Educating nonmedical prescribers

Derek Stewart,¹ Katie MacLure¹ & Johnson George²

¹School of Pharmacy & Life Sciences, Robert Gordon University, Aberdeen AB10 1FR, UK and ²Centre for Medicine Use and Safety, Faculty of Pharmacy and Pharmaceutical Sciences, Monash University, Melbourne, Victoria, Australia

Correspondence

Professor Derek Stewart BSc MSc PhD,
School of Pharmacy & Life Sciences,
Robert Gordon University, Aberdeen
AB10 1FR, UK.

Tel.: +44 1224 262432

Fax: +44 1224 262555

E-mail: d.stewart@rgu.ac.uk

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The last decade has seen developments in nonmedical prescribing, with the introduction of prescribing rights for healthcare professionals. In this article, we focus on the education, training and practice of nonmedical prescribers in the UK. There are around 20 000 nurse independent prescribers, 2400 pharmacist supplementary/independent prescribers, several hundred allied health professional supplementary prescribers and almost 100 optometrist supplementary/independent prescribers. Many are active prescribers, managing chronic conditions or acute episodes of infections and minor ailments. Key aims of nonmedical prescribing are as follows: to improve patient care; to increase patient choice in accessing medicines; and to make better use of the skills of health professionals. Education and training are provided by higher education institutions accredited by UK professional bodies/regulators, namely, the Nursing and Midwifery Council, General Pharmaceutical Council, Health Professions Council and General Optical Council. The programme comprises two main components: a university component equivalent to 26 days full-time education and a period of learning in practice of 12 days minimum under the supervision of a designated medical practitioner. Course content focuses on the following factors: consultation, decision making, assessment and review; psychology of prescribing; prescribing in team context; applied therapeutics; evidence-based practice and clinical governance; legal, policy, professional and ethical aspects; and prescribing in the public health context. Nonmedical prescribers must practise within their competence, demonstrating continuing professional development to maintain the quality engendered during training. Despite the substantial progress, there are several issues of strategy, capacity, sustainability and a research evidence base which require attention to fully integrate nonmedical prescribing within healthcare.

Introduction and the international perspective

The last decade has seen developments in nonmedical prescribing policy and practice in the UK, with the introduction of prescribing rights for a range of healthcare professionals. However, developments in nonmedical prescribing are not restricted to the UK. Australia, Canada, Finland, Ireland, New Zealand, Spain, Sweden, The Netherlands and the USA have already made some progress in training nonmedical professionals to undertake prescribing responsibilities [1, 2]. There is wide variation between countries in the legal restrictions on who can prescribe medicines, what, how much and to whom they can prescribe, and whether they are allowed to do so on an independent basis or under the supervision of a doctor. Regardless of the background of the nonmedical professionals, legislation and consultation documents from all

countries recommend successful completion of additional training before undertaking a prescribing role.

In this article, we focus on the education, training and practice of nonmedical prescribers (supplementary and independent) in the UK. Community nurse practitioner prescribers, who prescribe from a limited formulary of medicines and appliances, are outside the scope of this review.

Framework and aims of nonmedical prescribing

The proposed frameworks for nonmedical prescribing in the UK were articulated in the 'Crown' Review of Prescribing Supply and Administration of Medicines, published in 1999 [3]. Section 63 of the Health and Social Care Act 2001 allowed the UK government to extend prescribing rights,

and these have been implemented into practice as supplementary and independent prescribing [4].

The aims of nonmedical prescribing are as follows [5]: to improve patient care without compromising patient safety; to make it easier and quicker for patients to get the medicines they need; to increase patient choice in accessing medicines; to make better use of the skills of health professionals; and to contribute to the introduction of more flexible team working across the National Health Service (NHS).

Supplementary vs. independent prescribing

Supplementary prescribing (SP) is defined as a 'voluntary partnership between an independent prescriber and a supplementary prescriber to implement an agreed patient-specific clinical management plan (CMP), with the patient's agreement' [6]. The independent prescriber is almost always a doctor but can also be a dentist. There are no restrictions on the clinical conditions that can be treated or drugs that can be prescribed. The CMP is the cornerstone of SP. Before SP can commence, it is obligatory for an agreed CMP to be in place related to a named patient and to that patient's specific conditions to be managed by the supplementary prescriber. In addition to patient details, the CMP must include reference to the class or description of drugs that may be prescribed, any limitations to prescribing and criteria for patient referral to the doctor. Examples of clinical management plans can be found at the National Electronic Library for Medicines' nonmedical prescribing community area [7].

Independent prescribing is defined as 'prescribing by a practitioner responsible and accountable for the assessment of patients with undiagnosed or diagnosed conditions and for decisions about clinical management required, including prescribing' [8].

The chronological implementation of nonmedical prescribing in the UK is described in Box 1.

There are around 20 000 nurse independent prescribers, 2400 pharmacist supplementary/independent prescribers and several hundred allied health professional supplementary prescribers (physiotherapists, chiropodists/podiatrists and radiographers) and almost 100 optometrist supplementary/independent prescribers in the UK. Many are active prescribers, managing chronic health conditions (e.g. cardiovascular, respiratory and endocrine) or in the management of acute episodes of infections and minor ailments [9–11]. The scope of both SP and IP is wide ranging, as highlighted in Table 1.

Given such scope, it is fundamental that nonmedical prescribers work within the limits of their professional competence. For example, optometrists will prescribe medications for primary eye care and ocular conditions, such as glaucoma.

BOX 1

Chronological implementation of nonmedical prescribing in the UK

1999	Publication of the government-led 'Crown' Review of Prescribing Supply and Administration of Medicines
2001	Section 63 of the Health and Social Care Act extended to enable the government to extend prescribing rights
2002	Introduction of nurse independent prescribing
2003	Introduction of nurse and pharmacist supplementary prescribing
2005	Introduction of supplementary prescribing by allied health professionals (radiographers, podiatrists, chiropodists and physiotherapists) and optometrists
2006	Introduction of pharmacist independent prescribing
2008	Introduction of optometrist independent prescribing

Training programmes

Training programmes for nonmedical prescribers are provided by higher education institutions and are defined and accredited by professional bodies/regulators in the UK, namely, the Nursing and Midwifery Council, the General Pharmaceutical Council, the Health Professions Council (physiotherapists, chiropodists/podiatrists and radiographers) and the General Optical Council.

The prescribing courses enable nursing, pharmacy and optometry students to gain the dual SP/IP qualification, while allied health professionals gain an SP qualification. The SP and IP courses are similar, with IP having a greater focus on diagnosis and patient assessment. Courses can be delivered at the degree or Masters levels. While many courses are multidisciplinary (commonly nurses and pharmacists study together), some are aimed at single professions. There appear to be advantages and disadvantages of both of these approaches. Interprofessional education can foster understanding and development of team and professional roles, allowing students to learn from each other. The single professional approach allows tailoring of the educational programme, e.g. nurses will have less undergraduate training than pharmacists in clinical pharmacology and evidence-based practice but are likely to have more experience in patient assessment [12–14].

Prior to enrolling in training programmes for nonmedical prescribing, students must have support from their sponsoring organization (usually the NHS) and have identified patient clinical needs warranting the implementation of nonmedical prescribing services. Nurses and allied professionals must be deemed capable of study at degree level and have at least 3 years of postregistration clinical nursing experience; pharmacists, already trained to degree or Masters level, must have at least 2 years of postregistration experience in a patient-facing role.

The key learning outcomes are given in Box 2 (note that the programme for optometrist prescribers differs in structure and learning outcomes).

Table 1

Scope of supplementary and independent prescribing

	Supplementary prescribing	Independent prescribing
Health professionals permitted to train and register as prescribers	Nurses, pharmacists, optometrists, physiotherapists, chiropodists or podiatrists and radiographers	Nurses, pharmacists and optometrists
Clinical conditions managed	Any	Any
Diagnosis of conditions	The clinical condition being managed by a supplementary prescriber must be diagnosed by a doctor (or dentist) before prescribing can commence	The independent prescriber can assess and manage patients with diagnosed or undiagnosed conditions
Need for CMP	A written or electronic patient-specific CMP must be in place before prescribing can commence	No need for a CMP when managing patients with diagnosed or undiagnosed conditions
Need for formal agreement	The CMP must be agreed with the doctor (or dentist) and patient before prescribing can commence	No need for any formal agreement
Drugs prescribed	Any. Can prescribe unlicensed and off-label drugs	Any other than controlled drugs (some nurse independent prescribers can prescribe specified controlled drugs for specified indications) Can prescribe unlicensed and off-label drugs

Abbreviation: CMP, clinical management plan.

BOX 2

Key learning outcomes of independent prescribing training [15–17]

Be aware of limitations and work within limits of professional competence
Develop effective relationships and communication with patients, carers, other prescribers and members of the healthcare team
Describe the pathophysiology of the condition being treated and recognize the signs and symptoms of illness, take an accurate history and carry out a relevant clinical assessment where necessary
Be able to use relevant diagnostic aids, including monitoring response to therapy and applying clinical assessment skills
Demonstrate a shared approach to decision making by assessing patients' needs for medicines
Prescribe safely, appropriately and cost effectively
Demonstrate an understanding of the public health issues related to medicines use
Work within clinical governance frameworks that include audit of prescribing practice and personal development

Course content includes the following areas [15–17]:

- 1 Consultation, decision making, assessment and review, with a focus on accurate assessment and history taking, compliance, adherence and concordance, confirmation of diagnosis, differential diagnosis and referral to others, principles and methods of patient monitoring, use of common diagnostic aids and pharmacovigilance.
- 2 Influences on and psychology of prescribing, with a focus on patient demand vs. patient need, local and national influences on prescribing and personal attitudes affecting prescribing.
- 3 Prescribing in a team context, with a focus on functions of other team members, effective communication, management of conflict and prescribing budgets.
- 4 Applied therapeutics, with a focus on pathophysiology, pharmacokinetics and pharmacodynamics, selection

and optimization of drug regimens and adverse drug reactions.

- 5 Evidence-based practice and clinical governance, with a focus on evidence-based practice, critical appraisal, clinical governance policies and procedures, risk management and clinical audit.
- 6 Legal, policy, professional and ethical aspects, with a focus on professional competence, accountability and responsibility, statutory prescribing frameworks, ethics and continuing professional development.
- 7 Prescribing in the public health context, with a focus on patient access to healthcare and medicines, public health policies and inappropriate use of medicines.

The programme comprises two main components, as follows:

- 1 A university component equivalent to 26 days of full-time education. This is typically delivered part-time, combining face-to-face teaching, distance learning and self-directed study, over a period of between 3 and 6 months. Assessment methods include written assessments and objective structured clinical examinations (OSCEs) designed to test achievement of the learning outcomes. The OSCEs focus on achievement of prescribing skills and the ability to justify, negotiate and communicate prescribing intentions and decisions.
- 2 A period of learning in practice (PLP) of a minimum of 12 days.

During the PLP, a mentoring designated medical practitioner (DMP) provides the student with supervision, support and opportunities to develop competence in practice, focusing on one or more therapeutic areas and concentrating on the group of patients for whom he/she will initially prescribe. Activities during the PLP are varied

and are guided by the learning needs of the student and the clinical needs of the patient group. Students typically focus on patient consultations, selection of drugs for individual patients, patient review, monitoring and follow-up, aspects of patient safety and clinical governance centred on systems of practice, documentation and managing risk. Students are required to submit a portfolio to the university providing evidence of activities undertaken, reflective practice and achievement of prescribing competencies. If necessary, the duration of the PLP can be extended beyond 12 days. Successful completion of the PLP also requires that the DMP signs off the student as competent and appropriate to be registered as a nonmedical prescriber.

Research conducted with pharmacist prescribers and DMPs highlighted the value of the PLP from both perspectives, emphasizing the need to plan and focus activities on prescribing competencies and the importance of pre-existing professional relationships and trust [18]. The PLP poses challenges for higher education providers in terms of student progress. There are additional logistical issues in identifying and recruiting sufficient numbers of DMPs with appropriate teaching experience who are willing to dedicate significant time to facilitate student learning and assessment. Unsurprisingly, DMPs require some assurance that nonmedical prescribing has potential to impact on their practice and patient care [19].

Prescribing competence and continuing professional development

The need for competence in prescribing has been repeatedly voiced for medical and nonmedical prescribers, all of whom must continually review their practice to ensure competence. This is essential given the dynamic nature of therapeutics, with new drugs marketed, licensed indications, doses and formulations updated, research published and evidence-based approaches revised. Frameworks of reflective practice and continuing professional development (CPD) are fundamental and are supported by professional bodies and other organizations. For example, the National Prescribing Centre (NPC) in the UK has developed and published several competency frameworks for non-medical prescribers to help guide practice [20]. These describe the following three areas of competency: the consultation (clinical and pharmaceutical knowledge, establishing options and communicating with patients); prescribing effectively (prescribing safely, prescribing effectively and improving prescribing practice); and prescribing in context (information in context, the NHS in context, and the team and individual context).

The NPC is leading discussions now taking place to develop core prescribing competencies for medical and nonmedical prescribers, which should go some way to benchmarking the performance of nonmedical prescribers

and alleviate concerns expressed by some around non-medical prescriber competence and competence frameworks [21].

A review of research literature around nonmedical prescribers' CPD published in the last 5 years identified few relevant papers, mostly reporting studies with small sample sizes and issues in terms of recruitment and response biases [18, 22–24]. Latter *et al.* had identified the CPD needs of nurse prescribers but also their high level of engagement with self-directed learning to support their specified prescribing competence [22]. A training needs analysis by Green *et al.* suggested that short courses are the preferred option for CPD but also recommended mentorship by experienced prescribers [23]. Nurse-prescriber-focused research identified particular issues around providing pharmacology course content [24], while pharmacist-focused research identified review of consultation skills as a key area [18]. Courtenay *et al.* identified a core function of strategic NHS prescribing leads in supporting nonmedical prescribers through direct and indirect involvement in CPD provision but reported a lack of designated time to fulfil that role [25].

Quality of nonmedical prescribing

Literature reviews and national evaluations of supplementary and independent prescribing have reported the structures and processes of nonmedical prescribing [26–28]. Quantitative and qualitative studies from the perspectives of nonmedical prescribers, doctors and patients who have experienced the services, other healthcare professionals and the general public have generated positive findings. However, many studies are limited by small sample sizes, sampling, recruitment, response and recall biases. Latter *et al.* recently reported an evaluation of nurse and pharmacist independent prescribing in England. Using mixed methods, including surveys (nonmedical prescribers, NHS prescribing leads and patients) plus focus groups/interviews (prescribing course providers, DMPs and healthcare professionals) and a stakeholder workshop, they analysed the appropriateness of prescribing and prescribing consultations. While concluding that positive contributions were being made in terms of prescribing processes and activities, they highlighted a lack of strategic direction and support [10]. Findings indicated that prescribing was both safe and appropriate, although consultation and assessment skills could be improved. Patient acceptability and satisfaction with independent prescribing was high. Evidence indicated that overall nonmedical prescriber education was considered fit for purpose.

Key issues for future direction

Despite the substantial developments and progress made, there are several key issues which require attention in

order to integrate SP and IP fully within healthcare. While many nurse and pharmacist prescribers are active, studies have highlighted those trained yet not prescribing. Reasons are varied and include issues related to funding, lack of professional recognition and poorly defined organizational structures and processes [10, 28–31]. Action is required to ensure that resources allocated to training have potential to impact on patient care. Although 3–5% of registered nurses and pharmacists are registered prescribers, implementation of nonmedical prescribing services will require workforces with capacity to sustain services. There is need for policy makers, professional bodies, regulators, educators and other key stakeholders to provide more strategic direction for nonmedical prescribing around these and other issues. For example, are SP and IP specialist or generalist roles, should all nonmedical healthcare professionals undertake prescribing training, and is there potential to accredit prescribing training within undergraduate programmes?

In terms of evidence-based care, the research base needs to extend, with more focus on clinical, economic and humanistic outcomes for all models of nonmedical prescribing. It is also worth noting that the Department of Health has recently published consultation papers on prescribing and supply of medicines by a wider range of allied health professionals and proposals to introduce prescribing responsibilities for paramedics, hence the need to develop and research models of practice more fully [32, 33].

Conclusion

Supplementary and independent prescribing are here to stay and, to achieve its stated aims, nonmedical practice must be underpinned by comprehensive and appropriate education, training and research to generate an evidence base to support future developments. There is a need for policy makers, professional bodies, regulators, educators and other key stakeholders to provide more strategic direction.

Competing Interests

There are no competing interests to declare.

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