ORIGINAL SCIENTIFIC PAPER

QUANTITATIVE RESEARCH

Nurses' reported use of standing orders in primary health care settings

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ABSTRACT

INTRODUCTION: The Medicines (Standing Order) Amendment Regulations 2011 allow medicines to be supplied or administered to a patient by a nurse in the absence of a medical practitioner and without a prescription. Regulations have been in place since 2002, but no substantive research has occurred in New Zealand concerning their use.

AIM: This paper reports a survey of registered nurses (RNs) who work in primary health care (PHC) settings and explores aspects of their practice relating to their use of standing orders.

METHODS: A self-reported survey using a non-probability sample of RNs working in PHC who use standing orders in their practice (n=231). Data were analysed descriptively.

RESULTS: The sample were experienced RNs (mean 24 years since registration) and 53% have a postgraduate qualification. Some nurses' understanding of a standing order included provision of a prescription to a patient. Standing orders were used frequently (42% reported use 1 to >5 times/day) for a wide variety of conditions. There is a significant relationship between undertaking the stated professional development requirements and confidence in the clinical decisions made (p=0.025). Over half (52%) would like to use standing orders more often.

DISCUSSION: Standing orders are used extensively in PHC settings. The conditions nurses are involved in treating are usually already differentiated or have a high degree of diagnostic certainty. Nurses can effectively provide medicines under standing orders when doctors support their use, issue evidence-based orders, and have confidence in nurses with advanced skills. Doctors need to meet their responsibilities under the Regulations.

KEYWORDS: General practice; New Zealand; nurses; primary health care

Introduction

There are almost 7000 registered nurses (RNs) who work in a variety of primary health care settings (PHC) in New Zealand.[1] In the course of their work, these nurses use standing orders, which are written instructions for the supply and/or administration of a medicine in particular circumstances. Their use potentially relieves workforce pressure on general practitioners (GPs).[2]

It is possible for medicines to be supplied by nurses in New Zealand because of the Medicines (Standing Order) Amendment Regulations 2011, which allow medicines to be supplied and/or administered to a patient by a nurse in the absence of a medical practitioner and without a prescription.[3] The Regulations list the legislative requirements for both issuer and user of the standing order, and the required contents of a standing order.

The purpose of the regulations when they were developed in 2002 was to facilitate access to medicines during an emergency in the hospital environment.[4] Over time, standing orders have come to be used in PHC settings for both emergency and non-emergency situations.[5]

There is little New Zealand research that concerns registered nurses' use of standing orders

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in any setting. A small survey of Directors of Nursing, nurses and midwives (n=53) was conducted by the New Zealand Nurses Organisation in 2003 to clarify difficulties related to counter-signing arising from the 2002 Standing Order Regulations.[6] Another study published in 2009 quantified the use of standing orders in a rural practice, with two nurses and 17 written orders over a six-month period. Five percent of nurse consultations resulted in the use of a standing order, although these included not only the supply and administration of a medicine, but also 'a prescription issued under standing orders'.[7] A more recent study about RNs use of standing orders in the assessment and treatment of skin infections is one of the few New Zealand studies that describes protocols confined to the supply and administration of medicines.[8]

This paper reports on a national survey of nurses who work in PHC settings throughout New Zealand, with the aim of describing aspects of their practice related to their understanding and use of standing orders.

WHAT GAP THIS FILLS

What we already know: There is little New Zealand research about registered nurses' use of standing orders in primary health care settings. Their use is thought to relieve workforce pressure on general practitioners.

What this study adds: Standing orders are used extensively in primary health care settings. The conditions nurses are involved in treating are usually already differentiated or have a high degree of diagnostic certainty. Standing orders are effective when doctors provide up-to-date, evidence-based orders, have confidence in nurses with advanced nursing skills, and meet their responsibilities as issuers of the orders specified in the Regulations.

Methods

The study design was a cross-sectional survey and used a non-probability sample of RNs working in any type of PHC setting in New Zealand. The survey questions were designed for the study and to answer the study aims. Closed-ended questions asked about nurses' understanding of standing orders, their use, confidence and knowledge about conditions and medicines used, and the support they receive. Supplementary comment fields allowed respondents to elaborate on their answers. Demographic items included geographical location, practice setting (rural, semirural or urban setting), age, ethnicity, education, and year of registration. Face validity was established via feedback from academic nursing colleagues and senior nurses who work in PHC settings.

An invitation to participate and a hyperlink to the online version of the survey instrument (hosted by the Survey Monkey platform) was emailed to nurses in October 2013, using established local and national email distribution lists, such as the Wellington region Primary Health Care Nurses Reference Group, and the College of Nurses Aotearoa. Nurses on these lists were asked to forward the invitation to nursing colleagues who work in PHC settings. A 'snowballing by email' approach, such as this, can be useful when members are difficult to contact individually but are in contact with each other.[9] Two-hundred and thirty-one nurses who use standing orders in the course of their work responded to the survey. A limitation of this method of recruitment is that it is not possible to calculate a response rate.

All data were analysed descriptively using SPSS version 20 (IBM SPSS Statistics for Windows, Armonk, NY, USA). Figures were created using Microsoft Excel. Responses from the open questions were organised manually into themes and are reported in this paper as quotes or summaries. The ethical aspects of the study design were evaluated by peer review, judged to be low-risk and, therefore, formal ethical approval was waived. Notification about the study was made to the Massey University Human Ethics Committee.

Results

Description of respondent group

The demographic characteristics of respondents are shown in Table 1. The majority of respondents were from Wellington, followed by Auckland and then Manawatu. A diverse range of PHC settings in urban or rural/semi-rural areas was represented; 40% of respondents were from rural or semi-rural areas and 60% from urban areas. The age and ethnicity of the respondents are similar in distribution to descriptions of the

Table 1. Demographic characteristics of survey respondents (N=231)

Geographical location	n	Area of practice	n	Qualification leading to registration	n	%	Nursing Council of NZ data* %
Wellington	55	Primary care	66	Hospital certificate	75	32.5	23.9
Auckland	31	Accident and medical	24	Diploma of Nursing	59	25.5	17.7
Manawatu	22	Public health	19	Bachelor of Nursing	80	34.6	33.1
Canterbury	20	Corrections service	29	Overseas qualification	17	7.4	25.0
Hawkes Bay	16	Aged residential care	19	**Total**	**231**	**100**	**99.7**
Otago	15	Primary health organisation	8	**Age (years)**	**n**	**Ethnicity**	**n**
West Coast	13	Māori/iwi service provider	8	<25	9	NZ European/Pākehā	187
Bay of Plenty	11	Family planning/sexual health	14	25–29	9	Other European	18
Waikato	10	Rural nursing	12	30–34	12	Other	14
Tairawhiti	9	Youth health	11	35–39	15	NZ Māori	10
Whanganui	9	School health	6	40–44	22	Pacific	2
Northland	7	Other†	7	45–49	41		
Nelson–Marlborough	7	Child health	2	50–54	52		
Southland	3	Palliative care	4	55–59	40		
Taranaki	2	Homecare	2	60–64	22		
				>65	8		
Total	**230**		**231**		**230**		**231**

* Data from 2012–2013[1]

† 'Other' category includes district nursing, mental health (community), occupational health, and Pacific service provider

ageing New Zealand nursing workforce.[1,10] The older demographic of nurses working in PHC corresponds with the qualification that led to registration (Table 1); that is, proportionally more nurses with a hospital certificate or diploma of nursing responded to the survey than that reported in national workforce statistics.[1] The mean number of years since registration of 24 (standard deviation [SD] 12) years is another indicator of an older, experienced group. Table 2 shows that 53% of the respondents have a postgraduate qualification, and also reports the number who have completed or are enrolled in specific postgraduate master's level papers that underpin advanced practice nursing.

Understanding of a standing order

Respondents were asked to select which of four descriptions best matched their understanding of a standing order. More than one description could be selected. The only description provided that

Table 2. Postgraduate study enrolled for or completed

Postgraduate qualification	Completed	Currently enrolled	Postgraduate papers completed or enrolled	
n=231	**n (%)**	**n (%)**		**n (%)**
Postgraduate certificate	47 (20)	10 (4)	Pathophysiology	64 (28)
Postgraduate diploma	38 (17)	10 (4)	Pharmacology	59 (26)
Master's degree	37 (16)	18 (8)	Advanced assessment	75 (32)
PhD	0 (0)	2 (1)	Prescribing practicum	24 (10)
Total	**122 (53)**	**40 (17)**		

Table 3. Respondents understanding of a standing order (N=231)

Standing order description*	Rural or semi-rural practice location	Urban practice location	Total n (%)*
Generate a prescription that an authorised prescriber signs and a patient takes to a pharmacy to be dispensed	13	18	31 (13)
Write the patient's name on a prescription an authorised prescriber has already signed that the patient takes to a pharmacy to be dispensed	1	14	15 (7)
Generate a prescription, which is sent to a pharmacy for dispensing and is afterwards signed by the authorised prescriber	11	17	28 (12)
Administer a medicine and/or provide a supply of medicines to a patient†	76	117	193 (84)
Total	**101**	**166**	**267**

* More than one description could be selected

† This is the only correct definition of a standing order that is consistent with the Medicines Act 1981

is consistent with the Medicines Act 1981 is to 'administer a medicine and/or provide a supply of medicines to a patient' and this description was correctly selected 193 times (Table 3). Of the 193 respondents who selected this description, 165 were correct in selecting *only* this option.

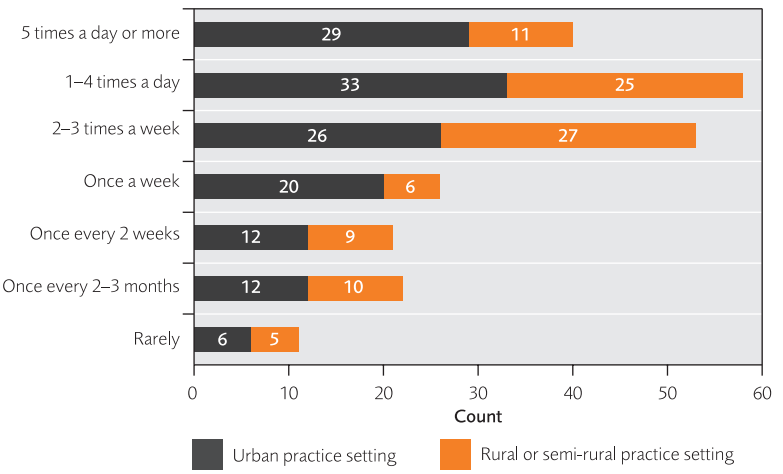
Frequency of use of standing orders

Standing orders were used frequently and 42% (n=98) reported use from one to more than five times a day (Figure 1). A wide variety of conditions and problems were treated and most had a high degree of diagnostic certainty (Figure 2 and Table 4). Nurses working in urban settings were more likely to provide contraception and emergency contraception, and to treat sexually transmitted infections and fever. Rural or semi-rural nurses treated more fever, sprains, strains, back or joint pains, urinary and Group A Streptococcus throat infections, eczema or dermatitis, and titrated warfarin. 'Other' conditions for which standing orders were used are listed in full in Table 4.

The age of patients and frequency of standing order use is shown in Figure 3. It is likely that there were fewer patients in the under-15-years category because nurses in the sample whose area of practice was in the Corrections service, aged residential care, palliative care, and to a lesser extent family planning/sexual health or youth health, do not work with younger age groups.

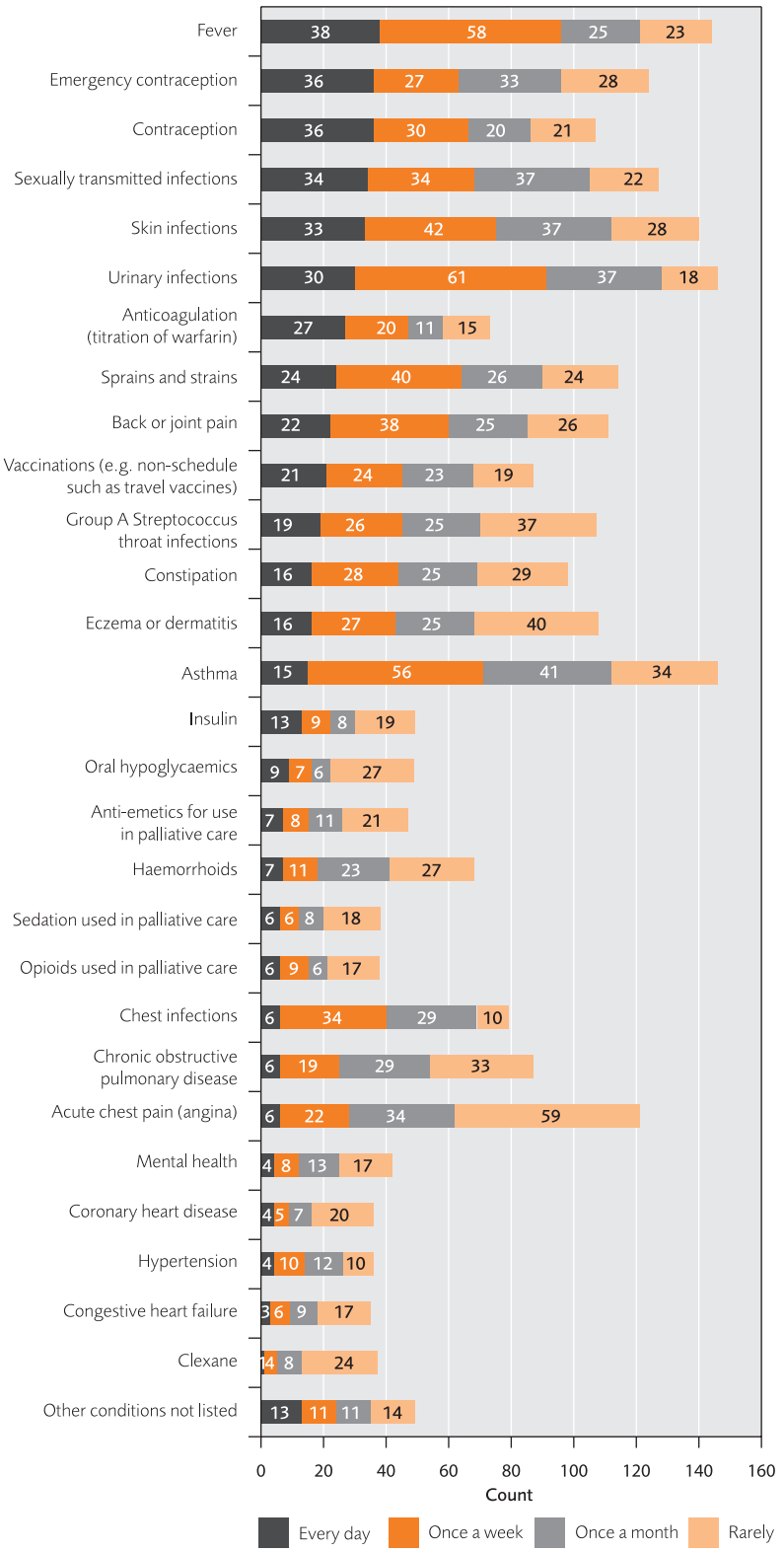
Over half (52%, n=121) of respondents indicated they would like to use standing orders more often; 46 (20%) were unsure and 59 (26%) did not want to use them more often. Short answer responses indicated that factors that supported the use of standing orders were easily accessible, clear, well-written, evidence-based and up-to-date guidelines; good collegial relationships with GPs; experienced nursing colleagues; access to education sessions; relevant postgraduate study in physical assessment and pharmacology; organisation-wide support; and robust audit processes.

Figure 1. Frequency of standing order use (N=231)



Lack of medical support is an important factor that prevents nurses from using standing orders, or using them more often. Reasons given were doctors' lack of confidence in the nurses' ability or not recognising advanced nursing skills; the funding and/or business model that requires doctors to see patients rather than nurses (per capita and co-payment); getting all GPs in an area to agree on standing order use and the concomitant

Figure 2. Frequency of standing order use for different conditions



education requirements; infrequent GP cover for proper sign-off (especially for rural areas); and the on-the-shelf availability of a medicine in order for it to be administered and/or supplied. Fifty-one nurses reported that medicines were not, or were not always, on site. Medicines are normally ordered using the Practitioner's Supply Order (PSO) and access will vary according to practice setting.

Clinical assessment and decision making

Figure 4 lists patient data collection activities that a nurse was likely to employ in the course of a clinical consultation, bearing in mind that the presenting problem determines which data is collected. Vital signs, some kind of physical examination and point-of-care tests were reported as always or usually used. Fifty-two percent (n=114) of nurses reported that laboratory reports of blood or urine chemistry were always or usually checked. Computer-based decision support tools appear to have been used, but are not universally available.

When a standing order was used, nurses almost always reported that they were responsible for taking a patient history, assessing the patient, administering and/or supplying the medicine, providing information, documenting in the patient record, and ensuring the patient was seen for follow-up. However, 29% (n=67) believed the doctor to be responsible for making the diagnosis and 23% (n=52) for deciding on a treatment plan. Short answer responses indicated that the diagnosis and treatment plan was often done collaboratively. Some nurses believed the diagnosis to be outside the scope of a registered nurse. Consistent with the specifications in the Standing Order Regulations (S 9[b]),[3] documentation in the patient record and ensuring the patient would be seen for follow-up was most often the responsibility of the nurse.

Knowledge and confidence

Almost all nurses who used standing orders felt they had the necessary knowledge about the conditions and medicines always or most of the time. Confidence in the decisions made, and access to good support when needed was similarly

high. Seventy-one percent (n=164) had always undertaken the specified professional development to use the order, and 23% (n=52) reported they sometimes met this requirement. A small number (5%, n=12) reported that they had never met the professional development requirement. Chi-square analysis shows a significant relationship between undertaking the stated professional development requirements and confidence in the decisions nurses made (p=0.025). Comments varied widely on this point, with some nurses identifying the need for more education support, to others referring to the importance of the postgraduate study they had completed. For example, one nurse wrote:

> My use of standing orders has become much safer since undertaking postgraduate study. I am able to provide much better advice to other RNs who are also using standing orders, but am occasionally concerned by how much information is missing from what some other RNs consider a complete assessment.

Organisational support

Ninety-six percent (n=221) reported there were policy documents in their place of work that supported the use of standing orders; five reported there were none (2%), and 2% (n=4) were unsure if there were policy documents available. Standing orders were reported as always countersigned or audited (76%; n=175), and 60% (n=139) report-

Table 4. Other conditions for which standing orders were used

Other conditions for which standing orders were used	
Infections or infestations	Cold sores, conjunctivitis, ear infections, dental abscess, head lice, scabies, monthly Bicillin for rheumatic fever, dog bites, thrush, peritonitis (only for peritoneal dialysis)
Analgesia for acute trauma	Entonox, lignocaine for wound suturing
Allergies	Anaphylaxis, hives, hayfever
Viral illnesses	Cough medicine, decongestants
Respiratory	Ventolin for use with spirometry, oxygen, Scopoderm patch to reduce secretions in end-of-life care
Gastrointestinal	Nausea, diarrhoea, gastric reflux
Not grouped	Migraine, vertigo, gout, aggression (used in the Corrections service), osteoporosis (Aclasta infusion)

Figure 3. Age of patients and frequency of standing order use

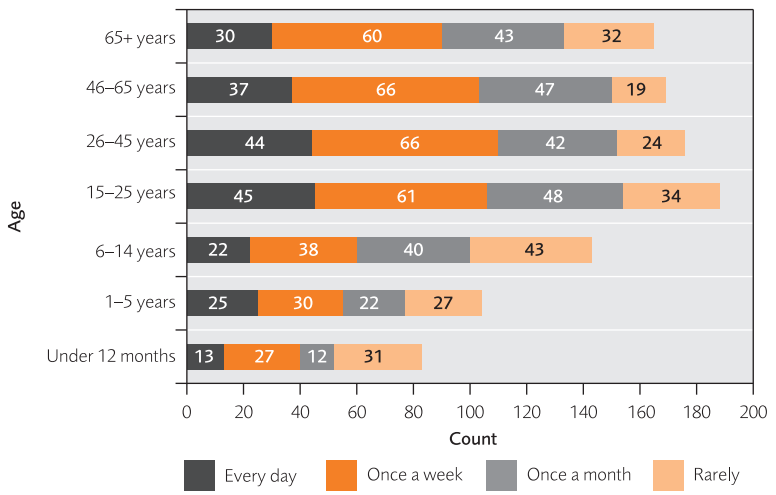
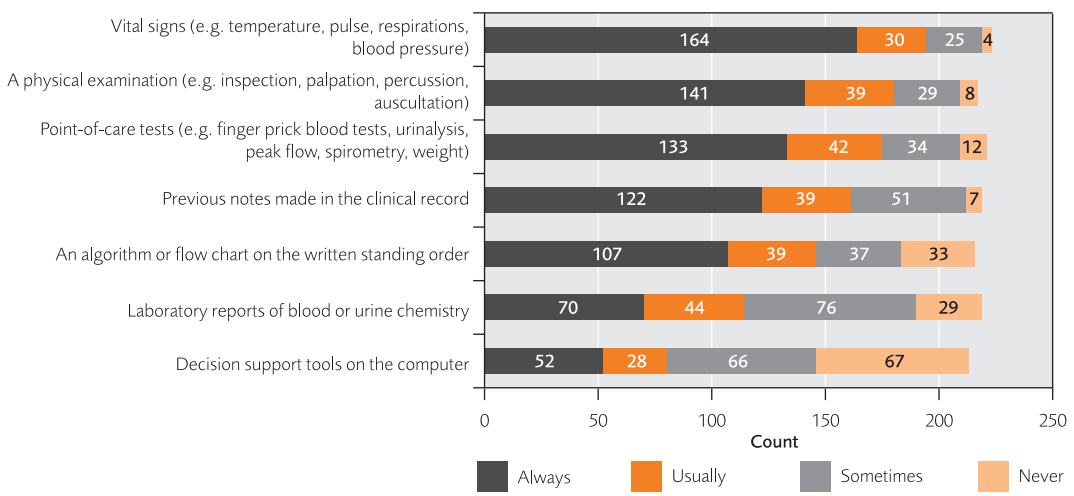


Figure 4. Patient assessment data typically collected



ed always or sometimes receiving feedback about the audits; 11% (n=25) reported that they never received feedback about audits, and 22% (n=51) reported hearing only if there was a problem. Fourteen percent (n=32) believed the nurse was responsible for auditing standing orders. Short answer responses indicated auditing was the responsibility of the senior nurse, clinical nurse specialist, or nurse educator, because sometimes the doctor had declined to do this work. The Regulations, however, require that each administration be countersigned or regularly audited by the issuer of a standing order.[3,11] Nurses reported that the requirement for sign-off could be particularly challenging where there was a high reliance on GP locums, such as in rural areas, or where there was limited access to a GP.

Discussion

Most nurses in this survey (84%) understood a standing order to mean the supply and administration of a medicine from supplies held on site. Some understood it to also mean the generation of a prescription for signing by an authorised prescriber before dispensing (13%), or after dispensing (12%), or to use a pre-signed prescription (7%). These findings are consistent with observations made by Scott-Jones who points out, 'how they [standing orders] are supposed to be used does not quite fit with how they are used in practice'.[12] Data in this survey about use and frequency of standing orders are therefore likely to be influenced by the confusion with the generation of a prescription. It is important to note that, if the generation of a prescription is involved, the nurse is following a locally developed protocol and not a standing order as defined in the Regulations.[3]

The intention of the Standing Order Regulations is to enable nurses to treat patients independently; that is, without the need for a doctor's immediate approval (indeed, that is the purpose of a standing order). Many nurses in the present study, however, described their use of standing orders in the context of a highly collaborative environment with their GP colleagues and referred to dual consultations as 'a joint affair'. Again, although following a protocol for a particular condition, these comments are likely to reflect the confusion between a standing order and the issue of a prescription. Nurses who work in rural areas or poorer communities can be without immediate access to a GP due to workforce shortages, and may, therefore, rely on standing orders to effectively treat the patients they see. There are difficulties with locum GPs as issuers of standing orders when they are unfamiliar with the nurses and are not available to meet the countersigning or audit requirements.

What is clear from this survey is that patients of all ages, with a range of conditions and problems, receive medicines every day from nurses who work in a wide variety of PHC settings, using a protocol-based mechanism that has been approved by a doctor. The *conditions* nurses are involved in assessing are usually already differentiated or have a high degree of diagnostic certainty. Standing orders are also used for *problems* or symptoms such as pain, fever, or constipation. These findings are consistent with the use of the UK-equivalent to standing orders, referred to as Patient Group Directions.[13,14] A recent review suggests that they are a safe method of supplying medicines to patients and can provide more timely access to treatment.[15] Patient outcomes arising from the use of standing orders by nurses or nurse practitioners have been reported to be similar to care provided by doctors and as safe, effective and acceptable to patients.[2]

In almost all cases, nurses in this survey reported taking responsibility for history taking and clinical assessment (including vital signs, a physical assessment and point-of-care tests), but they also reported being less certain about whose responsibility it was to diagnose or plan treatment. Nurses in this study were making diagnostic decisions on a regular, if not daily, basis, although some expressed uncertainty about whether or not diagnosis was within the RN scope of practice. Nurses, however, are expected to 'have the competency and training to be able to make an assessment that the standing order applies to the presenting patient' (p.4).[11] Furthermore, assessment of competency is to occur annually by the issuer of the order.

Over half the nurses in this study (52%) would like to use standing orders more often in their practice. The use of standing orders is depend-

ent on support from doctors as the issuers of the orders to meet their responsibilities under the Regulations. Nurses need GPs to agree on up-to-date, evidence-based orders, and for them to have confidence in nurses who have advanced nursing skills, particularly where these skills are supported by postgraduate study.

Limitations

Other than the studies mentioned,[7,8] this is the first national study to explore the use of standing orders by nurses in PHC settings. There are the usual limitations associated with survey designs, but in particular, the non-probability sample employed limits the generalisability of the findings. Future research in this area should explore the use of nurse-generated scripts, and the experience of doctors as issuers of standing orders.

Concluding comments

Standing orders are used extensively in PHC settings by nurses to supply and/or administer medicines to patients without a prescription. This study has described the range and frequency of the provision of medicines through the use of standing orders, and explored some of the misunderstandings that are evident in their use. Nurses can safely and effectively provide medicines independently under standing orders when doctors support their use, issue up-to-date, evidence-based orders, and have confidence in nurses with advanced nursing skills. The responsibilities of doctors as issuers of the orders are clearly specified in the Regulations and the standing orders guidelines.

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COMPETING INTERESTS
None declared.