.

In Louisiana, US, a project was set up to study the safety and effectiveness of allowing advanced practice nurses to prescribe medications to acutely and chronically ill patients (Hamric et al., 1998). The evaluations conducted by the physicians showed that, in all cases in this study, the physicians supported the advanced practice nurses' diagnostic and prescriptive decisions.

### **Cost-effectiveness**

Few studies have measured the economic impact of nurse prescribing, yet it is one of the main considerations used by governments and legislators in deciding whether or not to extend this role to nurses. Ferguson et al., (1998) conducted an economic analysis of the eight demonstration sites of the first nurse prescribers in the UK and found no evidence that nurse prescribing had increased costs. Other studies on the subject of cost have not been specific to prescribing but instead focused on a general comparison of the cost-effectiveness of nurse practitioners versus doctors in providing care (Munroe et al., 1982; Sutcliff, 1996 and Venning et al., 2000). Netten and Knight (1999) concluded that, when the respective costs of all nurse and doctor training were compared over their expected working lives, nurses were more cost-effective than general practitioners in treating minor illnesses.

### **SECTION 2**

# Context of Nursing and Midwifery

### 5. The Context for Expanded Scope of Practice

Legislation directs nursing and midwifery practice, particularly in relation to medicinal products. Regulatory bodies such as An Bord Altranais, which was established under the *Nurses Act, 1950* and reconstituted by the *Nurses Act, 1985* determine the professional standards for nurses and midwives. The process of professional development and role expansion has been significant over the past few years and continues to impact on health care services. An awareness of past history, legislation and regulation is essential when considering nursing and midwifery professional role expansion in relation to medication management and prescriptive authority.

Historical accounts of Irish nursing and midwifery extending back to the 18th century depict the task-dominated practices of the time for hygiene and housekeeping. With the progression of time and the formation of the General Nursing Council of Ireland (established 1919) and the Central Midwives Board (established 1918), school curricula integrated the subject of medication administration. The responsibilities of these agencies were formally taken over by the establishment of An Bord Altranais in 1950.

All direction on the administration of medications was provided for at the local level until the publication of the first guidance document by An Bord Altranais in 1990. These first guidelines provided nurses and midwives with guidance on the administration of medical preparations. Midwives received additional information on medicinal products in the *Guidance to Midwives*, also published in 1990.

### **Recent Changes**

The context of nursing and midwifery in Ireland has seen change in recent years, owing to shifting epidemiology, and the increasing complexity and pace of health care technology, accompanied by the need to advance skills and knowledge. The initiation of government policies and strategies, primarily the health service reform programme, have driven the reconfiguration of the Irish health care system.

Many of the changes currently affecting nursing and midwifery have occurred as a result of the implementation of the *Report of the Commission on Nursing* (Government of Ireland, 1998). Resultant from the Commission's report, the government established the Nursing Policy Division within the Department of Health and Children, which had a key role in implementing the recommendations of the Commission on Nursing, specifically in driving forward the changes in nurse education and training.

On the Commission's recommendation, pre-registration education programmes (with the exception of midwifery and paediatrics) are now offered solely at degree level within the higher education institutions since 2002. There has also been a significant number of post-registration education programmes developed by the third level education institutions for nurses and midwives pursuing additional clinical qualifications in a variety of speciality areas.

Clinical career pathways for nurses and midwives have also evolved extensively throughout all care settings, with specialist roles emerging. Two such roles -- clinical nurse specialist/clinical midwife specialist and the advanced nurse/midwife practitioner – have been established to develop and support individuals engaged in advanced clinical nursing and midwifery practice.

### Irish Legislation for Nursing/Midwifery Practice and Medication Management

Nursing and midwifery practice is directed by professional regulation and the scope of practice for medication management is determined through medicines legislation. Any expansion of practice will challenge the judgement and accountability of nurses and midwives since they are legally and ethically responsible for their actions in this regard (McKenry & Salerno, 1998).

**Nurses Act, 1985:** The nursing and midwifery professions are governed by the *Nurses Act, 1985.* The Act empowers An Bord Altranais to establish and administer a system of regulation/registration; to provide for the

education and training of nurses and student nurses; to inquire into the conduct of a registered nurse on the grounds of alleged professional misconduct or alleged unfitness to engage in practice by reason of physical or mental disability; and to give guidance to the profession. The Board sees its overall responsibility to be in the interest of the public.

The National Council for the Professional Development of Nursing and Midwifery (Establishment) Order, 1999 (Statutory Instrument No. 376 of 1999): The Minister for Health and Children established the National Council for the Professional Development of Nursing and Midwifery (the National Council) as a statutory body in 1999. Its functions are to promote the professional development of nurses and midwives, which encompasses the formulation of guidelines for the creation of clinical nurse specialist and advanced nurse practitioner posts.

### **Medicines Legislation**

In order for nurses and midwives to competently and safely engage in medication management, An Bord Altranais expects that they be knowledgeable of the relevant legislation regarding the activities of prescribing, dispensing, storing and supplying of medicinal products.

The principal items of legislation in relation to medicinal products are:

- The Medicinal Products (Prescription and Control of Supply) Regulations 2003 (Statutory Instrument (SI) No. 540 of 2003)
- The Misuse of Drugs Acts, 1977 and 1984
- The Irish Medicines Board Act, 1995

The Irish Medicines Board (Miscellaneous Provisions Bill) proposes to amend the Misuse of Drugs Acts 1977 and 1984 and the Irish Medicines Board Act.

Additional legislation that influences medication management practices is

- The Poisons Act 1961 and Poisons Regulations 1982 (SI No. 188 of 1982)
- The Health (Family Planning) Acts, 1979 to 1993
- The Nursing Homes (Care and Welfare) Regulations 1993 (SI No. 226)
- The Mental Health Act, 2001.

### **Nursing and Midwifery Reports**

The Report of the Commission on Nursing: The impetus for the present examination of nurse prescribing in Ireland first emerged from the Report of the Commission on Nursing - A Blueprint for the Future (Government of Ireland, 1998). The consultative process undertaken by the Commission demonstrated that many nurses and midwives had concerns regarding the administration of medicinal products. It found that there were numerous situations in which "nurses or midwives might need to administer non-prescribed drugs or medicated dressings in the interests of the patient, in the absence of medical support" (Government of Ireland, 1998, p. 58).

**Review of Scope of Practice for Nursing and Midwifery:** Recommendations from the Commission had emphasised the need for a framework that would enable nurses and midwives to develop their practice and empower them in their decision-making. Current practices of nurses and midwives both nationally and internationally were examined and key issues were identified. The findings of the Commission on Nursing in relation to prescribing were substantiated in this project undertaken by An Bord Altranais (An Bord Altranais, 2000b and 1999).

Additional reports that have impacted on nursing and midwifery developments are:

- Nurses' and Midwives' Understanding and Experiences of Empowerment in Ireland (DoHC, 2003a) produced by the Empowerment of Nurses and Midwives Steering Group established by the Minister of Health and Children
- A Research Strategy for Nursing and Midwifery in Ireland: Final Report (DoHC, 2003b), published by the Nursing Policy Division of the Department of Health and Children
- Following on from the work of the Commission on Nursing, the National Council, in its *Agenda for the Future Development of Nursing and Midwifery* (2003), examined the progress of nursing and midwifery to encourage discussion of the future growth of the profession in the context of current health care policy
- Nurse Prescribing Issues for Palliative Care Nurses Working in a Community Setting (2004) is a study

conducted by the Irish Association for Palliative Care and Nessa Gill

- An Evaluation of the Effectiveness of the Role of the Clinical Nurse/Midwife Specialist (2004), conducted by the National Council, is a progress report on the development and implementation of the clinical nurse/midwife specialist role in the health care system
- The National Council has recently undertaken a study to identify the extent and scope of nurse-led/midwife-led services in Ireland, *An Evaluation of the Extent and Nature of Nurse-Led/Midwife-Led Services in Ireland* (2005)
- Midwifery Practice and Medicinal Products Issues for Consideration written by the Midwifery Committee of An Bord Altranais, (2005b) presents a detailed exploration of the current practical and professional issues of midwives regarding medication management.

### **National Health Policy**

The current discussion of the future expansion of nursing and midwifery roles in medication management, specifically the authority to prescribe medications, must take into account the national health care strategy and relevant policy documents.

The present reform programme is directed by the national health care strategy – *Quality and Fairness: a Health System for You* (DoHC, 2001a). Six frameworks structure the planned reform of the Irish health service and each has been addressed in a dedicated report commissioned by the government.

The Report of the Commission on Financial Management and Control Systems in the Health Service (The Brennan Report) (Government of Ireland, 2003) made recommendations to introduce significant changes to the way in which the health care system is structured and managed. The establishment of the Health Service Executive to manage the health service as a unitary national service was a principal recommendation.

The Audit of Structures and Functions in the Health System (The Prospectus Report) (DoHC, 2003c) examined health system reform and identified the need for changes in legislation and supporting processes in order to implement the health strategy and concluded that modernisation and reduction of fragmentation of services were essential.

The government goal of strengthening primary care is detailed in the report *Primary Care: A New Direction* (DoHC, 2001b) with two of its main objectives being multidisciplinary teamwork and access of all to primary care services.

The reform of the acute hospital system is based on policy initiatives such as the *Report of the National Task Force on Medical Staffing* (The *Hanly Report*) (DoHC, 2003d), which addressed the implementation of the European Working Time Directive.

The Challenge for Nursing and Midwifery: a Discussion Paper (DOHC, 2003e), produced by the nursing subgroup of the Task Force, considered how the nursing and midwifery professions can contribute to the introduction of the European Working Time Directive and the review of the Medical Staffing Task Force.

The Nursing and Midwifery Policy and Development Unit of the Mid-Western Health Board, in response to the European Working Time Directive, published an *Explorative Study into the Expansion of Nursing and Midwifery Professional Roles in Response to European Working Time Directive* (MWHB, 2003).

### **Other Relevant Policy Documents**

- The National Health Promotion Strategy 2000 2005 (DoHC, 2000)
- Building Healthier Hearts: Report of the Cardiovascular Health Strategy Group (DoHC, 1999)
- What We Heard (2004a) and Speaking Your Mind (2004b) issued by the Expert Group on Mental Health Policy
- An Evaluation of Cancer Services in Ireland: A National Strategy (DoHC, 2003f)
- The Development of Radiation Oncology Services in Ireland (DoHC, 2003g)
- The Report of the National Advisory Committee on Palliative Care (DoHC, 2001c)
- The Review of the Maternity Services Review Group to the North Eastern Health Board, (the Kinder Report) (North Eastern Health Board, 2001).

### 6. Professional Guidelines

Four key professional guidelines have been developed by An Bord Altranais to facilitate decision-making by nurses and midwives in the context of regulation and professional practice. These documents also allow others to be informed of the core responsibilities of nurses and midwives.

The Code of Professional Conduct for each Nurse and Midwife (An Bord Altranais, 2000c): The Code is "a framework developed to assist nurses and midwives in making professional decisions, to carry out their responsibilities and to promote high standards of professional conduct." (An Bord Altranais, 2000c). The Code enables the nurse and midwife to practice in a competent manner, which is defined as the "the ability of the nurse or midwife to practice safely and effectively fulfilling his/her scope of practice. In determining his/her scope of practice the nurse or midwife must make a judgement as to whether he/she is competent to carry out a particular role or function. The nurse or midwife must take measures to develop and maintain the competence necessary for professional practice." (An Bord Altranais, 2000c).

The Scope of Nursing and Midwifery Practice Framework (An Bord Altranais, 2000d): This provides nurses and midwives with guiding principles for examining, defining and further developing professional practice. It presents the concept of scope of practice, along with the values that form the basis for professional practice and contribute to the philosophy of nursing and midwifery. Key determinants for the scope of practice are: competence, accountability and autonomy, continuing professional development, support for professional nursing and midwifery practice, delegation and emergency situations.

**Guidelines for Midwives (An Bord Altranais, 2001):** The *Guidelines* present the philosophy of midwifery, the definition of midwifery and associated scope of practice as viewed by the Board. They address key issues for midwifery such as home births, emergency situations and deviations from the norm, use of complementary therapies, record-keeping and responsibilities in relation to child protection and welfare. The use of medicinal products by midwives is presented with reference to the pertinent medicinal products and misuse of drugs legislation.

**Guidance to Nurses and Midwives on Medication Management (An Bord Altranais, 2003):** An Bord Altranais regulates the actions of nurses and midwives under the medicines legislation and provides guidelines for their practice involving medications. The Project Team has prepared a revised edition of *Guidance to Nurses and Midwives on the Administration of Medical Preparations* as part of this current Review.

### **SECTION 3**

# **Project Activities**

### 7. Medication Management Seminars

The Project Team for this Review organised a series of medication management seminars for nurses and midwives. In addition to improving awareness and knowledge, the seminars were designed to examine, through focus groups, the current practices of nurses and midwives in relation to medication management. The seminars were held at ten venues and were attended by over 2,000.

### **Focus Groups**

Presentations were followed by focus group discussions, in which over 1,200 nurses and midwives took part. The groups overwhelmingly identified the need to prescribe. There were no noticeable differences in the need for prescribing based upon the various practice areas. Four main themes emerged, which are summarised below. Opinions are not necessarily those of all focus group participants.

### Theme 1. Rationale for Introducing Nurse Prescribing

- Manpower issues: Participants said that prescribing should be being considered for the right reasons, i.e. to improve patient care, and not as a solution to medical manpower issues. They believed that similar initiatives were introduced in other countries as a short-term response to the shortage of doctors and were adamant that this should not be the impetus in Ireland.
- **Time delays:** It was believed that prescribing by nurses would alleviate time-wasting and delays in waiting for doctors to provide a prescription. The situation was particularly frustrating regarding the supply of over-the-counter medications. Participants stated that it made no sense not to be able to initiate an over-the-counter medication to a patient when they could buy it themselves without any prescription. Some said that they had previously carried out this activity but believed that they were now inhibited by the *Scope of Practice Framework*.
- **Current practice:** Participants said that, in many instances, they had to employ a variety of negotiation styles in order to achieve a prescription that met the needs of their patients. The wide range of p.r.n. (as needed) medications and the practice of using rubberstamped prescriptions, whereby the nurse would write the prescription and ask the doctor to sign it, were two such methods presented. Many admitted to supplying patients with over-the-counter medications and saw the need to prescribe as doing no more than legitimising their current practices.

### Theme 2. Benefits of Nurse Prescribing

- **Legal Clarification:** Some participants said that formalising the process of prescribing through legislation would clarify what they were authorised to do.
- Safer patient care: Quality patient care was considered one of the main outcomes of introducing nurse prescribing, with participants stating that it would make practices safer. These nurses espoused a holistic model of care and considered nurse prescribing to be in keeping with it.
- **Influence of nursing:** The positive contribution that nurses could make to prescribing was offered, with emphasis on the benefits of the close relationship between the nurse and patient. Experience and specialisation were seen as positive elements of prescribing.
- **Professional development:** Prescribing was seen as a move in the right direction for the professional development of nursing and midwifery in that it would have a positive impact on the profession, making it more recognised and respected. Others viewed prescribing as a constructive move, in keeping with international practices.
- More timely treatment for patients: Participants spoke of immediate benefits within everyday

practice settings, principally a reduction in delays for patients and making life easier overall. The time delays experienced in A&E departments was specifically mentioned.

### Theme 3 - Models of Prescribing

- **Preferred model:** Participants differed about which model would best suit their practice. The majority did not want full independent authority to prescribe. Independent prescribing was seen to be appropriate for only advanced nurse practitioners or specialists. Participants believed that limited prescribing, guided by one's scope of practice within a collaborative practice, would meet their needs. Others said that the use of protocols and even the authority to merely initiate over-the-counter medications would suffice. Some had no desire to implement any model within their practice.
- Supply and administration of over-the-counter medications The initiation of over-the-counter medications was, without exception, described as the most pressing prescribing need in all practice settings. Frustration at not being able to do so for their patients was prevalent amongst all groups. Authority given to nurses to supply or administer over-the-counter medications was a suggested improvement.
- **Practice areas:** Participants mentioned a number of suitable practice areas. Many were areas where the care was nurse-led, or was given by clinical nurse specialists. The community psychiatric nurse, and practice nurse were also mentioned as appropriate prescribing roles. There was concern that the focus for this expansion of practice should not be solely within the acute care sector.

### Theme 4. Essential Elements for Introducing Nurse Prescribing

- Education preparation: Most agreed that a comprehensive education programme must be provided for the nurse prescribers, be it for limited or full independent authority. Participants differed about the level of education required for prescribing. Most believed that it would require post-graduate education.
- **Recognition of experience:** A number of participants believed that a nurse's/midwife's previous experience should hold some weight when considering the criteria for nurse prescribing approval.
- Legislation and insurance: A number of issues were raised regarding legislation for prescriptive authority for nurses/midwives. Some said that actions such as titrating medications needed legal clarification. Many asked if they would require independent insurance cover if they were to prescribe.
- **Resources:** Those working within the acute hospital sector raised the question of resources for nurse/midwife prescribing. Some participants spoke about the cost of replacing nurses attending education programmes in preparation for prescribing. Release time required for nurses to take on this new role was seen as a problem. Some suggested financial remuneration for their role in prescribing.
- Support from the medical profession: Some participants were sceptical that there would ever be collaboration in patient medication management. Others held the opposite view. Some working in the medical/surgical area suggested the need for a change in cultural attitudes to nurses' advanced practice, not only by doctors but also by other staff and patients. Those working with general practitioners in the community cited examples that indicated resistance from doctors.

### 8. Revision of Guidance Document

Since 1990, An Bord Altranais has provided guidelines to nurses and midwives on the subject of medication administration, with regular revisions. The *Review of Scope of Practice for Nursing and Midwifery, Final Report* (An Bord Altranais, 2000b) concluded that nurses and midwives found the existing version to be both ambiguous and lacking in clarity. As part of the current Review, the Project Team has revised *Guidance to Nurses and Midwives on the Administration of Medical Preparations* (An Bord Altranais, 2000a).

### **Enquiries Database**

The Project Team has dealt with medication management queries from the profession and others who have contacted An Bord Altranais for advice and information. The Project Team recorded all queries on an Education Department Enquiries Database that identified the areas of the *Guidance* document that needed to be revised. The database also aided in the review of current practices, influencing the development of the topic guide for the focus groups at the medication management seminars.

### **Medication Management**

The revised Guidance to Nurses and Midwives on Medication Management introduces the concept of medication

management to the professions. This encompasses the act of medication administration, but also the assessment, planning, implementation and evaluation of nursing and midwifery care associated with medications. The continuing expansion of practice by nurses and midwives has meant that the nurse/midwife is responsible and accountable for his/her own scope of practice. The *Scope of Nursing and Midwifery Practice Framework* was a guiding structure for the new document.

### Collaboration

The revision emphasises the multidisciplinary collaborative nature of medication management, and encourages the nurse/midwife to seek consultation and collaboration with other health care professionals in meeting the needs of the individual health care user.

### Content

The revision summarises relevant Irish statutes and legislation and An Bord Altranais guidance documents. There is a glossary of key medication management terms that includes the definitions of certain activities of medication management such as dispensing and administration. Explanations for medication error and adverse drug reaction are provided to encourage a standardisation of terms amongst the professions. A listing of organisational resources is provided.

### **Further Revisions**

The introduction of new health structures and processes, along with the increased focus on multidisciplinary care and teamwork in association with proposed changes in medicinal products legislation and professional regulation, will direct further revisions.

### 9. Needs Assessment Survey

A self-administered 79-item survey was designed to assess whether or not Irish nurses and midwives need to prescribe for their patients. A definition of terms on types of prescribing models, nurse-led care, and collaboration was included. Seven research objectives were established to examine the many variables associated with the introduction of prescriptive authority. A weighted random sample of 3,000 nurses and midwives was selected from the active Register, maintained by An Bord Altranais<sup>1</sup>. There were 1,052 responses in total, a response rate of 35%, of which 986 were usable.

### **Profile of Respondents**

- 898 were female (94%) and 60 were male.
- The highest number was in the 40-49 age group.
- On post-registration qualifications, the certificate was the highest achieved by the majority.
- Most respondents worked in one of three settings: hospital, community or nursing home. The health boards were the main employers for the majority.
- The two largest groupings were working either in a care of the older person setting or on a medical/surgical ward. This was followed by psychiatry and public health. Most did not work in a nurse-led unit
- The majority were currently employed as staff nurses or staff midwives. When asked if these positions were in nursing or midwifery, 90% said nursing and 10% said midwifery. Over half were in their current position between one and five years and nearly three-quarters for less than ten years. Most respondents worked in an urban setting, 20% worked in a rural setting and 23% worked in both.

### **Survey Results: Direct Carers**

The 709 respondents who stated that they provided direct patient care said the following:

### Which model?

Respondents were asked which model of prescribing, definitions of which were provided, was most needed for their practice. The largest number (48%) favoured a collaborative approach, with 14% opting for the independent model and 31% for protocol models. Seven percent stated they did not wish to prescribe.

<sup>&</sup>lt;sup>1</sup>There were 81,716 nursing and midwifery qualifications on the active Register as of 16 March 2004. A nurse or midwife may have more than one qualification, hence the reason for weighting the sample from each division. The inactive file of the Register was not used for sampling as this file represents nurses and midwives who are no longer actively practising in Ireland and have informed the Board of this.

The results showed that the respondent's choice was influenced by number of factors such as:

- Highest post-registration academic qualification Those with a master's degree were more likely to select the independent model. Equally, respondents who had no additional post-registration qualifications were more likely to not need any of the models for their practice.
- Current position Clinical nurse specialists and public health nurses showed the strongest support for independent prescribing.
- Geographical area Those respondents working in the west of Ireland demonstrated stronger support for the independent model compared to other areas.

### **Practice Settings**

The practice setting of respondents was also examined in relation to the model preferred. Those expressing most support for the independent model of prescribing worked in midwifery and public health, and those working in a medical/surgical practice setting show strongest support for the protocol model.

### **Reasons for Model Choice**

Respondents were asked why they had selected the particular model. The majority agreed with four statements provided:

- 1. It would make better use of my expertise
- 2. I would be able to provide more holistic care for my patients
- 3. Personnel/human resources would be used more effectively
- 4. It would legitimise my current practice.

There was disagreement with a fifth statement:

5. There is a shortage of medical practitioners working within my practice.

Significant differences were noted between the choice of model and reasons for that choice. Those choosing the independent model were more likely to be those who showed strong agreement with first, second and fourth statements more so than those who selected the collaborative model or protocol model for prescribing.

### Resources

Most respondents agreed with five statements provided in relation to the model they has chosen:

- Collaboration between nurses/midwives and doctors within my practice area would be necessary
- Collaboration between nurses/midwives and pharmacists in my practice area would be necessary
- The support of the medical profession would be important for implementation of the model
- The support of the pharmacy profession would be important for implementation of the model
- The support of my nursing/midwifery management would be important for implementation of the model.

### Benefits

Respondents were asked to rate their level of agreement with 15 statements about the benefits of the prescribing models. There were differences found between the model chosen and the benefits associated with that model<sup>2</sup>. The strongest level of agreement was for:

- The professional development of nursing and midwifery would be enhanced
- More timely treatment could be provided to patients/clients
- It would enable the provision of more holistic care for patients/clients
- It would improve the quality of patient/client care
- My role would be more autonomous.

### Reasons for Not Selecting the Independent or Collaborative Model

Fifty respondents reported that they did not want either the independent or collaborative model for their practice. Further information was requested from this group to examine the reasons for this choice. Those who chose the protocol model and those who did not want to prescribe at all were asked to rate their agreement with a number of statements.

<sup>&</sup>lt;sup>2</sup>Specific detail on this finding is provided in Chapter 9 of the Final Report

The main reasons given by the protocol group for not choosing either the independent/collaborative models were

- Protocols would be adequate for my practice
- I am fearful of increased litigation
- It would result in an increased workload
- I am satisfied with my existing caring role
- I do not want to lose touch with "real nursing".

Those who said they did not need any of the models gave their main reasons as:

- I am satisfied with my existing caring role
- I do not want to lose touch with "real nursing"
- I would be fearful of interdisciplinary conflict
- I am fearful of increased litigation
- It would result in an increased workload.

### Medications

Respondents who had chosen the independent or collaborative models for their practice were asked to indicate which of the drugs they would need to prescribe. Respondents were provided with 14 health conditions and 98 medication categories that might be used to treat them. The top ten drugs chosen were, in the main, over-the-counter medications but certain practice areas also showed a need for additional prescription medications and some controlled drugs. The medication categories selected were: nonsteriodal antiinflammatory drugs, antiemetics, wound dressings, laxatives, antacids, antibiotics, stool softeners, gentiourinary antibiotics, vitamins and antiseptics.

### **Survey Results: Non-direct Care Providers**

26% of the total sample stated that they did not provide nursing/midwifery care directly to their patients. This group consisted in the main of those working in nurse/midwife administration, education and higher management positions. They were asked whether or not, in their opinion, nurses and midwives should be authorised to prescribe using the independent or collaborative models. The majority were in favour of both models of prescribing, with more in favour of the collaborative model.

### 10. Exploration of Need Survey

The Exploration of Need Survey was undertaken to establish whether or not there was a need among stakeholders for the introduction of prescriptive authority for nurses and midwives and the possible effects of its implementation. Through a questionnaire, views were sought on a number of prescribing issues:

- The need for the independent/autonomous and collaborative models of prescribing practices
- The perceived benefits (if any) of prescriptive authority for nurses/midwives
- The assurance of quality and safety to patients and clients.

The structure of the survey provided a description of the practices of independent and collaborative prescribing, and case scenarios depicting current practice situations for nurses and midwives in both community and hospital setting, concluding with eight open-ended questions. The survey was posted to 58 organisations. Twenty organisations responded, representing professional representative bodies, statutory bodies and governmental health agencies and patient organisations and voluntary agencies. Some stated that their responses were limited to their speciality area; others were more expansive in their submissions. The following summary of comments received does not necessarily reflect the opinions of all respondents.

### **Support for the Prescribing Models**

In general, the collaborative model was seen to be the most favoured way forward for the introduction of prescribing for nurses and midwives because it was the most relevant to practice areas. Those who supported this model said that it could be utilised by more nurses and midwives. Some said that the independent model was limited because of the small number of specialised and advanced practitioners currently available to support its development. Alternative and additional considerations were offered by respondents, which included the use of agreed standing orders, the introduction of a collaborative practice model (encompassing broader health care management practices not limited to prescribing) and the extension of prescribing to other professions.

### **Time Saving**

The majority of respondents stressed the importance of time and the positive impact on efficient health services if nurses and midwives were authorised to prescribe. Many believed that patients/clients would receive faster treatment and care. Time saving was seen to benefit not only patients but doctors, allowing them time for other clinical priorities.

### **Access and Choice**

Access to care was an important consideration for the introduction of nurse prescribing internationally and some organisations said that improved and easier access could be possible, with convenience and choice resulting.

### **Improved Medication Management**

Many organisations identified general improvements in medication management that would result.

### **Professional Development**

The authority of nurses and midwives to prescribe has the potential to positively affect their own role development, and many organisations expressed the belief that better use of the skills/knowledge and expertise of the nurse/midwife would also result in improved service delivery.

### **Concerns**

Some organisations saw potential difficulties for nurses and midwives in prescriptive authority. The nurse/patient relationship might be adversely affected, as nurses could be perceived to be taking on a new role. General staffing shortages might develop from nurses/midwives having to undergo the education and training needed to prescribe. There was a need for consensus on the expansion of practice by the health care professionals involved.

### **Introduction of Prescribing**

Organisations in each stakeholder category mentioned the benefits of nurse/midwife prescribing to primary care settings, especially those settings that were geographically remote and/or where there was limited availability of doctors. Some listed particular service areas, e.g., care of elderly hospitals, hospice, prison services, women's health and mental health. Accident and Emergency settings (including triage and minor injury) and palliative care were frequently suggested sites. Others suggested definite health conditions that could benefit from nurse prescribing (such as diabetes, pain management, challenging behaviour) and specific nursing roles appropriate for prescribing (e.g. advanced nurse practitioner, community mental health nurse and nurses specialising in heart failure).

### **Necessary Elements**

Many organisations commented in detail on the necessary elements required for the successful introduction of nurse/midwife prescribing.

- Legislation and regulation: Many said that the current legal framework involving medications was inadequate and that legislation was required to support the introduction of any model of prescribing practice by nurses and midwives. Some organisations saw the need for ensuring that there were regulations for controlled scheduled drugs prescribing and administration. Professional regulation for prescriptive authority of nurses and midwives was cited, as was the need for competency frameworks to guide introduction and future monitoring.
- **Professional liability:** Clarification of the professional liability and clinical indemnity/insurance coverage of those authorised to prescribe was mentioned, as well as concern about the potential difficulties amongst other professions if medication errors were to occur. Appropriate risk management strategies were also needed.
- Education: A number of organisations said that independent prescribing should be the remit of the advanced nurse practitioner and/or clinical nurse specialist, based on their advanced education at master's degree and higher diploma. There was general recognition that nurses and midwives were not currently prepared in their educational programmes for this expanded role. They would require further instruction followed by continuous education and professional development. Primary educational needs centred on a greater knowledge of pharmacology, assessment skills, history-taking, diagnosis and decision-making for treatment planning for future prescribing.
- **Policy and protocol development:** A recurring theme was the association between the introduction of nurse/midwife prescribing and protocol development. Protocols and medication management policies were seen as necessary for guidance, protection of the public and to support multidisciplinary teamwork. Reference was made to similar supports introduced internationally e.g. patient group directions, clinical practice guidelines and health management protocols.

- Inter-professional support: Obtaining the support and collaboration of other health care professionals (especially medical practitioners) would be critical to the success of nurse/midwife prescribing. Partnership agreements amongst stakeholders, and sharing of information and education amongst the clinical team and non-clinical staff, would need to be introduced. Developing systems and processes for effective collaborative working were seen as determining factors.
- **Resource allocation:** Financial considerations for education programmes for nurse/midwife prescribing and auditing of practices should be addressed in the early stages of development, including the issue of salary increases for those taking on this added professional responsibility. The creation of adequate mentoring and supervision arrangements might also contribute to challenges in human resource allocation.

### **Promoting Efficiency**

Responses focused on the efficient utilisation of resources and the quality of health care, and identified a wide range of potential benefits. Many organisations spoke of present problems in delivering care, such as the current scarcity of professional health care, resulting in patients competing for treatment. Associated benefits for service users and providers would be comparable to those previously acknowledged internationally from the research studies, other countries experiences and from the focus group discussions.

### **Patient/Client Acceptance**

Sixteen organisations generally believed that this expanded scope of practice would be acceptable to patients/clients. Many referred to the international experiences of nurse prescribing and patient/client support and satisfaction with it.

### 11. Pilot Site Study

The Steering Committee examined the various models of prescribing used internationally and the legislative framework that would be required to support this practice in a pilot study. It decided that the model of prescribing for the pilot would involve the supply of medications by the participating nurses and midwives using locally devised protocols. International experiences and literature validates the model of collaborative prescribing by means of supplying medications under protocol. In practice, the nurse/midwife is authorised to initiate treatment to a patient/client for the supply and administration of a designated medication for a defined clinical situation without an individually named prescription from the medical practitioner.

Nurses and midwives with various educational and clinical experiences from a diversity of health care settings were selected to participate in the study.

The study objectives were:

- To evaluate the effectiveness of nurses' and midwives' clinical decision-making using medication protocols
- To examine the perceptions of participating health care staff on this model of prescribing for patients in their practice setting
- To measure patients' satisfaction with the information they received on the medications they were supplied with as per the medication protocol.

Certain structures were developed to meet these objectives. In order to prepare nurses and midwives for their expanded role in the pilot sites, a medication protocol framework and competencies for collaborative prescribing, linked with an education programme, were developed in the early stages of the project. The involvement of medical practitioners and pharmacists was also seen as critical supports for the development of the protocols and during the implementation phase of the study.

### **Education Programme**

The Royal College of Surgeons in Ireland (RCSI) School of Nursing and Midwifery, under the direction of Professor Seamus Cowman, was selected to deliver the six-month education programme. Thirty-two nurses and midwives successfully completed the programme, which combined theoretical learning with clinical supervision by a designated medical practitioner at each site. The majority of nurses and midwives stated that the programme prepared them for an expanded role.

### Legal

Prior to the start of the implementation/evaluation phase, a number of participating sites requested additional clarification of the current legal framework supporting the use of medication protocols. This was provided in September 2004, allowing the pilots sites to begin the implementation and evaluation phase of the study.

### **Sites**

Collaborative prescribing by the nurses and midwives, utilising locally-developed medication protocols, commenced during November 2004 with nine sites and 17 nurses and midwives participating. The implementation and evaluation phase at these nine sites extended over a three-month period. The sites, and their scope of practice, were:

- National Maternity Hospital (homebirth/Domino scheme)
- St James's Hospital (sexual health)
- St Luke's Hospital (oncology)
- Rotunda Hospital (neonatal intensive care unit)
- Limerick Regional Hospital (coronary care unit)
- St Mary's Hospital (intellectual disability)
- St Finbarr's Hospital (care of the elderly)
- St Patrick's Hospital (care of the elderly)
- Inismaan Community Services (public health)

The pilot site study was evaluated using a number of audit tools and a post implementation questionnaire for participants. Overall, the feedback was very positive.

### **Clinical Decision-Making Audit**

The medical practitioners acting as clinical mentors and independent verifiers submitted 223 audit tools for patient care provided by the nurse/midwife participants over the three-month evaluation period. The results were overwhelmingly positive and show that the majority of nurse and midwife participants addressed the criteria for the supply of medication to patients using the medication protocols and were deemed competent by the clinic mentors and independent verifiers.

### **Patient Satisfaction**

88 patients completed a satisfaction with information on medicines evaluation tool. However, most were patients from one site only. The majority of patients treated were completely satisfied with the information provided by the nurse/midwife.

### **Post-implementation Questionnaire**

An open-ended questionnaire was used to evaluate the perceptions of nurses/midwives, mentors and pharmacists on the prescribing model used.

All nurse/midwife respondents and most mentors agreed that easier access to treatment was afforded with use of this prescribing practice model.

All the nurse/midwife respondents believed that the use of this model enabled them to provide holistic care. The assessment, continuous evaluation, and follow up afforded with this model of prescribing contributed to achieving this outcome. The mentors also agreed about this benefit. Some pharmacists thought that the model supported the ability of nurses/midwives to provide holistic care. Others were unsure or did not know.

The majority of nurses/midwives believed that collaborative prescribing using medication protocols contributed to more timely treatment. Medical practitioner availability was a factor in the perceptions of some mentors as to whether this model contributed to more timely treatment, with emphasis on the after 5pm (out of hours) situation. Pharmacists had mixed views; some were positive, others did not know.

For the most part, nurses and midwives, clinical mentors and pharmacists perceived that the expanded role contributed to nurses/midwives fulfilling the role for which they were prepared and that nurses'/midwives' professional skills were more fully utilised.

Collaboration amongst the participating health care team was a central focus within the pilot study. Most nurses and midwives were very positive about their experiences of collaboration with the clinical mentor. Comments such as receiving full support, excellent relationship of trust and respect and informative experience were indicative of this positive feedback. Some mentors and pharmacists said that the protocol development was the main collaborating exercise at their sites.

### **SECTION 4**

# Discussion and Recommendations

### 12. Discussion

This section summarises the themes that have emerged from the literature review and the outcomes of the project activities.

### **Models of Prescriptive Authority**

Internationally, various models of prescribing by nurses and midwives have been introduced and these have been broadly categorised into three types: independent, collaborative and protocols. The use of medication protocols is recognised as an expanded medication management practice (not necessarily prescribing) in other countries, albeit different terms are used to describe them.

There are differences in the responsibilities of the nurse/midwife and the educational preparation and regulations required for independent or collaborative prescribing authority due to legislation and professional regulation in individual countries. Legislation and health service policies may also dictate the use of medication protocols.

### Identifying the Need for Nurse/Midwife Prescribing

International experiences and prescribing practices illustrate the different paths that many countries have taken in granting authority to nurses and midwives to prescribe and this has facilitated the objective of meeting the health care needs of both individuals and society. This is evident from the experiences of a number of selected countries presented in Chapter 2 and the outcomes studies presented in Chapter 4 of the main report.

Medical personnel shortages as a primary impetus for the introduction of prescriptive authority for nurses and midwives were debated in all forums of the project activities. It is a topical matter in relation to implementing the European Working Time Directive and of the fact that there are now fewer general practitioners working in Ireland.

The emergence of nurse-led and midwifery-led services also supports the introduction of prescriptive authority, as does the increased specialisation of nurses and midwives, especially in the development of clinical career pathways for the clinical nurse/midwife specialist and the advanced nurse/midwife practitioner.

Focus group participants differed about which prescribing model was preferred for their practices and there was no clear account from the focus groups as to which which practice areas should be considered for its introduction. The collaborative model was most favoured by respondents to the needs assessment survey. As part of the survey, nurses and midwives identified medications that would be necessary to prescribe for their patients. These were typical for their own scope of practice and care setting. In the exploration of need survey, collaborative prescribing was more favoured.

The pilot study utilised medication protocols as a model of collaborative prescribing and for some participants this was suitable. Others identified limitations.

Many of the respondents of the needs assessment survey believed that the use of medication protocols could address the medication management needs of patients and clients.

The focus group participants said, without exception, that the initiation of over-the-counter medications was the most critical prescribing need in all practice settings, including both hospital and community settings.

### **Benefits Associated with Nurse/Midwife Prescribing**

Recognition of the potential benefits of nurse/midwife prescribing for both patient/client and service providers emerged from the project findings. They can be summarised as:

Appropriate and safe prescribing

- Patient satisfaction
- Convenience and greater accessibility for patients
- Nurses as information providers
- Improved medication compliance by patients
- Fewer pharmacological interventions by the prescribing nurse
- Better clinical decision-making by the nurse prescribers
- Cost-effectiveness.

The implications for expanded medication management practices, including prescriptive authority for nurses and midwives, are centred on three main areas: legislation and professional regulation, collaboration and education. The necessary support from health service organisations associated with these areas is critical for furthering this agenda.

### **Legislation and Professional Regulation**

The introduction of prescriptive authority for nurses and midwives in Ireland must be supported by legislation and professional regulation. A review and subsequent enactment of all relevant primary and secondary legislation is required. Specific consideration of the *Misuse of Drugs Acts* and *Regulations* is also required.

The Department of Health and Children, at the request of An Bord Altranais and the National Council, recently examined current medicines legislation as it related to present practices of medication management and stated that the responsibility for medications procedures and controls rests with individual hospitals and their managements. (This does not apply to controlled scheduled drugs regulated under the *Misuse of Drugs Acts*).

A constant theme raised by the nursing and midwifery professions in this Review was the necessity of legal authority and clarification for their medication management practices.

In addition to medicines legislation, international experiences of nurse and midwife prescribing demonstrate the importance of proper development of standards by the professional regulatory body. The establishment of competencies and standards for prescribing is paramount to ensuring the educational preparation, professional accountability and continued competency of those having prescriptive authority.

The supply and administration of medicinal products using medication protocols by nurses and midwives require a firm legislative basis and professional guidance for their use. Specific legislation for medication protocol use, particularly in community health care settings, is needed to enable safe and appropriate practices to continue and advance.

An Bord Altranais plans to provide guidance for the use of medication protocols through the revision of *Guidance to Nurses and Midwives on Medication Management*. The medication protocol framework that was developed, tested and evaluated as part of this Review will be revised. It is also planned to include guidance on the topic of the initiation of over-the-counter medication by the professions.

### Collaboration

The literature has shown that, in order for the expansion of prescriptive authority to nurses and midwives to be successful, the medical, pharmacy, and nursing/midwifery professions must collaborate.

In the needs assessment survey, there was overwhelming agreement from nurses and midwives that collaboration and support would be needed in implementing their chosen prescribing models. In the exploration of need survey, stakeholders said that the support and collaboration of other health care professionals were critical to the success of introducing prescriptive authority for nurses and midwives. The experiences of participants in the pilot study also demonstrated the importance of collaboration.

### **Education**

Nurses and midwives will need additional education to acquire the competence in knowledge and skills in order to prescribe safely and effectively. Nurses and midwives taking part in either the focus group discussions or the needs assessment survey had a range of views on this, as did organisations who answered the exploration of need survey. The literature shows a similar divergence.

There are broad considerations for the educational preparation for Irish nurses and midwives regarding prescriptive authority. The criteria for prescribing must be established in order to create supporting educational framework. This will require defining the scope of practice for which prescriptive authority will be granted. An Bord Altranais should develop the requirements and standards for education and training programmes, based

upon the necessary legislative changes.

The responsibilities of the health service provider have been examined regarding expanded medication management practices. It is recommended that provisions should be made by these organisations to enable the professions and other members of the health care team to effectively and safely initiate and implement policies and practices for medication protocol use and the supply and administration of over-the-counter medications.

### Conclusion

Nurses and midwives are taking on greater roles and responsibilities in medication management. This Review has shown that there are various levels of medication management practices that can be initiated to support and further develop nursing and midwifery services to achieve the communal goal of holistic quality health care.

Prescriptive authority, the utilisation of medication protocols and over-the-counter medication supply/administration by nurses and midwives can have a significant impact on addressing current and future challenges in meeting the health needs of the individual patient and client.

Designation of the autonomy, responsibility and competency associated with these practices is a necessary first step. It is envisaged that the Recommendations that follow, with their proposed accompanying actions, will provide a broad empowering structure and process for nurses and midwives in moving the agenda forward.

# Recommendations of the Steering Committee

### **Recommendation 1: Continuation of the Use of Medication Protocols**

The use of medication protocols (other than for controlled drugs under the *Misuse of Drugs Acts*) within hospitals is recognised by the Department of Health and Children as an established practice of medication management. The use of such protocols should continue to be developed and supported.

### **Action 1.1: Professional guidance**

An Bord Altranais will revise the current *Guidance to Nurses and Midwives on Medication Management* (An Bord Altranais, 2003) to incorporate the medication protocol framework that was developed tested and evaluated as part of the project<sup>3</sup>.

### Action 1.2: Health service provider responsibility

Provision should be made by health service providers for the development and implementation of medication protocols in hospitals<sup>4</sup>. As the responsibility for the procedures and controls that are applicable to medication protocols rests with the individual hospital, it is important that local policies are devised to support the development and implementation of any medication protocols for patient/client care.

Provisions should be made:

- to enable nurses, midwives and members of the multidisciplinary health care team to devise and implement medication protocols
- to enable the education and training of nurses and midwives involved in the use of such protocols
- to disseminate information to all members of the health care team regarding organisational policies underpinning the use of medication protocols
- to establish review and audit processes to evaluate the use of medication protocols as part of quality assurance and risk management programmes.

### **Recommendation 2: Expansion of the Use of Medication Protocols**

It is recommended that an explicit legislative basis be provided for the supply and administration of medicinal products using medication protocols by nurses and midwives in hospital and community settings.

### Recommendation 3: Supply and Administration of Over-the-Counter Medications

Nurses and midwives should be enabled to supply and administer over-the-counter medications to patients and clients in accordance with their competence and within their scope of practice and supported by medication protocols where appropriate.

<sup>&</sup>lt;sup>3</sup>See appendix 7 in the Final Report for the medication protocol framework used in the pilot study. It will be revised for the purpose of the guidance document.

<sup>&</sup>lt;sup>4</sup>Hospital is defined as clinic, nursing home or similar institution (Medicinal Products (Prescription and Control of Supply) Regulations 2003, Statutory Instrument 540 of 2003).

### Action 3.1: Professional guidance

An Bord Altranais will revise the current *Guidance to Nurses and Midwives on Medication Management* to incorporate guidance for the professions to supply and administer over-the-counter medications.

### Action 3.2: Health service provider responsibility

Provision should be made by the health service provider for the development and implementation of policies to support the supply and administration of over-the-counter medications by nurses and midwives in health care settings. The provisions as detailed in Action 1.2 should also be made available for this action involving over-the-counter medications.

### **Recommendation 4: Prescriptive Authority**

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.

### Action 4.1: Legislation

A review and subsequent enactment and/or amendment of all relevant primary and secondary legislation is required in order to introduce prescriptive authority for nurses and midwives. This is a matter for the Department of Health and Children.

### Action 4.2: Professional regulation and guidance

The criteria for nurse/midwife prescribing must be established. This will require defining the scope of practice for which prescriptive authority will be granted. It is recommended that the establishment of criteria for nurse/midwife prescribing should be the responsibility of An Bord Altranais.

### Action 4.3: Professional regulation and guidance

The standards and requirements in respect of the education and training leading to prescriptive authority for nurses and midwives must be established. It is recommended that the establishment of such standards and requirements should be the responsibility of An Bord Altranais.

### **Recommendation 5: Implementation of the Recommendations and Actions**

An Bord Altranais and the National Council for the Professional Development of Nursing and Midwifery should establish a Project Implementation Team to work in consultation with key stakeholders to facilitate the implementation of these recommendations and actions.

# References

- Allen, J. (1998), 'A survey of psychiatric nurses opinions of advanced practice roles in psychiatric nursing', *Journal of Psychiatric and Mental Health Nursing*, vol. 5, p. 451-462.
- American Academy of Nurse Practitioners, (1998), Scope of practice for nurse practitioners, Washington, DC: American Academy of Nurse Practitioners.
- An Bord Altranais, (2005a) *Requirements and standards for nurse registration education programmes,* Dublin: An Bord Altranais.
- An Bord Altranais Midwifery Committee, (2005b) *Midwifery* practice and medicinal products issues for consideration. Unpublished, An Bord Altranais.
- An Bord Altranais, (2003) *Guidance to nurses and midwives on medication management*, Dublin: An Bord Altranais.
- An Bord Altranais, (2001) *Guidelines for midwives, 3rd ed.* Dublin: An Bord Altranais.
- An Bord Altranais, (2000a) *Guidance to nurses and midwives on the administration of medical preparations,* Dublin: An Bord Altranais.
- An Bord Altranais, (2000b) Review of scope of practice for nursing and midwifery final report, Dublin: An Bord Altranais.
- An Bord Altranais, (2000c) *The code of professional conduct for each nurse and midwife*, Dublin: An Bord Altranais.
- An Bord Altranais, (2000d) Scope of nursing and midwifery practice framework, Dublin: An Bord Altranais.
- An Bord Altranais, (1999) Review of scope of practice for nursing and midwifery interim report, Dublin: An Bord Altranais.
- Australian Nursing and Midwifery Council, (2004) Nurse Practitioner Standards Project: report to the Australian Nursing and Midwifery Council, Dickson, ACT: ANMC.
- Australian Nursing Federation, (2000) Competency standards for the advanced nurse, Melbourne: Australian Nursing Federation Federal Office.
- Avorn, J. (1995) The prescription as final common pathway', International Journal of Technology Assessment in Health Care, vol. 11, no. 3, p. 384-390.
- Bailey, K. (1999) 'Basic principles of psychopharmacologic treatment for advanced practice psychiatric nurses with prescriptive authority', *Journal of Psychosocial Nursing*, vol. 37, no. 4, p. 31-38.
- Biester, D.J. & Collins, J.B. (1991) 'Prescriptive authority for nurse practitioners: a strategy for improving access to child health care', *Journal of Pediatric Nursing*, vol. 6, no. 6, p. 419-420.
- Brooks, N., Otway, C., Rashid, C., Kilty, L. & Maggs, C. (2001) 'Nurse prescribing: what do patients think?', *Nursing Standard*, vol. 15, no. 17, p. 33-38.
- Brown, S.A. & Grimes, D.E. (1995) 'A meta-analysis of nurse practitioners and nurse midwives in primary care', *Nursing Research*, vol. 44, no. 6, p. 332-339.
- Buchan, J. & Calman, L. (2004) *Implementing nurse prescribing: an updated review of current practice internationally,* Geneva: International Council of Nurses.
- Buchan, J. & Calman, L. (2000) Implementing nurse prescribing, A review of current practice internationally, Geneva: International Council of Nurses.
- Byrne, G., Richardson, M., Brundson, J. & Patel, A. (2000) 'Patient satisfaction with emergency nurse practitioners in A&E', Journal of Clinical Nursing, vol. 9, p. 83-93.

- Canadian Association of Midwives, (2005) *Across Canada* [Online]. Available: http://ca.geocities.com/canadianmidwives@rogers.com/canada.html (Accessed: 29 June 2005).
- Caulfield, H. (1999) 'A legal minefield', in Jones, M. (ed.) *Nurse prescribing: politics to practice*. Edinburgh: Baillière Tindall, p. 81-102.
- Chapple, A. (2001) 'Two years experience of a nurse led pilot scheme: patients perceptions', *Primary Health Care*, vol. 10, no. 10, p. 14-17.
- Cohn, S.D. (1984) 'Prescriptive authority for nurses', Law, Medicine, & Health Care, April, p72-75.
- College of Midwives of British Columbia, (1997) (revised 2004), Continuing competency requirements, [Online]. Available: http://cmbc.bc.ca/docs.html (Accessed: 29 June 2005).
- College of Nurses of Ontario, (2004) *Medical Directives Revised* 2000, Toronto: College of Nurses of Ontario.
- Cooper, M.A., Lindsay, G.M., Kinn, S. & Swann, I.J. (2002) 'Evaluating Emergency Nurse Practitioner services: a randomised controlled trial', *Journal of Advanced Nursing*, vol. 40, no. 6, p. 721-730.
- Cox, C. & Jones, M. (2000) 'An evaluation of the management of patients with sore throats by Practice Nurses and GPs', *British Journal of General Practice*, Nov, no. 50, p. 872-876.
- Cox, N.H., Walton, Y. & Bowman, J. (1995) 'Evaluation of nurse prescribing in a dermatology unit', *British Journal of Dermatology*, vol. 133, p.340-341.
- Department of Health (UK), (2005a) Consultation on options for the future of independent prescribing by extended formulary nurse prescribers, Series MLX 320, [Online]. Available: http://www.dh.gov.uk/Consultations/ClosedConsultations (Accessed: 13 June 2005).
- Department of Health (UK), (2005b) Supplementary prescribing by nurses, pharmacists, chiropodists/podiatrists, physiotherapists and radiographers within the NHS in England [Online]. Available:
  - http://www.dh.gov.uk/assetRoot/04/11/00/33/04110033.pdf (Accessed: 21 June 2005).
- Department of Health (UK), (2004) Management of Medicines: a Resource to Support Implementation of the Wider Aspects of Medicines Management for the Diabetes, Renal and Long Term Conditions National Standard Frameworks, [Online]. Available:
  - http://www.dh.gov.uk/assetRoot/04/08/87/55/04088755.pdf (Accessed: 20, June 2005).
- Department of Health (UK), (1999) Review of prescribing, supply and administration of medicines – final report (Crown 2 Report), London: HMSO.
- Department of Health (UK), (1998) Review of prescribing, supply and administration of medicines: A report on the supply and administration of medicines under group protocols, (Crown 2 Report) London: HMSO
- Department of Health (UK), (1989) Report of the Advisory Group on Nurse Prescribing (Crown 1 Report), London: HMSO.
- Department of Health and Children, (2003a) Nurses' and midwives' understanding and experiences of empowerment in Ireland, Dublin: the Stationery Office.
- Department of Health and Children, (2003b) A research strategy for nursing and midwifery in Ireland: final report, Dublin: the Stationery Office.

- Department of Health and Children, (2003c) Audit of structures and functions in the health system, (Prospectus Report), Dublin: the Stationery Office.
- Department of Health and Children, (2003d) Report of the National Task Force on Medical Staffing (Hanly Report), Dublin: the Stationery Office.
- Department of Health and Children, (2003e) *The challenge for nursing and midwifery: a discussion paper,* Dublin: the Stationery Office.
- Department of Health and Children, (2003f) An evaluation of cancer services in Ireland: a National Strategy 1996, Dublin: the Stationery Office.
- Department of Health and Children, (2003g) *The development of radiation oncology services in Ireland,* Dublin: the Stationery Office.
- Department of Health and Children, (2001a) *Quality and fairness, a health system for you*, Dublin: the Stationery Office.
- Department of Health and Children, (2001b) *Primary care, a new direction*, Dublin: the Stationery Office.
- Department of Health and Children, (2001c), Report of the National Advisory Committee on Palliative Care, Dublin: the Stationery Office.
- Department of Health and Children, (2000) The National Health Promotion Strategy 2000-2005, Dublin: the Stationery Office.
- Department of Health and Children, (1999) Building healthier hearts: the report of the Cardiovascular Health Strategy Group, Dublin: the Stationery Office.
- de Leon-Demare, K., Chalmers, K. & Askin, D. (1999) 'Advanced practice nursing in Canada: has the time really come?' *Nursing Standard*, vol. 14, no. 7, p. 49-54.
- Expert Group on Mental Health Policy, (report prepared by Irish Advocacy Network). (2004a) *What we heard,* Dublin: Expert Group on Mental Health Policy.
- Expert Group on Mental Health Policy, (reported prepared by Carr Communications). (2004b) *Speaking your mind*, Dublin: Expert Group on Mental Health Policy.
- Fennell, K.S., (1991) 'Prescriptive authority for nurse-midwives: a historical review', *Nursing Clinics of North America*, vol. 26, no. 2, p. 511-522.
- Ferguson, B., Luker, K., Smith, K., Austin, L. & Hogg, C. (1998), 'Preliminary findings from an economic analysis of nurse prescribing', *International Journal of Pharmacy Practice*, vol. 6, Sept, p. 127-132.
- Gibson, F., Khair, K. and Pike, S. (2002) 'Nurse prescribing: children's nurses' views', *Paediatric Nursing*, vol. 15, no. 1, p. 20-25.
- Government of Ireland, (2003) Commission on Financial Management and Control Systems in the Health Service (the "Brennan Report") Dublin: the Stationery Office
- Government of Ireland, (1998) Report of the Commission on Nursing, a blueprint for the future, Dublin: the Stationery Office.
- Hamric, A.B., Lindebak, S., Worley, D. & Jaubert, S. (1998) 'Outcomes associated with advanced nursing practice prescriptive authority', *Journal of American Academy of Nurse Practitioners*, vol. 10, no. 3, p. 113-119.
- Health Canada, (2001a) Clinical practice guidelines for nurses in primary care, [Online]. Available: http://www.hc-sc.gc.ca/fnihb-dgspni/fnihb/ons/nursing/resources/clinical\_guidelines/ (Accessed: 22 June 2005).
- Hemingway, S. Flowers, K. & Ramcharan, P. (2001) 'What do you think: an interim report', *Mental Health Nursing*, vol. 21, no. 1, p. 6-10.
- Horrocks, S., Anderson, E. & Salisbury, C. (2002), 'Systematic review of whether nurse practitioners working in primary care can provide equivalent care to doctors, *British Medical Journal*, vol. 324, p. 819-823.
- Hughes, F. & Lockyer, H. (2004) 'Evidence and engagement in the introduction of nurse prescribing in New Zealand', *Nurse Prescribing*, vol. 2, no. 3, p. 131-136.

- Irish Association for Palliative Care (report prepared by Nessa Gill) (2004) Nurse prescribing issues for palliative care nurses working in a community setting. Dublin: Irish Association for Palliative Care.
- Jackson, K. (2000) 'Dermatology nurse prescribing', *British Journal of Dermatology Nursing*, Winter, p7-9.
- Kinnersley, P., Anderson, E., Parry, K., Clement, J., Archard, L., Turton, Stainthorpe, A., Fraser, A., Butler, CC. & Rogers, C. (2000) 'Randomised controlled trial of nurse practitioner versus general practitioner care for patients requesting "same day" consultations in primary care', *British Medical Journal*, vol. 320, p. 1043-1048.
- Luker, K., Austin, L., Hogg, C., Willock, J., Wright, K., Ferguson, B., Jenkins-Clark, S. & Smith, K. (1997) *Evaluation of nurse prescribing: final report,* Liverpool and York: Universities of Liverpool and York.
- Mahoney, D.F. (1994) 'Appropriateness of geriatric prescribing decisions made by nurse practitioners and physicians', *Image: Journal of Nursing Scholarship*, vol. 26, Spring, no. 1, p. 41-46.
- Mayes, M. (1996) 'A study of prescribing patterns in the community', *Nursing Standard*, vol. 10, no. 29, p. 34-37.
- McCann, V. & Baker, H. (2002) 'Community mental health nurses and authority to prescribe medications: the way forward?' Journal of Psychiatric and Mental Health Nursing, vol. 9, p. 175-182.
- McCloskey, J.C. & Bulechek, G.M. 2000, *lowa Intervention Project nursing interventions* (NIC), 3rd ed, Philadelphia: W.B. Saunders Company.
- McDermott, K.C. (1995) 'Prescriptive authority for advanced practice nurses: current and future perspectives,' *Oncology Nursing Forum*, vol. 22, no. 8, suppl. p. 25-30.
- McKenry, L.M. & Salerno, E. (1998) *Pharmacology in nursing*, 20th ed., St. Louis: Mosby.
- Medicines and Healthcare Products Regulatory Agency, (2004)

  Prescribing, sale and supply of medicines: Notes on
  medicines legislation in midwifery practice, [Online].

  Available:
  http://medicines.mhra.gov.uk/inforesources/saleandsupply/midwives.htm (Accessed: 21 June 2005).
- Medicines and Healthcare Products Regulatory Agency, (2003)
  Results of Consultation MLX 293 *Nurse Prescribers'*Extended Formulary, [Online]. Available:
  http://medicines.mhra.gov.uk/inforesources/publications/mlx2
  93outcome.pdf (Accessed: 21 June 2005).
- Munroe, D., Pohl, J., Gardner, H. & Bell, R. (1982) 'Prescribing patterns of nurse practitioners', *American Journal of Nursing*, vol. 10, p. 1538-1542.
- Myers, C., Lenci, B., & Sheldon, M.G. (1997) 'A nurse practitioner as the first point of contact for urgent medical problems in a general practice setting', *Family Practice*, vol. 14, p. 492-497.
- Naegle, M. 1999, 'Medication management' in Bulechek, G.M. & McCloskey, J.C. (eds) *Nursing Interventions: Effective Nursing Treatments*, (eds), 3rd ed, Philadelphia, W.B. Saunders Company, p. 234-242.
- National Council for the Professional Development of Nursing and Midwifery, (2005) An evaluation of the extent and nature of nurse-led and midwife-led services in Ireland, Dublin:

  National Council for the Professional Development of Nursing and Midwifery.
- National Council for the Professional Development of Nursing and Midwifery, (2004) An evaluation of the effectiveness of the role of the Clinical Nurse/Midwife Specialist, Dublin: National Council for the Professional Development of Nursing and Midwifery.
- National Council for the Professional Development of Nursing and Midwifery, (2003) Agenda for the professional development of nursing and midwifery, Dublin: National Council for the Professional Development of Nursing and Midwifery.
- National Council of State Boards of Nursing and National Organisation of Nurse Practitioner Faculties, (1998) Curriculum guidelines & regulatory criteria for Family Nurse Practitioners seeking prescriptive authority to manage pharmacotherapeutics in primary care, summary report, Rockville, Maryland: US Department of Health and Human

- Services, Health Resources and Services Administration and Agency for Health Care Policy and Research.
- National Health and Medical Research Council, (1998) *Review of services offered by midwives,* Canberra: Commonwealth of Australia.
- National Health Service Modernisation Agency Changing Workforce Programme & Department of Health – Core Prescribing Group, (2005) *Medicines matters: a guide to current mechanisms for the prescribing, supply and administration of medicines,* London: NHS Modernisation Agency & Department of Health.
- National Organisation of Nurse Practitioner Faculties and American Association of Colleges of Nursing, (2002) Nurse practitioner primary care competencies in speciality Areas; adult, family, gerontological, pediatric, and women's health. Rockville, Maryland: Department of Health and Human Services Health, Resources and Services Administration, Bureau of Health Professions, Division of Nursing.
- National Prescribing Centre, (2004) Maintaining competency in prescribing: an outline framework to help allied health professional supplementary prescribers, 1st ed. Liverpool: National Prescribing Centre, NHS.
- National Prescribing Centre, (2001) Maintaining competency in prescribing: an outline framework to help Nurse Prescribers, 1st ed. Liverpool: National Prescribing Centre, NHS.
- Netten, A., & Knight, J. (1999) 'Annuitizing the human capital investment costs of health care professionals', *Health Economics*, vol. 8, no. 3, p. 245-255.
- New Zealand Ministry of Health, (2002) *Guidelines for the development and operation of standing orders,* Wellington: New Zealand Ministry of Health.
- New Zealand Ministry of Health, (1997) Report of the Working Group Advising on the Quality and Safety Issues Associated with Extending Limited Prescribing Rights to Registered Nurses: report to the Director-General of Health, Wellington: New Zealand Ministry of Health.
- Nolan, P., & Can, N. (2001) 'Mental health nurse prescribing: the US experience, *Mental Health Practice*, vol. 4, no. 8, p. 4-7.
- Nolan, P., & Carr, N., & Harold, L. (2001) 'Mental health nurse prescribing: Part 2', Mental Health Practice, vol. 4, no. 9, p. 20-23.
- Nolan, P, Haque, M. & Badger, F. (2001) 'Mental health nurses' perceptions of nurse prescribing', Journal of Advanced Nursing, vol. 36, no. 4, p. 527-534.
- Nurses Board of Victoria (2001) The Nurse Practitioner: Preimplementation report, vol.1. Melbourne: Nurses Board of Victoria.
- Nurse Practitioners' Association of Ontario. History, [Online]. Available: http://www.npao.org/aspx (Accessed: 29 June 2005).
- Nursing Council of New Zealand, (2001) Framework for postregistration nursing practice education, Wellington: Nursing Council of New Zealand.
- Nursing Council of New Zealand, (1999) Competencies for entry to the Register of Midwives, Wellington: Nursing Council of New Zealand.
- Office of Technology Assessment, (1986) Nurse Practitioners, Physicians Assistants and Certified Nurse-Midwives: a policy analysis, Washington DC: Congress of the US.
- Ogilvie, A. (1999) 'Practice nurse opinions' in Jones, M. (ed.) *Nurse*prescribing: politics to practice. Edinburgh: Baillière Tindall,
  n. 177-198
- Pearson, L. (2003) 'Fifteenth annual legislative update', the Nurse Practitioner; the American Journal of Primary Health Care, vol. 28, no. 1, p. 35-58.
- Pearson, L. (2001), 'Annual legislative update', the Nurse Practitioner: the American Journal of Primary Health Care, vol. 26, no. 1, p. 2-35.
- Phillips, S. J. (2005) 'A comprehensive look at the legislative issues affecting advanced nursing practice', the Nurse Practitioner: the American Journal of Primary Health Care, vol. 30, no. 1, p. 14-47.
- Poulton, B. (1994) 'Nurse prescribing: broadening the scope of nursing practice', *International Nursing Review*, vol. 43, no. 3, p. 81-84.

- Queensland Health and the Royal Flying Doctor Service (Queensland Section), (2001) *The Primary Clinical Care Manual,* Brisbane, Queensland: Queensland Health.
- Queensland Nursing Council, (1999) Authorisation for Registered Nurses to practise under section 67(2), 175(2), 235(2)(a) (Isolated Practice) of the Health (Drugs and Poisons) Regulation 1996, Brisbane, Queensland: Queensland Nursing Council.
- Ragnar, I., Tydén, T. & Olsson, S.E. (2003) 'A survey of maternity care in Sweden', *British Journal of Midwifery,* vol. 11, no. 4 p. 238-242.
- Royal College of Nursing of Australia, (2002) *Nurse Practitioner National Nursing Network current news* [Online]. Available: http://www.rcna,etregistry.net/pages/npnews/phhtml (Accessed: 28 February 2003).
- Rosenaur, J., Stanford, D., Morgan, W. & Curtin, B. (1984) 'Prescribing behaviours of Primary Care Nurse Practitioners', American Journal of Public Health, vol. 74, no. 1, p. 10-13.
- Sakr, M., Angus, J., Perrin, J., Nixon, C., Nicholl, J. & Wardrope, J. (1999) 'Care of minor injuries by emergency nurse practitioners or junior doctors: A Randomised Controlled Trial', Lancet, vol. 354, no. 16, p. 1321-1326.
- Shum, C., Humphreys, A., Wheeler, D., Cochrane, M.A., Skoda, S. & Clement, S. (2000) 'Nurse management of patients with minor illnesses in general practice: multicentre, randomised controlled trial', *British Medical Journal*, vol. 320, no. 7241,p. 1038-1043.
- Simborg, D.W., Starfield, B.H. & Horn, S.D. (1978) 'Physicians and non-physician health practitioners: the characteristics of their practices and their relationships', *American Journal of Public Health*, vol. 68, no. 1, p. 44-48.
- Snell, B.J. (1999), 'Issues related to the practice of prescribing', Journal of Obstetrics and Gynaecological Nursing, vol. 28, no. 5, p. 513-519.
- Socialstyrelsen (National Board of Health & Welfare), (1997), *Distriktsskoterskornas forskrivningrsatt,* Stockholm: Socialstyrelsen.
- Spitzer, W.O., Sackett, M.D., Sibley, J.C., Roberts, R.S., Gent, M., Kergin, D.J., Hackett, B.C., & Olynich, A. (1974) 'The Burlington randomised trial of the nurse practitioner', *New England Journal of Medicine*, vol. 290, 31 Jan, p. 251-256.
- Sutcliff, L. (1996) 'Myth, mystique and monopoly in the prescription of medicine', *Nurse Practitioner*, vol. 21, no. 3, p. 153-155.
- Towers, J. (1999) 'Nurse Prescribing Lessons from America' in Jones, M. (ed.) *Nurse prescribing: politics to practice. Edinburgh: Baillière Tindall,* p. 291-307.
- Tyler, C. & Hicks, C. (2001) 'The occupational profile and associated training needs of the nurse prescriber: an empirical study of family planning nurses', *Journal of Advanced Nursing*, vol. 35, no. 5, p. 644-653.
- University of Keele, Department of Medicines Management, (2005) [Online]. Available: http://www.keele.ac.uk/depts/mm/General/about.htm (Accessed 7 June 2005).
- Venning, , Durie, A., Roland, M., Roberts, C. & Leese, B. (2000) 'Randomised controlled trial comparing cost-effectiveness of general practitioners and nurse practitioners in primary care', British Medical Journal, vol. 320, April 15, p. 1048-1053.
- Wilhelmsson, S. Ek, A-C. & Åkerlind, I. (2001) 'Opinions about district nurses prescribing', Scandinavian Journal of Caring Science, vol. 1, p. 326-330.
- Wong, M. & Rawlins, S. (2000), 'Guide to safe prescribing', *Clinical Excellence for Nurse Practitioners*, vol. 4, no. 3, p. 133-137.