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Division of Pharmacy and Optometry, The University of Manchester

**Non-Medical Prescribing in Community
Pharmacy, Primary Care & Mental Health
Services in Northwest England**

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Executive summary

Considerable evidence exists to indicate that non-medical prescribing is as effective as usual care by medical prescribers and can deliver comparable outcomes in a range of settings and with varying levels of autonomy. Health Education England North West (HEENW) provided funding to increase capacity of non-medical prescribers (NMPs) in primary care and mental health as part of the 2016/17 Workforce Transformation plan, and in community pharmacy in 2015/16. HEENW commissioned The University of Manchester to evaluate the impact of these Workforce Transformation funds. The aim of this project was to evaluate the impact of the Workforce Transformation funding for NMPs in primary care and mental health in 2016/17 in the North West region and that for Community Pharmacists in 2015/16.

This evaluation consisted of a number of brief questions on numbers of student enquiries, registrations, commencement, completion and pass/fail rates to the eight higher education institutions (HEIs) whose independent prescribing (IP) courses had been funded by HEENW Workforce Transformation.

Prescribers whose IP qualification had been funded by HEENW (including those still in training), colleagues who prescribers worked with and patients who had experienced a recent consultation with the prescriber were surveyed using questionnaires which were based on existing research instruments and allowed comparison. Members of our patient and public involvement group suggested avoiding the term 'non-medical prescriber,' because they found it 'odd' that a group of professionals should be termed by what they are not. We therefore use the term 'prescriber' throughout this report, and when referring to 'non-medical prescribers' in our questionnaires we used the term 'nurse/pharmacist prescriber' as that is what HEENW confirmed the majority were.

Questionnaire packs consisted of eight questionnaires (one for the prescriber, two for their colleagues and five for their patients) and were distributed by HEENW to prescribers at the address held by HEENW. Prescribers were asked to hand one questionnaire to their team manager and a second one to the colleague they worked with most closely and five to consecutive patients (to avoid selection bias). Each respondent was asked to complete and return this questionnaire directly to the research team in the pre-paid envelope provided. Two email reminders were sent to prescribers by HEENW followed by a

verbal reminder at a meeting with NMP leads. Following these reminders, six additional questionnaire packs were sent out at the request of prescribers.

Six of the eight HEI providers participated in the telephone surveys and provided background information on the Community Pharmacy funding initiative in 2015/16 and the North West Transformation funding offered in 2016/2107. These six respondents were HEI providers from Edge Hill University, The University of Salford, The University of Chester, Liverpool John Moores University, University of Central Lancashire (UCLan) and The University of Bolton. Those who did not respond were Manchester Metropolitan University (MMU) and The University of Cumbria.

Twenty-four patients (1% response rate), 20 prescribers (5% response rate) and 26 colleagues (3% response rate) responded to the questionnaires. Most of the patient respondents had a long-term medical condition (n=17; 71%) and were regularly taking medicines (n=21; 88%). In relation to prescribers, there were more nurse respondents (n=14; 70%) than pharmacists (n=4; 20%) and only one was a podiatrist. Half of the qualified prescribers were currently prescribing (n=10). Slightly over half (n=15; 58%) of the colleague respondents were doctors and nurses who had worked with the prescribers for five years or less (n=19; 73%).

Overall, the patients, prescribers and colleagues who responded were very satisfied and supportive of non-medical prescribing, which was perceived to improve patient access to healthcare services, make better use of prescribers skills and knowledge, reduce doctors' workload and enhance workflow. Findings were also positive in terms of good practice and prescribers' ability to collaborate and integrate with the wider healthcare team. The most notable areas where prescribers and colleagues felt some improvement was required were physical assessment skills and diagnosing patients. Some of the prescribers also lacked confidence in prescribing controlled drugs and prescribing for patients with co-morbidities. The main factors which enabled prescribers to practise were training and experience, confidence, managing workload, organisational support and establishing relationships with patients and healthcare staff. The main barriers to prescribing were perceived to be prescribers' lack of competence in certain areas, time constraints, IT issues and low patient/healthcare professionals awareness of non-medical prescribing.

Whilst positive findings in this report support the HEENW initiative to increase the capacity of prescribers in primary care, these findings are limited by very low responses. Therefore, we would advise that findings from this evaluation are interpreted with caution. Nonetheless, findings are

consistent with evidence from the wider literature which also identified positive attitudes and outcomes for non-medical prescribing.

Background

Healthcare organisations face a progressive increase in patient demand.^{1,2} As a result, there is a need to moderate patient demands by efficiently utilising the knowledge and skills of the healthcare team.^{3,4} Considerable evidence exists to indicate that non-medical prescribing is as effective as usual care by medical prescribers and can deliver comparable outcomes in a range of settings and with varying levels of autonomy.^{3,5,6} Findings from a HEENW commissioned economic evaluation⁷ of the impact of non-medical prescribing highlighted the financial benefits of non-medical prescribers (NMPs) for the National Health Service (NHS). Findings from the HEENW commissioned economic evaluation also identified practice settings where there were relatively few NMPs in the NHS throughout England (see Table 1 below).

Table 1: Total number of NMP practitioners and distribution throughout the NHS service*

Setting	NMP practitioners	Distribution
Acute	9,674	21.7%
GP practice	7,184	16.1%
Community	25,394	56.9%
Mental health	1,347	3.0%
Social care	449	1.0%
Hospice care	380	0.9%
Voluntary sector	201	0.5%
Total	44,629	100%

**Obtained from Non-Medical prescribing (NMP): An Economic Evaluation, i5 Health for NHS Health Education England North West, September 2015, page 15.⁷*

At a regional level in the North West, the proportion of NMPs in General Practice (26%) and Mental Health (2%) compared to Secondary/Tertiary/Quaternary Care (32%) is low (page 29).⁷ Therefore, increasing the number of NMPs in community pharmacy, primary care & mental health could benefit

both patients and other healthcare providers within these settings. To address this, HEENW provided funding to increase the capacity of NMPs in primary care and mental health as part of the 2016/17 Workforce Transformation; this funding follows previous funding for community pharmacy in 2015/16.

Purpose

The **aim of this project** was to evaluate the impact of the Workforce Transformation funding for NMPs in primary care and mental health in 2016/17 in the North West region, including that for Community Pharmacists in 2015/16.

The **main objectives** were to:

1. Investigate the impact of the funding for NMPs across primary care and mental health services and community pharmacy in the context of the four funding aims:
 - a) Improved value for money
 - b) Improved patient experience
 - c) Increased effect on prevention
 - d) Improved staff experience of providing care
2. Provide an economic view of the investment against impact, take-up of the offer by the potential workforce population, any barriers which prevented access, retention of students, and the impact of service development
3. Provide a breadth of case studies of implementations and settings, including examples of good/effective practice and areas where the initiative has been less successful, to gain further insights into barriers and facilitators
4. Highlight areas for improvement and future investment opportunities, including programme improvement suggestions and what works well for adoption and spread

Methodology

Our project provided an evaluation of the outcomes from the initial funding from NHS HEENW of NMPs in community pharmacy, primary care and mental health in the North West. It also provided insights into contextual features relevant to understanding why differences in outcomes may occur according to the setting in which NMPs practised. The evaluation was split into four distinct parts:

1. Structured telephone survey of education providers to obtain basic information on student commencement, completion, fail/pass rates.
2. Census survey of registered/ funded students to elicit practice setting and utilisation of prescribing skills (i.e. prescriber questionnaire).
3. Case study survey of prescribers practice setting, eliciting team manager and colleague perspectives (i.e. colleague questionnaire).
4. Short survey handed out by practising prescribers to five consecutive patients to elicit patient experience and satisfaction (i.e. patient questionnaire).

Patient and public involvement

As one focus of this project was on patient experience and satisfaction, we presented the project plan to the patient and public advisory board (PPAB) in the Division of Pharmacy and Optometry (DPO) when developing study documentation, so that we could be confident the project would be grounded in the patient experience. The PPAB members specifically helped us with, and commented on, the participant information sheets and the draft patient questionnaire. These patients were living with one or more long-term conditions, who had experience of primary and secondary care services. By recruiting from this group we ensured that these PPI representatives had already received training and had some experience of working on projects in DPO. Patients who volunteered in the PPI group provided various comments and suggestions which were taken into account by the research team. The most notable suggestion was to avoid using the term “non-medical prescriber” because they found it ‘odd’ that a group of professionals should be termed by what they are not. We therefore use the term ‘prescriber’ throughout this report, and when referring to ‘non-medical prescribers’ in our questionnaires we used

the term 'nurse/pharmacist prescriber' as that is what HEENW confirmed the majority were. Indeed, only one respondent was a podiatrist prescriber.

Structured telephone survey of HEI providers

In collaboration with HEENW, we contacted all eight HEI providers who had been awarded these HEENW funds for their independent prescribing courses, in order to gather background information on the Community Pharmacy funding initiative in 2015/16 and the North West Transformation funding offered in 2016/2107. These eight HEI providers included: The University of Bolton, The University of Chester, The University of Cumbria, Edge Hill University, Liverpool John Moores University, Manchester Metropolitan University (MMU), The University of Salford and University of Central Lancashire (UCLan). We intended to conduct a short structured telephone survey with all of these HEI providers to elicit data on numbers of student enquiries, registrations, commencement, completion and pass/fail rates.

Prescriber questionnaire & colleague questionnaire

The prescriber questionnaire was distributed to all those who registered on a funded course, whether they completed or not. The main reason for including those still in training was because uptake for the HEENW funding was considerably slower than expected. Hence, many prescribers were still on the funded training at the time of this evaluation. As some of the barriers and facilitators to effective working and integration into the care team in primary care are due to practice setting, culture, colleagues and their roles, we also gathered views and satisfaction from two colleagues that prescribers worked with.

Questionnaire packs were sent to each prescriber at the address held by HEENW. Each pack consisted of eight questionnaires (one for the prescriber, two for their colleagues and five for their patients). For reasons of confidentiality and ethics, the questionnaire packs were distributed by HEENW. Completed questionnaires were then returned directly to the research team using the FREEPOST envelope provided. Prior to distribution of the questionnaire packs, HEENW was to send an email to all prescribers, to inform prescribers that questionnaire packs would be sent out. Prescribers were asked to hand one questionnaire to their team manager and a second one to the colleague they worked with most closely; if they were unable to identify a second colleague, they were asked to return the second colleague questionnaire blank to the research team, noting this as a contextual finding. All contact with prescribers was made by HEENW. Two email reminders were sent to prescribers by HEENW on 10th October and 18th December 2017 followed by a verbal reminder on 21st March 2018, at a meeting with

NMP leads. Following these reminders, six additional questionnaire packs were sent at the request of prescribers.

The prescriber questionnaire collected data on: use of prescribing skills, whether prescribers practised or not, whether they used their newly acquired prescribing skills (and which skills/ how they were used), their setting, their areas of clinical expertise and an estimate on how many patients they see in a day. The design of this survey was informed through our team's excellent understanding of both the education and practice context as well as the existing literature. Questions related to motivation for prescribing, training evaluation, prescribing status and experiences of non-medical prescribing were adapted from one validated instrument⁸ whilst another survey instrument⁹ was used for questions which assessed the impact of non-medical prescribing.

The colleague questionnaires asked similar questions to the prescriber survey, exploring setting, staff satisfaction, and facilitators and barrier to effective prescribing and integration, informed by existing literature,¹⁰⁻¹³ which included context-specific questions, for example with regard to mental health.¹⁴⁻¹⁸ By surveying not only prescribers but also their key colleagues and collecting relevant data, informed by existing research, we were hoping to provide some insight into why some prescribers were more successfully integrated into the healthcare team and had a greater impact on service development than others.

Patient questionnaire

In the same questionnaire pack (see above), brief patient questionnaires were included for prescribers to hand out to five consecutive patients (to avoid selection bias). These enquired about the patients' experience with the most recent consultation with the prescriber as well as in general with prescribing and how satisfied they were with the care they received, and how this compared to usual care. Again, as a number of studies have been undertaken exploring patients' perspectives, questions related to consultation satisfaction,¹⁹ experience of prescribing,²⁰ perceptions and experiences of the most recent consultation with the prescriber,²¹ were adapted from previously validated tools and used to inform survey design, together with input from our advisory group and patient representatives. By surveying patients, we hoped to gain responses from a big enough sample to be able to undertake some quantitative/statistical analysis of their views, depending on the setting, type of prescriber etc.

Data analysis and triangulation of findings

The above four elements of the evaluation produced different perspectives on the objectives under investigation (prescribers, education providers, other staff, and patients). However, due to limitations, we were unable to meet some of these objectives. The main limitation was the very low response rates from all groups which made it unfeasible to investigate improved value for money and provide an economic view of the investment against impact, take up of the offer by the potential workforce population, any barriers which prevented access, retention of students, and impact of service development.

Regardless of these limitations, we use the presentation of our findings below and the discussion to provide some insights into patient experience, staff experience, barriers and facilitators, areas for improvement and future investment opportunities, including programme improvement suggestions and what works well for adoption and spread. Once again, owing to the low response rates, we advise that findings from this evaluation are interpreted with caution.

Structured telephone survey of HEI providers

In collaboration with HEENW, we aimed to conduct telephone surveys with eight HEI providers to gather background information on the Community Pharmacy funding initiative in 2015/16 and the North West Transformation funding offered in 2016/2107. HEI providers from Edge Hill University, The University of Salford, The University of Chester, Liverpool John Moores University, UCLan and The University of Bolton participated in these telephone surveys (n=6). Details of HEI survey responses are provided in the tables below. Table 2 presents data related to Community Pharmacy funding initiative in 2015/16, and table 3 data from the North West Transformation funding offered in 2016/2107. The HEIs that did not respond were MMU and The University of Cumbria despite being invited to take part and being sent reminder emails including a direct email from HEENW. These telephone surveys were used to gather information considered to be in the public domain.

Table 2: Applications and completion of prescribing courses funded through the Community Pharmacy funding initiative in 2015/16

Community Pharmacy Prescribing Pilot 2015/16	HEI provider 1	HEI provider 2	HEI provider 3	HEI provider 4	HEI provider 5	HEI provider 6
1. How many applicants applied to your institution to study on the non-medical prescribing course as part of the Community Pharmacy funding initiative in 2015/16:	0	0	21	0	2	20
2. How many of the applicants as part of the funding offers were registered to start the course:	0	0	21	0	2	20
3. How many of the registered students have completed the non-medical prescribing course for each of the funding streams:	0	0	14	0	2	19
4. How many of the registered students passed the non-medical prescribing course for each of the funding streams:	0	0	11	0	2	19
5. How many of the registered students failed the non-medical prescribing course for each of the funding streams:	0	0	3 (resit in August)	0	0	0
6. How many of the registered students dropped out of the non-medical prescribing course for each of the funding streams:	0	0	0	0	0	1 student suspended
7. How many of the registered students are still studying on the non-medical prescribing course for each of the funding streams:	0	0	6 (1 to commence in September)	0	0	1 student suspended

Table 3: Applications and completion of prescribing courses funded through the North West Transformation funding offered in 2016/2107

Workforce Transformation Funding 2016/17	HEI provider	HEI provider	HEI provider	HEI provider	HEI provider	HEI provider
	1	2	3	4	5	6
1. How many applicants applied to your institution to study on the non-medical prescribing course as part of the North West Transformation funding offered in 2016/2107:	60	21	42	3	11	57
2. How many of the applicants as part of the funding offers were registered to start the course:	32	20	42	3	11	57
3. How many of the registered students have completed the non-medical prescribing course for each of the funding streams:	0	19	3	3	11	18
4. How many of the registered students passed the non-medical prescribing course for each of the funding streams:	0	8	3	3	11	18
5. How many of the registered students failed the non-medical prescribing course for each of the funding streams:	0	None	0	0	0	5 students currently re-sitting
6. How many of the registered students dropped out of the non-medical prescribing course for each of the funding streams:	0	1 interrupted study	1	0	0	0
7. How many of the registered students are still studying on the non-medical prescribing course for each of the funding streams:	32	11	21 (17 to commence in September)	0	0	39 either in progress or due to start

Prescriber questionnaire & colleague questionnaire

Demographics of prescribers

Twenty prescribers returned questionnaires. There were more nurse respondents (n=14; 70%) than pharmacists (n=4; 20%) and one of the respondents was a podiatrist. There was one respondent which we could not identify due to missing data. The majority of respondents were male (n=15; 75%) and 70% (n=14) did not have a previous prescribing qualification i.e., community practitioner nurse prescriber or supplementary prescriber. Almost two-thirds (n=12; 60%) were between 20-40 years of age. Half of the respondents (n=10) prescribed at general practices, 15% (n=3) in mental health settings and 10% (n=2) in other locations which were podiatry clinics and prisons. Most of the respondents worked closely with doctors and nurses (n=19; 95%), followed by other nurse/pharmacist prescribers (n=13; 65%), pharmacists (n=10; 50%) and other healthcare professionals (n=7; 35%). Demographic details and the universities where respondents studied their prescribing courses are summarised in tables 4 and 5.

Demographics of colleagues

A total of 26 colleague surveys were returned from 16 practices, with the majority of respondents male (n=18; 69%). Sixty-nine percent of respondents (n=18) were co-workers and 31% (n=8) were managers of prescribers. Slightly over half (58%) of the respondents were doctors and nurses. The most common prescribing setting that respondents worked in was general practice (n=16; 62%) and the number of years working with the prescriber was usually less than or equal to 5 years (n=19; 73%). Characteristics of respondents that worked with the prescribers are provided in table 6.

Table 4: Characteristics of prescribers

Characteristic	N	%*
Role		
<i>Nurse</i>	14	70
<i>Pharmacist</i>	4	20
<i>Podiatrist</i>	1	5
Gender		
<i>Male</i>	15	75
<i>Female</i>	4	20
Age		
<i>20-40</i>	12	60
<i>41-60</i>	6	30
<i>>60</i>	1	5
Year of registration as healthcare professional		
<i>1978-2005</i>	6	30
<i>2006-2014</i>	13	65
Preceding prescribing qualification		
<i>Yes</i>	3	15
<i>No</i>	14	70
Prescribing setting		
<i>General practice</i>	10	50
<i>Mental health setting</i>	3	15
<i>Hospital setting</i>	1	5
<i>Community pharmacy</i>	0	0
<i>Other</i>	2	10
Team(s) that the prescribers worked within		
<i>Doctors</i>	19	95
<i>Other nurse/pharmacist prescribers</i>	13	65
<i>Nurses</i>	19	95
<i>Pharmacists</i>	10	50
<i>Other healthcare professionals</i>	7	35
<i>Other</i>	2	10

*Percentages did not add up to 100% due to missing data

Table 5: Universities where respondents studied their prescribing courses

University	N	%*
Edge Hill University	2	10
Liverpool John Moores University	0	0
Manchester Metropolitan University	3	15
The University of Cumbria	4	20
The University of Bolton	3	15
The University of Chester	1	5
University of Central Lancashire	1	5
The University of Salford	5	25

*Percentages did not add up to 100% due to missing data

Factors influencing respondents to become prescribers

The extent to which certain factors influenced respondents' decisions to become prescribers was assessed using a 5 point scale: "not a lot" (1), "a little" (2), "somewhat" (3), "a lot" (4), "extremely important" (5).⁸ Table 7 provides a summary of these factors. Increasing the quality of pre-existing patient/service user care provision, making patient access to medicines quicker and more efficient, and making better use of skills were considered important factors influencing respondents' decisions to become prescribers (all respondents gave a rating of 4 and higher). To a lesser extent, increasing job satisfaction (n=18; 90%), patient choice (n=15; 75%) and professional status (n=13; 65%) were also deemed important. On the other hand, meeting organisational targets and increasing salaries were not considered to be important factors in respondents' decisions to become prescribers (n=15; 75% gave a rating of 3 and lower).

Table 6: Characteristics of colleagues

Characteristic	N	%*
Gender		
<i>Male</i>	18	72
<i>Female</i>	8	31
Age		
21-40	12	44
41-60	12	48
>60	2	8
Role		
<i>Doctor</i>	8	31
<i>Nurse</i>	7	27
<i>Pharmacist</i>	0	0
<i>Practice manager</i>	3	12
<i>Other Healthcare professional</i>	1	4
<i>Other</i>	7	27
Prescribing setting(s)**		
<i>General practice</i>	16	62
<i>Mental health setting</i>	1	4
<i>Hospital setting</i>	1	4
<i>Community pharmacy</i>	0	0
<i>Other (special podiatrist, clinical support worker, pharmacy technician, nurse manager, senior reception, prescription clerk)</i>	6	23
Role in relation to prescriber		
<i>Manager</i>	8	31
<i>Colleague</i>	18	69
Number of years working with prescriber*		
<i>≤1 year</i>	6	23
<i>2-5 years</i>	13	50
<i>≥5 years</i>	5	19

*Percentages were rounded to the nearest whole integer and may not equal 100% **Percentages did not add up to 100% due to missing data

Table 7: Factors influencing respondents to become prescribers¹

Factors:	Not a lot n (%)	A little n (%)	Somewhat n (%)	A lot n (%)	Extremely n (%)	Total responses n (%)
To increase the quality of pre-existing patient/service user care provision	0 (0)	0 (0)	0 (0)	4 (20)	16 (80)	20 (100)
To make patient access to medicines quicker and more efficient	0 (0)	0 (0)	0 (0)	6 (30)	14 (70)	20 (100)
To increase my job satisfaction	0 (0)	1 (5)	1 (5)	4 (20)	14 (70)	20 (100)
To make better use of the skills of the clinical team in which you practise	0 (0)	0 (0)	0 (0)	8 (40)	12 (60)	20 (100)
To increase patient choice	1 (5)	0 (0)	4 (20)	5 (25)	10 (50)	20 (100)
To increase your professional status	0 (0)	3 (15)	4 (20)	5 (25)	8 (40)	20 (100)
To set up a change in a patient/service user clinical specialty	4 (20)	1 (5)	6 (30)	7 (35)	2 (10)	20 (100)
To increase my salary	7 (35)	3 (15)	3 (15)	5 (25)	2 (10)	20 (100)
To meet other organisational targets	5 (25)	2 (10)	8 (40)	3 (15)	2 (10)	20 (100)

Prescribing status for prescribers

Seven of the 20 prescriber survey respondents were not currently prescribing, with only one of them having previous prescribing experience (see Table 8). Of those who never prescribed (n=6), four were still studying for their prescribing qualification whilst the others were awaiting results or registration (n=2). Those with no previous prescribing experience intended to be involved in general practice (n=4) and mental health sectors (n=2).

Half of the qualified prescribers were current prescribers (n=10). The most common clinical areas for current prescribers were respiratory diseases (n=7; 70%), antibiotics (n=6; 60%), diabetes (n=6; 60%) and hypertension (n=5; 50%). On the other hand, mental health and substance abuse were the least common clinical areas practised by respondents (n=1; 10%).

Table 8: Prescribing status for respondents who were not currently prescribing

	Previously prescribed (n=1)	Never prescribed (n=6)
Reason why not currently prescribing		
<i>Still studying for prescribing qualification</i>	0	4
<i>Awaiting results/registration</i>	1	2
Intended sector of practice		
<i>General practice</i>	0	4
<i>Mental health</i>	0	2
<i>Hospital</i>	1	0
<i>Community pharmacy</i>	0	0

The number of patients seen per day varied widely amongst respondents from less than five to more than 15 (see Table 9). Half of the respondents (n=5) prescribed approximately 6 -10 items per day whilst 40% (n=4) prescribed fewer than five items per day. Respondents generally spent around 15-30 minutes in a consultation with each patient (n=8; 80%). In relation to making the diagnosis, five (50%) of the respondents made the diagnosis half/more than half the time whilst the other five made the diagnosis less than half the time or worked from a diagnosis made by a doctor/other healthcare professional on most occasions.

Current prescribers' evaluations of non-medical prescribing course

The extent to which the prescribing course adequately prepared current prescribers for their roles was evaluated using a 5 point scale (Table 10). Scores were highest in relation to prescribing skills/knowledge, accountability/responsibility and legal/ethical aspects of prescribing (n=10; 100% respondents gave a rating of 4 and higher). However, scores were relatively low regarding the extent respondents felt that the prescribing course prepared them in physical assessment skills (n=10; 100% respondents gave a rating of 3 and lower) and diagnosing patients (n=8; 80% respondents gave a rating of 3 and lower).

Table 9: Prescribing status for respondents who were current prescribers

Currently prescribing respondents (n=10)	% (n)
<i>Clinical area(s) of practice as a prescriber</i>	
<i>Respiratory</i>	70% (n=7)
<i>Antibiotics</i>	60% (n=6)
<i>Diabetes</i>	60% (n=6)
<i>Hypertension</i>	50% (n=5)
<i>Cardiovascular</i>	40% (n=4)
<i>Minor Ailments</i>	40% (n=4)
<i>Travel medicine</i>	40% (n=4)
<i>Pain management</i>	30% (n=3)
<i>Anticoagulation</i>	20% (n=2)
<i>Medication optimisation for elderly</i>	20% (n=2)
<i>Renal</i>	20% (n=2)
<i>Substance Misuse</i>	10% (n=1)
<i>Other mental health</i>	10% (n=1)
<i>Patients seen in a day*</i>	
<i>≤5</i>	30% (n=3)
<i>6-10</i>	10% (n=1)
<i>11-15</i>	20% (n=2)
<i>>15</i>	30% (n=3)
<i>Items prescribed in a day</i>	
<i>≤5</i>	40% (n=4)
<i>6-10</i>	50% (n=5)
<i>>10</i>	10% (n=1)
<i>Minutes spent in a consultation with each patient</i>	
<i>5</i>	10% (n=1)
<i>15</i>	30% (n=3)
<i>20</i>	30% (n=3)
<i>30</i>	20% (n=2)
<i>60</i>	10% (n=1)
<i>Making the diagnosis</i>	
<i>More than half the time</i>	30% (n=3)
<i>Around half of the time</i>	20% (n=2)
<i>Less than half of the time</i>	20% (n=2)
<i>Work from a diagnosis made by a doctor/other healthcare professional on most occasions</i>	30% (n=3)

* Percentages did not add up to 100% due to missing data

Table 10: Current prescribers' evaluation of prescribing course¹

To what extent did your prescribing course adequately prepare you in the following areas:	Not a lot n (%)	A little n (%)	Somewhat n (%)	A lot n (%)	Extremely n (%)	Total responses n (%)
Clinical pharmacology, including the effects of co-morbidity	0 (0)	0 (0)	0 (0)	5 (50)	5 (50)	10 (100)
Legal, policy and ethical aspects	0 (0)	0 (0)	0 (0)	5 (50)	5 (50)	10 (100)
Professional accountability and responsibility	0 (0)	0 (0)	0 (0)	5 (50)	5 (50)	10 (100)
Prescribing as an autonomous practitioner	0 (0)	0 (0)	0 (0)	7 (70)	3 (30)	10 (100)
Evidence-based practice and clinical governance in relation to prescribing	0 (0)	0 (0)	0 (0)	7 (70)	3 (30)	10 (100)
Consultation, decision-making and therapy	0 (0)	0 (0)	2 (20)	5 (50)	3 (30)	10 (100)
Prescribing in a team context	0 (0)	1 (10)	1 (10)	5 (50)	3 (30)	10 (100)
Prescribing in the public health context	0 (0)	0 (0)	2 (20)	6 (60)	2 (20)	10 (100)
Influences on, and psychology of, prescribing	0 (0)	0 (0)	3 (30)	5 (50)	2 (20)	10(100)
Diagnosing patients	1 (10)	1 (10)	6 (60)	2 (20)	0 (0)	10 (100)
Physical assessment skills	2 (20)	1 (10)	7 (70)	0 (0)	0 (0)	10 (100)

Colleague evaluations of training received by prescribers

Colleague evaluations of training received by prescribers were overwhelmingly positive with at least 73% of respondents (n=19) giving a rating of 4 and higher for each item. Scores were highest for “evidence-based practice and clinical governance in relation to prescribing” and “professional accountability and responsibility” (n=24; 96%). Similar to current prescribers, scores were fairly low for “physical assessment skills” (n=20; 77%) and “influences on, and psychology of, prescribing” (n=19; 73%). However, colleagues were more positive than current prescribers towards the extent they felt that the prescribing course prepared prescribers for diagnosing patients (81% respondents gave a rating of 4 and higher). Details of colleagues' evaluation for the prescribing course are provided in table 11. Further statistical analysis for prescribers and colleagues perceptions of training was not possible due to the low number of responses and lack of variation in the responses.

Table 11: Colleagues' evaluation of training received by the prescriber¹

Did the training received by the prescriber prepare your colleague adequately for the areas listed below*:	Not a lot n (%)	A little n (%)	Somewhat n (%)	A lot n (%)	Extremely n (%)	Total responses n (%)
Evidence-based practice and clinical governance in relation to prescribing	1 (4)	0 (0)	0 (0)	11 (44)	13 (52)	25 (96)
Professional accountability and responsibility	1 (4)	0 (0)	0 (0)	11 (44)	13 (52)	25 (96)
Prescribing in a team context	1 (4)	0 (0)	3 (12)	10 (39)	12 (46)	26(100)
Clinical pharmacology, including the effects of co-morbidity	1 (4)	0 (0)	4 (15)	9 (35)	12 (46)	26 (100)
Prescribing as an autonomous practitioner	1 (4)	0 (0)	3 (12)	10 (40)	11 (44)	25 (96)
Legal, policy and ethical aspects	1 (4)	0 (0)	3 (12)	11 (44)	11 (44)	25 (96)
Consultation, decision-making and therapy	1 (4)	0 (0)	4 (15)	11 (42)	10 (39)	26 (100)
Diagnosing patients	1 (4)	2 (8)	2 (8)	13 (50)	8 (31)	26 (100)
Prescribing in the public health context	1 (4)	0 (0)	2 (8)	14 (56)	8 (32)	25 (96)
Physical assessment skills	1 (4)	0 (0)	5 (19)	13 (50)	7 (27)	26 (100)
Influences on, and psychology of, prescribing	1 (4)	1 (4)	5 (19)	12 (46)	7 (27)	26 (100)

**Percentages were rounded to the nearest whole integer and may not equal 100%*

Current prescribers' perceptions of the impact of prescribing role

All current prescribers agreed or strongly agreed that their prescribing role increased job satisfaction and ensured better use of their skills and time (n=10; 100%). Most current prescribers agreed or strongly agreed that their role improved their relationship with patients and improved the quality of care provided for patients (n=9; 90%). In addition, 80% (n=8) agreed or strongly agreed that their role meant the use of doctors' time was more effective and could be used for more complex cases. To a lesser extent, respondents were in agreement (n=6; 60% agreed or strongly agreed) that their role had increased choice for patients and improved the cost-effectiveness of service delivery in their clinical area. However, 60% (n=6) disagreed that their role meant they could deal with all of the patient/service user's prescribing needs. Half of the respondents (n=5) were uncertain that their role increased the respect they received from doctors and some were uncertain that their role increased their professional status (n=4; 40%). Details of responses are provided in table 12.

Colleagues' perceptions of the impact of working with the prescriber

Similar to current prescribers, nearly all colleague respondents (n=25; 96%) agreed or strongly agreed that working alongside a prescriber improves the quality of care provided for patients/service users (see Table 13). Most colleagues also agreed or strongly agreed that working alongside a prescriber means the use of the doctors' time is more effective and can be used for more complex cases (n=25; 96%). Unlike current prescribers, nearly all colleague respondents agreed or strongly agreed that working alongside a prescriber increased the respect they have for prescribers (n=24/25). In addition, colleagues were more positive than current prescribers that prescribing increased choice for patients/service users (n=25; 96%) and that working alongside a prescriber meant they can deal with all of the patient/service user's prescribing needs more effectively (n=21; 81%).

Table 12: Current prescribers' perceptions of the impact of prescribing role¹

My role as a prescriber:	Strongly disagree n (%)	Disagree n (%)	Uncertain n (%)	Agree n (%)	Strongly agree n (%)	Total responses n (%)
Ensures better use of my skills	0 (0)	0 (0)	0 (0)	2 (20)	8 (80)	10 (100)
Improves the quality of care I am able to provide for patient/service users	0 (0)	1 (10)	0 (0)	2 (20)	7 (70)	10 (100)
Has increased my job satisfaction	0 (0)	0 (0)	0 (0)	4 (40)	6 (60)	10 (100)
Means my time is used more effectively	0 (0)	0 (0)	0 (0)	5 (50)	5 (50)	10 (100)
Results in quicker and more efficient patient access to medicines	0 (0)	0 (0)	0 (0)	5 (50)	5 (50)	10 (100)
Means that the use of the doctors' time is more effective and can be used for more complex case	0 (0)	1 (10%)	1 (10)	4 (40)	4 (40)	10 (100)
Has increased my professional status	0 (0)	0 (0)	4 (40)	2 (20)	4 (40)	10 (100)
Increases the capacity of my organisation to provide more appointments for patient/service users	0 (0)	2 (20)	3 (30)	1 (10)	4 (40)	10 (100)
Has helped improve the clinical effectiveness of patient care in my clinical area	0 (0)	0 (0)	0 (0)	7 (70)	3 (30)	10 (100)
Has increased choice for patients	0 (0)	2 (20)	2 (20)	3 (30)	3 (30)	10 (100)
Enables patient/service users to have a longer appointment time than they would with the doctor	0 (0)	3 (30)	1 (10)	3 (30)	3 (30)	10 (100)
Has improved my relationship with patients	0 (0)	0 (0)	1 (10)	7 (70)	2 (20)	10 (100)
Has helped improve the cost-effectiveness of service delivery in my clinical area	0 (0)	0 (0)	4 (40)	4 (40)	2 (20)	10 (100)
Has increased the respect I receive from doctors	0 (0)	1 (10)	5 (50)	2 (20)	2 (20)	10 (100)
Means I can deal with all of the patient/service user's prescribing needs	0 (0)	6 (60)	1 (10)	2 (20)	1 (10)	10 (100)

Table 13: Colleagues' perceptions of the impact of working with the prescriber¹

Working alongside a prescriber*:	Strongly disagree n (%)	Disagree n (%)	Uncertain n(%)	Agree n (%)	Strongly agree n (%)	Total responses n (%)
Improves the quality of care provided for patients/service users	0 (0)	0 (0)	1 (4)	7 (27)	18 (69)	26 (100)
Means that the use of the doctors' time is more effective and can be used for more complex cases	1 (4)	0 (0)	0 (0)	7 (27)	18 (69)	26 (100)
Has increased the respect I have for nurse/pharmacist prescribers	0 (0)	1 (4)	0 (0)	8 (32)	16 (64)	25 (96)
Has helped improve the clinical effectiveness of patient care in my clinical area	0 (0)	0 (0)	2 (8)	11 (42)	13 (50)	26 (100)
Increases the capacity of my organisation to provide more appointments for patient/service users	0 (0)	1 (4)	5 (19)	7 (27)	13 (50)	26 (100)
Means my time is used more effectively	0 (0)	1 (4)	4 (16)	8 (32)	12 (48)	25 (96)
Has increased choice for patients/service users	0 (0)	0 (0)	1 (4)	13 (50)	12 (46)	26 (100)
Has helped improve the cost-effectiveness of service delivery in my clinical area	0 (0)	0 (0)	6 (23)	8 (31)	12 (46)	26 (100)
Means I can deal with all of the patient/service user's prescribing needs more effectively	0 (0)	0 (0)	5 (19)	10 (39)	11 (42)	26 (100)
Ensures better use of my skills	0 (0)	1 (4)	5 (19)	11 (42)	9 (35)	26 (100)
Has increased my job satisfaction	0 (0)	2 (8)	6 (23)	10 (39)	8 (31)	26(100)
Has improved my relationship with patients/service users	0 (0)	5 (19)	6 (23)	9 (35)	6 (23%)	26 (100)
Enables patients/service users to have a longer appointment time with the doctor	2 (8)	4 (15)	10 (39)	5 (19)	5 (19%)	26 (100)

*Percentages were rounded to the nearest whole integer and may not equal 100%

However, in comparison to current prescribers, fewer colleagues were in agreement that working with prescribers: ensured better use of colleagues skills (n=20; 77%), increased job satisfaction (n=18; 69%) and improved colleagues relationship with patients/service users (n=15; 58%). Moreover, less than half of the

colleagues agreed or strongly agreed that working alongside a prescriber enabled patients/service users to have a longer appointment time with the doctor (n=10; 38%). Further statistical analysis for prescribers and colleagues perceptions of the impact of prescribing was not possible due to low number of responses and lack of variation in the responses.

Current prescribers' experiences of prescribing

In relation to current prescribers' experiences of prescribing, all respondents agreed or strongly agreed that since qualifying as independent prescribers they were less dependent on doctors (Table 14). All respondents also agreed or strongly agreed that they always discussed any misunderstandings patients had about medicines and provided information about the side effects of medicines (n=10). Nearly all respondents explored what patients think about medicines in general (n=9; 90%), asked patients about whether they have any concerns about the medicines they prescribed (n=8; 80%) and always considered the cost of the items they prescribed (n=8; 80%). However, only 40% (n=4) agreed or strongly agreed that they believed patients/service users found it easier to access their prescriptions from them than a doctor.

None of the respondents had concerns they were prescribing outside their area of competence and all but one respondent would feel safe being treated as a patient by themselves (n=9; 90%). Whilst none of the respondents believed they lacked the clinical examination skills and pharmacological knowledge to be safe prescribers, 50% (n=5) were anxious about the responsibility of prescribing and feared making an incorrect diagnosis. Moreover, 60% (n=6) of respondents did not feel confident prescribing controlled drugs and had concerns about prescribing for patients with co-morbidities.

With regard to respondents' work areas, most agreed or strongly agreed that the clinical governance requirements for prescribing were adequate (n=9; 90%) and that the leadership within their organisation was safety-centred (n=8; 80%). Nearly all respondents believed prescribing errors were handled appropriately in their working environment and that their suggestions about safety would be acted upon if they expressed them to management (n=9; 90%). The majority of respondents did not believe they were asked by colleagues to prescribe in an area outside their competence (n=9; 90%) and felt that the doctors were supportive of them working as prescribers (n=8; 80%). However, 40% (n=4) disagreed that they received appropriate feedback about their performance from colleagues. Whilst most respondents strongly disagreed or disagreed their roles as prescribers were unclear to other clinical staff they worked with (n=8; 80%), they were less certain that non-clinical staff were clear about their roles.

Table 14: Current prescribers' experience of prescribing in their work areas¹

Survey statements:	Strongly disagree n (%)	Disagree n (%)	Uncertain n (%)	Agree n (%)	Strongly agree n (%)	Total responses n (%)
I would feel safe being treated as a patient by me as a prescriber	0 (0)	0 (0)	0 (0)	3 (30)	7 (70)	10 (100)
I ask patients about whether they have any concerns about the medicines I prescribe	0 (0)	0 (0)	2 (20)	3 (30)	5 (50)	10 (100)
I believe that since qualifying as a prescriber who can prescribe independently, I am less dependent on doctors	0 (0)	0 (0)	0 (0)	6 (60)	4 (40)	10 (100)
I always provide information about the side effects of medicines.	0 (0)	0 (0)	0 (0)	6 (60)	4 (40)	10 (100)
I always discuss any misunderstandings patients have about medicines	0 (0)	0 (0)	0 (0)	6 (60)	4 (40)	10 (100)
The doctors I work with are supportive of me working as a prescriber	0 (0)	1 (10)	1 (10)	4 (40)	4 (40)	10 (100)
I always consider the cost of the items I prescribe	0 (0)	1 (10)	1 (10)	4 (40)	4 (40)	10 (100)
In relation to the workplace that you received this questionnaire in, the clinical governance requirements for prescribing are adequate	0 (0)	0 (0)	1 (10)	6 (60)	3 (30)	10 (100)
My suggestions about safety would be acted upon if I expressed them to management	0 (0)	0 (0)	1 (10)	6 (60)	3 (30)	10 (100)
I explore what patients think about medicines in general	0 (0)	1 (10)	0 (0)	6 (60)	3 (30)	10 (100)
The leadership within this organisation is safety-centred	0 (0)	0 (0)	2 (20)	5 (50)	3 (30)	10 (100)
I always ask patients about their beliefs about medicines	0 (0)	0 (0)	3 (30)	4 (40)	3 (30)	10 (100)
I believe patients/service users find it easier to access their prescriptions from me than a doctor	0 (0)	3 (30)	3 (30)	2 (20)	2 (20)	10 (100)
Prescribing errors are handled appropriately in my working	0 (0)	0 (0)	0 (0)	9 (90)	1 (10)	10 (100)

Survey statements:	Strongly disagree n (%)	Disagree n (%)	Uncertain n (%)	Agree n (%)	Strongly agree n (%)	Total responses n (%)
environment						
I am anxious about the responsibility of prescribing	0 (0)	4 (40)	1 (10)	4 (40)	1 (10)	10 (100)
As a prescriber I fear making an incorrect diagnosis	0 (0)	4 (40)	1 (10)	4 (40)	1 (10)	10 (100)
I ask patients about whether they think the medicines I prescribe are necessary for them	0 (0)	0 (0)	3 (30)	7 (70)	0 (0)	10(100)
I am satisfied with inter-disciplinary communication about prescribing in my area of practice	1 (10)	0 (0)	2 (20)	7 (70)	0 (0)	10 (100)
I have concerns about prescribing for patients who have co-morbidities	0 (0)	2 (20)	2 (20)	6 (60)	0 (0)	10 (100)
I receive appropriate feedback about my performance from colleagues	0 (0)	4 (40)	0 (0)	6 (60)	0 (0)	10 (100)
I am asked by patients to prescribe in an area outside my competence	2 (20)	4 (40)	1 (10)	3 (30)	0 (0)	10 (100)
The non-clinical staff I work with are unclear about my role as prescriber	1 (10)	4 (40)	3 (30)	2 (20)	0 (0)	10 (100)
The doctors I work with are unclear about my role as a prescriber	1 (10)	6 (60)	2 (20)	1 (10)	0 (0)	10 (100)
I find it difficult to ensure that I fully record a prescribing episode in patient's notes	3 (30)	4 (40)	2 (20)	1 (10)	0 (0)	10 (100)
The other clinical staff that I work with are unclear about my role as a prescriber	2 (20)	6 (60)	1 (10)	1 (10)	0 (0)	10 (100)
I am asked by colleagues to prescribe in an area outside my competence	2 (20)	7 (70)	1 (10)	0 (0)	0 (0)	10 (100)
I have concerns that I am prescribing outside my area of competence	6 (60)	4 (40)	0 (0)	0 (0)	0 (0)	10 (100)
I do not have the clinical examination skills to be a safe prescriber	5 (50)	5 (50)	0 (0)	0 (0)	0 (0)	10 (100)
I do not have the pharmacological knowledge to be a safe prescriber	7 (70)	3 (30)	0 (0)	0 (0)	0 (0)	10(100)

Colleagues' experiences of working with prescribers

Colleagues' experiences of working with prescribers were very encouraging with the vast majority of respondents agreeing/strongly agreeing with all of the positively worded statements on the survey (see Table 15). Nearly all respondents were supportive of prescribing, understood the role of the prescriber and believed that they worked well with the prescriber (n=25; 96%). Moreover, most respondents believed the prescriber successfully integrated into their team and that the prescriber shared the values and opinions of the team (n=25; 96%).

All respondents were confident the prescriber's suggestions about safety would be acted upon if they were expressed to management and that the prescriber would refer a patient that they were not sure how to treat (n=26). None of the respondents disagreed or strongly disagreed with the statements: "I believe the nurse/pharmacist prescriber has the pharmacological knowledge to be a safe prescriber", "I am satisfied with the inter-disciplinary communication within my team" and "I feel able to discuss any misunderstandings or issues with the nurse/pharmacist prescriber". In addition, most respondents trusted the prescriber (n=25; 96%), consulted with the prescriber for advice on the best treatment option (n=24; 92%) and would feel safe being treated as a patient by the prescriber (n=24; 92%). Most colleagues also agreed or strongly agreed that they were clear about the prescribing rights of the prescriber (n=23; 89%), learned from the prescriber (n=23; 89%) and that having a prescriber on the team made them more aware of their own practice (n=21/25). Further statistical analysis for prescribers and colleagues perceptions on experiences of prescribing was not possible due to the low number of responses and lack of variation in the responses.

Barriers and facilitators to prescribing

This section of the questionnaire involved open-ended questions which asked respondents to list up to three factors which made it difficult for prescribers to prescribe and three factors which enabled them to prescribe. Eleven current prescribers and 18 colleagues provided responses to these open-ended questions. We present and summarise these findings under a number of reoccurring themes which elicited prescribers' and colleagues' views (Table 16 and 17).

Barriers to prescribing

Both prescribers and colleagues perceived the main barriers to prescribing were: lack of competence in certain areas, lack of training, time constraints and lack of prescribing role awareness by patients.

Colleagues also believed that patient acceptance, IT issues and limited prescribing authority were other

barriers to prescribing. Whilst lack of prescribing role awareness by other staff was not mentioned by colleagues, prescribers believed this was an important barrier to prescribing (Table 16).

Table 15: Colleagues' experience of working with the prescriber¹

Statement*:	Strongly disagree n (%)	Disagree n (%)	Uncertain n (%)	Agree n (%)	Strongly agree n (%)	Total responses n (%)
I am supportive of nurse/pharmacist prescribing	0 (0)	0 (0)	1 (4)	4 (15)	21 (81)	26 (100)
I am confident that the nurse/ pharmacist prescriber would refer a patient that they were not sure how to treat	0 (0)	0 (0)	0 (0)	6 (23)	20 (77)	26 (100)
I understand the role of the nurse/pharmacist prescriber	0 (0)	0 (0)	1 (4)	6 (23)	19 (73)	26 (100)
I think that the nurse/ pharmacist prescriber shares the values and opinions of the team	0 (0)	0 (0)	1 (4)	6 (23)	19 (73)	26 (100)
I believe that I work well with the nurse/ pharmacist prescriber	1 (4)	0 (0)	0 (0)	6 (23)	19 (73)	26 (100)
I believe the nurse/ pharmacist prescriber has successfully integrated into our team	1 (4)	0 (0)	0 (0)	6 (23)	19 (73)	26 (100)
The nurse/pharmacist prescriber's suggestions about safety would be acted upon if they were expressed to management	0 (0)	0 (0)	0 (0)	8 (31)	18 (69)	26(100)
I feel able to discuss any misunderstandings or issues with the nurse/ pharmacist prescriber	0 (0)	0 (0)	1 (4)	7 (27)	18 (69)	26 (100)
I am satisfied with the inter-disciplinary communication within my team	0 (0)	0 (0)	1 (4)	7 (27)	18 (69)	26 (100)
I trust the nurse/ pharmacist prescriber	0 (0)	1 (4)	0 (0)	7 (27)	18 (69)	26 (100)

Statement*:	Strongly disagree n (%)	Disagree n (%)	Uncertain n (%)	Agree n (%)	Strongly agree n (%)	Total responses n (%)
I believe the nurse/ pharmacist prescriber has the pharmacological knowledge to be a safe prescriber	0 (0)	0 (0)	2 (8)	6 (23)	18 (69)	26 (100)
I would feel safe being treated as a patient by the nurse/ pharmacist prescriber	0 (0)	1 (4)	1 (4)	6 (23)	18 (69)	26 (100)
I believe that the nurse/ pharmacist prescriber has the clinical examination skills to be a safe prescriber	0 (0)	1 (4)	2 (8)	7 (27)	16 (62)	26 (100)
I am clear about the prescribing rights of the nurse/pharmacist prescriber	0 (0)	0 (0)	3 (12)	9 (35)	14 (54)	26 (100)
I consult with the nurse/ pharmacist prescriber for advice on the best treatment option	1 (4)	0 (0)	1 (4)	11 (42)	13 (50)	26 (100)
I learn from the nurse/ pharmacist prescribe	1 (4)	1 (4)	1 (4)	10 (39)	13 (50)	26 (100)
Having a nurse/ pharmacist prescriber on the team has made me more aware of my own practice	0 (0)	1 (4)	3 (12)	9 (36)	12 (48)	25 (96)
I provide feedback to the nurse/pharmacist prescriber regarding their performance	0 (0)	1 (4)	2 (8)	11 (42)	12 (46)	26 (100)

*Percentages were rounded to the nearest whole integer and may not equal 100%

Table 16: Barriers to prescribing

Themes	Exemplar Quote*
Lack of competence in certain areas	<p><i>"Patients consulting in areas where I lack competence to prescribe"</i> (Prescriber no. 10)</p> <p><i>"Consultations that will involve prescribing outside my area of competence"</i> (Prescriber no .8)</p> <p><i>"Limitations in use of medicines management"</i> (Colleague no. 16)</p> <p><i>"Limited understanding of pharmacology"</i> (Colleague no. 18)</p>
Lack of training	<p><i>"Lack of training in fields expected to prescribe for"</i> (Prescriber no. 2)</p> <p><i>"Lack of mentors within the community setting for nursing /pharmacist prescribers"</i> (Prescriber no. 1)</p> <p><i>"Limited training sessions"</i> (Colleague no. 18)</p>
Time constraints	<p><i>"Time constraints regarding consultation"</i> (Prescriber no. 7)</p> <p><i>"Time limitations"</i> (Prescriber no. 4)</p> <p><i>"Time constraints"</i> (Colleague no. 3)</p> <p><i>"Time pressure"</i> (Colleague no. 7)</p>
Lack of prescribing role awareness by patients	<p><i>"Expectations of patients"</i> (Prescriber no. 11)</p> <p><i>"Patients demands, expectations"</i> (Prescriber no. 5)</p> <p><i>"Patients are mainly unaware that the nurse is now a prescriber as only recently able to do this, but this knowledge/awareness will come with time"</i> (Colleague no. 5)</p> <p><i>"Lack of knowledge by patient on the qualities and capabilities of a nurse/pharmacist prescriber"</i> (Colleague no. 13)</p>
Lack of prescribing role awareness by other staff	<p><i>"Lack of understanding from other professionals/ colleagues/ patients"</i> (Prescriber no. 11)</p> <p><i>"Lack of GP knowledge around competency and scope of practice"</i> (Prescriber no. 1)</p> <p><i>"Unclarity of role amongst non-clinical staff"</i> (Prescriber no. 2)</p>
Patient acceptance	<p><i>"Patients not always accepting"</i> (Colleague no. 4)</p> <p><i>"Patients "trust" is very difficult to gain. They will always doubt the decision and want (in their words) "a proper doctor" to confirm diagnosis or medication"</i> (Colleague no. 13)</p> <p><i>"Lack of public trust"</i> (Colleague no. 17)</p>
IT issues	<p><i>"IT issues- prescribing number"</i> (Colleague no.8)</p> <p><i>"Prescriptions not linked to Emis-Not electronic-NMP use handwritten scripts"</i> (Colleague no. 11)</p> <p><i>"Lack of IT services in domiciliary settings to safeguard prescriber"</i> (Colleague no. 12)</p>
Limited prescribing authority	<p><i>"Cannot prescribe everything just items relevant to her"</i> (Colleague no. 9)</p> <p><i>"Not able to prescribe for other nurses in the team"</i> (Colleague no. 15)</p>

*Respondents to this section were labelled based on ascending order of ID numbers (e.g. colleague number 1 had the smallest ID number amongst colleague respondents who listed barriers and facilitators)

Facilitators to prescribing

Both prescribers and colleagues perceived the main facilitators to prescribing were: knowledge and experience, formal education/training, building rapport with patients and support from colleagues. Prescribers also mentioned organisational support, peer supervision and managing workload as enablers to prescribing. Some colleagues highlighted the importance of prescribers having good teamwork/communication with staff as well as confidence in their prescribing role (Table 17).

Table 17: Facilitators to prescribing

Themes	Exemplar Quote*
Knowledge and experience	<p><i>"Experience of working in community pharmacy for around 30 years treating minor illness"</i> (Prescriber no. 10)</p> <p><i>"Previous extensive experience/training in the area of intended prescribing practice"</i> (Prescriber no. 6)</p> <p><i>"Have the knowledge from both aspects i.e. nursing teams + pharmacy"</i> (Colleague no. 13)</p> <p><i>"Knowledge of drugs"</i> (Colleague no. 15)</p> <p><i>"Highly knowledgeable in her role and responsibilities"</i> (Colleague no. 12)</p>
Formal education/training	<p><i>"Good robust/ formal education with DMP support"</i> (Prescriber no. 2)</p> <p><i>"Education and keeping up to date"</i> (Prescriber no. 5)</p> <p><i>"The NMP course at [mentions university] is very detailed and informative with exposure to Health and Education Co-op"</i> (Prescriber no. 8)</p> <p><i>"Excellent training"</i> (Colleague no. 1)</p> <p><i>"Adequate training"</i> (Colleague no. 8)</p>
Support from colleagues	<p><i>"Other NMPS in the team without this I do not feel it would have been something I could of achieved"</i> (Prescriber no. 11)</p> <p><i>"Support of most colleagues"</i> (Prescriber no. 5)</p> <p><i>"I have very good support with the clinicians"</i> (Prescriber no. 8)</p> <p><i>"GP's being readily available to support her with any prescribing issues"</i> (Colleague no. 5)</p> <p><i>Have the full support of all the doctors + colleagues</i> (Colleague no. 13)</p>
Organisational support	<p><i>"Surgery needs - Funding available via CCG"</i> (Prescriber no. 2)</p> <p><i>"Support from organisation"</i> (Prescriber no. 7)</p>

Themes	Exemplar Quote*
Peer supervision	<p><i>"GPs always nearby and approachable for help and advice"</i> (Prescriber no. 4)</p> <p><i>"Able to discuss things with GP and AMP"</i> (Prescriber no. 9)</p> <p><i>"Support from designated medical practitioner"</i> (Prescriber no. 7)</p>
Managing workload	<p><i>"Time management"</i> (Prescriber no. 5)</p> <p><i>"I am able to prioritise my own workload and change appointments if necessary"</i> (Prescriber no. 6)</p>
Building rapport with patients	<p><i>"Good communication with client/patient"</i> (Prescriber no. 4)</p> <p><i>"Able to spend adequate time with each patient to build up a therapeutic relationship"</i> (Prescriber no. 6)</p> <p><i>"The personal relationship between prescriber and patient i.e. the nurse may be able to make a better decision for the patient rather than a locum doctor that doesn't know them".</i> (Colleague no. 18)</p>
Confidence in prescribing role	<p><i>"Confidence"</i> (Colleague no. 3)</p> <p><i>"Confidence in her role"</i> (Colleague no. 17)</p>
Teamwork and communication with staff	<p><i>"Good team work"</i> (Colleague no. 1)</p> <p><i>"Effective communication system"</i> (Colleague no. 4)</p> <p><i>"Having good communication skills within the team"</i> (Colleague no. 9)</p>

Comments from current prescribers

The final section of the prescriber questionnaire asked respondents to provide freetext comments about their experiences of non-medical prescribing. Five provided comments and the following themes were generated from prescribers' comments: "benefits of non-medical prescribing" and "continuing professional development" (Table 18).

Theme 1: Benefits of non-medical prescribing

Current prescribers believed that non-medical prescribing provided benefits to both patients and the individual prescriber. Prescribers reported feeling more confident as a result of their prescribing roles. They perceived that prescribing provided them with the opportunity to expand their knowledge and utilise their skills effectively. In relation to patients, their roles reduced GP practice visits for patients as they were able to quickly access prescribers and receive their prescriptions promptly.

Table 18: Freetext comments provided by respondents

Respondent	Theme	Current prescriber quotes
Prescriber views	Benefits of non-medical prescribing	<p><i>“It means you can be a truly holistic practitioner. Patients have the confidence in the individual practitioner and the reassurance that a prescription has been issued (if seemed necessary during the consultation) in a timely manner”.</i> (Prescriber no. 7)</p> <p><i>“Patients have really appreciated quick, prompt prescriptions with little time to wait with fewer visits to the practices as a result”.</i> (Prescriber no. 2)</p>
	Continuing professional development	<p><i>“Thoroughly enjoyed NMP training. Variable support during+ past training in Primary care. Would benefit from post training “formal” support”.</i> (prescriber no. 2)</p> <p><i>“I have concerns, that apart from my NMP colleague, there is a huge lack of NMP CPD support in the northwest”.</i> (prescriber no. 1)</p>
Colleague views	Valuable addition to the team	<p><i>“As prescription clerk in a very busy Surgery having to process 250 script, plus queries every day, I have highly benefited with the help of our Pharmacist prescriber, it has reduced my workload and stress levels immensely”</i> (Colleague no. 13)</p> <p><i>“She has been a valuable addition to the primary care team”</i> (Colleague no. 16)</p>
		Confidence in prescriber

Theme 2: Continuing professional development

Current prescribers preferred additional training after receiving their qualification and were concerned that continuing professional development (CPD) for their prescribing roles was currently lacking.

Comments from colleagues

Similar to the prescriber questionnaire, the colleague questionnaire also asked colleagues to provide freetext comments about their experiences of working with prescribers. Seven colleagues provided comments which were summarised under two main themes: “valuable addition to the team” and “confidence in prescriber” (Table 18).

Theme 1: Valuable addition to the team

Colleagues’ believed that working with a prescriber provided a valuable addition to the healthcare team. This was mainly due to prescribers reducing their workload pressures.

Theme 2: Confidence in prescriber

Colleagues were very supportive of the prescribers that they worked with. They were very confident in their abilities to prescribe and trusted them. In addition, they highly praised the skills and knowledge of prescribers in general.

Patient questionnaire

Respondent demographics

Of the 24 survey respondents from 9 practice settings, 14 (58%) were male and 10 (42%) were female, 17 (71%) had a long-term medical condition and 21 (88%) were regularly taking medicines. The age ranges of respondents were almost equally distributed. Demographic details are shown in table 19.

Nearly two-thirds of the respondents (n=15; 63%) were already familiar with the prescriber, with 80% (n=12) of them seeing the prescriber at least 3 times in the last year (see Table 20). Almost half of the respondents (n=11; 46%) decided to have an appointment with the prescriber despite having the option to see the doctor. Seven (29%) specifically requested to visit the prescriber whilst six (25%) said they did not have the option to see the doctor. Respondents’ main reason for having an appointment with the prescriber was because they needed medical information (see Table 21).

Table 19: Demographic details of respondents

Characteristic	N	%*
Gender		
Male	14	58
Female	10	42
Age		
<40	4	17
40-50	5	21
51-60	4	17
61-70	5	21
71 and over	6	25
Long-term medical condition		
Yes	17	71
No	7	29
Number of medicines (e.g. tablets, capsules, inhalers, eye/eardrops etc.) taken regularly		
No regular medicines	3	13
1-3 medicines	5	21
3-6 medicines	6	25
7-10 medicines	9	38
> 10 medicines	1	4

*Percentages were rounded to the nearest whole integer and may not equal 100%

Table 20: Respondents previous experience with the prescriber

Previous experience with nurse/pharmacist prescriber	N	%*
First time to see the pharmacist or nurse prescriber		
Yes	9	38
No	15	63
Number of times seen the prescriber in the last 12 months (if not first time seeing the pharmacist or nurse prescriber)		
<3times	3	20
≥3times	12	80

*Percentages were rounded to the nearest whole integer and may not equal 100%

Table 21: Respondents' purpose for appointment with the prescriber

Purpose for the appointment with prescriber	N	%*
Decision to see the nurse/pharmacist prescriber for appointment		
<i>Specifically requested to see the nurse/pharmacist prescriber</i>	7	29
<i>Had the option to see the nurse/pharmacist prescriber or a doctor</i>	11	46
<i>Was not given the option to see a doctor</i>	6	25
Reason(s) for the appointment with the pharmacist or nurse prescriber		
<i>Needed medical information</i>	15	63
<i>Needed medical treatment</i>	9	38
<i>Needed general health advice</i>	8	33
<i>Needed psychosocial assistance</i>	0	0

*Percentages were rounded to the nearest whole integer and may not equal 100%

Patients' experiences of their consultations with the prescriber

Patients' experiences of their consultations with the prescriber were mostly positive with the vast majority of respondents agreeing/strongly agreeing that they were very satisfied with their visit to the prescriber (n=23; 96%). Most respondents felt safe being treated by the prescriber (n=23; 96%), were able to ask any questions about their medicines (n=22; 92%) and raise concerns about a new medicine throughout their consultations (n=21; 88%). Moreover, the majority of respondents felt the prescriber really understood their point of view and told them as much as they wanted to know about their medicines (n=22; 92%).

Table 22: Patients' experience of their consultation with prescriber¹

Statements*:	Strongly disagree n (%)	Disagree n (%)	Neither agree nor disagree n (%)	Agree n (%)	Strongly agree n (%)	N/A n (%)	Total respon ses n (%)
I was very satisfied with my visit to this pharmacist or nurse prescriber	1 (4)	0 (0)	0 (0)	4 (17)	19 (79)	0 (0)	24 (100)
The nurse/pharmacist prescriber told me as much as I wanted to know about my medicines	1 (4)	0 (0)	0 (0)	3 (13)	19 (79)	1 (4)	24 (100)
I feel able to ask my nurse/pharmacist prescriber any questions that I may have about my medicines	1 (4)	0 (0)	0 (0)	3 (13)	19 (79)	1 (4)	24 (100)
I felt safe being treated by the nurse/pharmacist prescriber	1 (4)	0 (0)	0 (0)	5 (21)	18 (75)	0 (0)	24 (100)
I would be happy to see my nurse/pharmacist prescriber for future appointments if the doctor was not available	1 (4)	0 (0)	0 (0)	9 (38)	13 (54)	1 (4)	24 (100)
I felt the nurse/pharmacist prescriber really understood my point of view	1 (4)	1 (4)	0 (0)	10 (42)	12 (50)	0 (0)	24 (100)
I feel able to raise concerns about a new medicine with my nurse/pharmacist prescriber	1 (4)	0 (0)	2 (8)	12 (50)	9 (38)	0 (0)	24 (100)
The nurse/pharmacist prescriber asked me what I thought about my prescribed medicines	1 (4)	0 (0)	3 (13)	9 (38)	9 (38)	2 (8)	24(100)
My condition is controlled better since being treated by my nurse/pharmacist prescriber	1 (4)	0 (0)	6 (25)	5 (21)	8 (33)	4 (17)	24 (100)
It is easier to get an appointment with my nurse/pharmacist prescriber than with my doctor	2 (8)	0 (0)	4 (17)	10 (42)	7 (29)	1 (4)	24 (100)

Statements*:	Strongly disagree n (%)	Disagree n (%)	Neither agree nor disagree n (%)	Agree n (%)	Strongly agree n (%)	N/A n (%)	Total respon ses n (%)
Getting a prescription for my medicines from my nurse/pharmacist is quicker than getting them from my doctor	2 (8)	0 (0)	7 (29)	7 (29)	7 (29)	1 (4)	24 (100)
I would choose to see my nurse/pharmacist prescriber for future appointments instead of my doctor if given the choice	1 (4)	1 (4)	10 (42)	4 (17)	7 (29)	1 (4)	24 (100)
I get longer appointments with my nurse/pharmacist prescriber than my doctor	2 (8)	0 (0)	3 (13)	11 (46)	6 (25)	2 (8)	24 (100)
I am happier with my medicines since being treated by my nurse/pharmacist prescriber than when I was treated by a doctor	1 (4)	0 (0)	12 (50)	3 (13)	6 (25)	2 (8)	24(100)
I wish it had been possible to spend a little more time with the nurse/pharmacist prescriber	4 (17)	4 (17)	10 (42)	3 (13)	3 (13)	0 (0)	24 (100)
Being treated by my nurse/pharmacist prescriber has had no effect on my condition	5 (21)	6 (25)	5 (21)	1 (4)	2 (8)	5 (21)	24(100%)
I am more likely to take my medicines when they are prescribed by a nurse/pharmacist prescriber than when they are prescribed by a doctor	2 (8)	2 (8)	15 (63)	3 (13)	1 (4)	1 (4)	24(100%)
Some things about my consultation with the nurse/pharmacist prescriber could have been better	9 (38)	9 (38)	4 (17)	0 (0)	1 (4)	1 (4)	24 (100%)
Since being treated by your nurse/pharmacist prescriber have the number of appointments with your doctor:							
Increased (%)	Stayed the same (%)		Decreased (%)	N/A (%)	Response (%)		
0 (0)	4 (17)		12 (50)	8 (33)	24 (100)		

*Percentages were rounded to the nearest whole integer and may not equal 100%

Most perceived that it was easier to get an appointment with the prescriber in comparison to doctors and believed they got longer appointments (n=17; 71%). However, nearly two-thirds (n=15; 63%) neither agreed nor disagreed that they were more likely to take their medications when prescribed by a prescriber versus a doctor. In addition, 50% (n=12) neither agreed nor disagreed that they were happier with their medicines since being treated by the prescriber in comparison to their doctor. Whilst a third of respondents (n=8; 33%) did not have a preference to see the prescriber for future appointments instead of the doctor, they were happy to see a prescriber if the doctor was unavailable (n=22; 92%). With regard to reducing GP workload, 50% (n=12) of respondents had fewer GP appointments since being treated by their prescriber (see Table 22). Further statistical analysis was not possible due to the low number of responses and lack of variation in the responses.

Comments section

The final section of the patient questionnaire asked patients to provide freetext comments about their experience with the prescriber. Twelve patients provided comments. These were grouped under three themes: “support for the prescriber”, “prescriber’s professionalism” and “convenience of prescribers” (Table 23).

Theme 1: Support for the prescriber

Respondents were generally satisfied with their decision to have an appointment with the prescriber. They were very supportive of and confident in their prescriber.

Theme 2: Prescriber’s professionalism

Respondents were pleased with their prescriber’s professionalism. They felt their prescriber listened to them and made them feel at ease. In addition, they believed that prescribers were very knowledgeable about medications.

Theme 3: Convenience of prescribers

Respondents found it easier and faster to get appointments with prescribers in comparison to their doctors. In addition, they felt they got more time to discuss their medications with prescribers.

Table 23: Freetext comments provided by patient respondents

Theme	Patient quotes*
Support for the prescriber	<p><i>"I would be satisfied meeting the nurse in the future". (Respondent no 5)</i></p> <p><i>"I have every confidence in my Podiatrist/Pharmacist prescriber". (Respondent no 2)</i></p>
Prescriber's professionalism	<p><i>"She was professional, pleasant and made me feel at ease through my consultation". (Respondent no 8)</i></p> <p><i>"She was thoughtful, explained meds and what was to be prescribed". (Respondent no 5)</i></p>
Convenience of prescribers	<p><i>"I really think this is a great idea as you can be waiting weeks to get an appointment with a doctor, it is just a lot easier when you have to get the prescriptions on a regular basis". (Respondent no 6)</i></p> <p><i>"The nurse prescriber sees me much quicker than trying to see the GP. The nurse prescriber will spend more time sorting and explaining aspects of my condition and medication". (Respondent no 9)</i></p>

* Respondents were labelled based on ascending order of ID numbers (e.g. respondent number 2 had the second smallest ID number amongst those who provided comments)

Discussion

Non-medical prescribing in a range of settings can deliver comparable outcomes to medical prescribing.^{3,5,6} HEENW provided funding to increase the capacity of NMPs in primary care and mental health as part of the 2016/17 Workforce Transformation, and for community pharmacy in 2015/16. This project evaluated the impact of this Workforce Transformation funding.

This evaluation consisted of a number of brief questions on numbers of student enquiries, registrations, commencement, completion and pass/fail rates to the eight higher education institutions (HEIs) whose independent prescribing (IP) courses had been funded by HEENW Workforce Transformation.

Prescribers whose IP qualification had been funded by HEENW (including those still in training), colleagues who prescribers worked with, and patients' who experienced a recent consultation with the prescriber were surveyed using questionnaire which were based on existing research instruments and allowed comparison.

Questionnaire packs consisted of eight questionnaires (one for the prescriber, two for their colleagues and five for their patients) and were distributed by HEENW to prescribers at the address held by HEENW. Prescribers were asked to hand one questionnaire to their team manager and a second one to the colleague they worked with most closely and five to consecutive patients (to avoid selection bias). Two email reminders were sent to prescribers by HEENW followed by a verbal reminder at a meeting with NMP leads.

Summary of findings

Overall, patients were very satisfied and supportive of non-medical prescribing. Patients valued the reassurance the service provided them as they felt they had the opportunity to raise any questions or concerns. Patients were also confident and felt safe being treated by prescribers. In general, patients did not have a preference for using prescribers over doctors but valued having the option of visiting an alternative healthcare provider. They perceived that it was easier to get appointments with prescribers and that they got more consultation time compared to their doctors. Patients reported that the access and convenience of prescribers reduced their number of appointments with a doctor.

Non-medical prescribing also provided benefits for prescribers and their colleagues. All prescribers reported personal benefits such as improved job satisfaction and better use of their skills and time as a result of their prescribing roles. Prescribers were less dependent on doctors after qualifying as independent prescribers. Prescribers believed that their prescribing roles improved their relationships with patients and the quality of care they provided. Moreover, prescribers and their colleagues believed prescribing reduced doctors' workload which meant the use of doctors' time was more effective and could be used for more complex cases. In addition, colleagues believed that working alongside a prescriber enhanced workflow as they could deal with all of the patient's prescribing needs more effectively.

Survey results highlighted good/effective practice from prescribers such as: generally exploring what patients think about medicines, providing information about the side effects of medicines, discussing misunderstandings patients had about medicines and asking patients whether they have any concerns about the medicines they prescribed. In addition, most prescribers reported always considered the cost of the items they prescribed.

Findings were also positive in terms of prescribers' ability to collaborate and integrate with the wider healthcare team. Colleagues believed they worked well with prescribers and were satisfied with the

inter-professional communication within the team. Colleagues trusted prescribers and consulted them for advice on the best treatment options. Interestingly, colleagues also learned from the prescribers and felt that having a prescriber on the team made them more aware of their own practice.

The most notable areas where prescribers and colleagues felt some improvement was required were physical assessment skills and diagnosing patients. The majority of prescribers felt that the training course did not adequately prepare them in these areas and feared making an incorrect diagnosis. Based on the comments from prescribers, the amount of training received in general was deemed inadequate. Some of the prescribers were anxious about the responsibility of prescribing and especially lacked confidence in prescribing controlled drugs and prescribing for patients with co-morbidities.

The main factors which enabled prescribers to practice were training and experience, confidence, managing workload, organisational support and establishing relationships with patients and healthcare staff. These factors should be further built on to ensure positive impact and improved outcomes for the prescriber initiative. On the other hand, it is important to consider barriers to prescribing which involved time constraints, IT issues, lack of competence in certain areas and low patient/healthcare professionals awareness of non-medical prescribing. Whilst findings from this evaluation were very encouraging, these findings are limited by very low responses. Therefore, findings should be interpreted with caution.

Comparison with literature

Nevertheless, we were able to compare our findings with studies which used the same survey instruments. There was a considerable overlap in findings as these previous studies have also identified that the majority of patients had positive attitudes to non-medical prescribing, were very satisfied with their visit to their prescriber and were confident/supportive of their prescribers.^{8,20,21} In terms of patient preferences for healthcare provider, most patients in one study did not report a strong preference for either their non-medical or medical prescriber⁸ whilst those in another study would still choose to see their doctor if provided with the choice.²⁰

The majority of prescribers in these earlier studies perceived that prescribing elevated their professional status, increased their job satisfaction, increased professional autonomy and resulted in better use of their skills.^{9,20} In addition, most prescribers were very satisfied with their education and training for prescribing roles.^{8,20} Whilst prescribers were confident in most aspects of their prescribing roles, they were far less confident in prescribing for patients with co-morbidities, performing physical examinations and diagnosing patients.^{8,9}

In addition to previous studies which used similar measures, recent systematic reviews which gathered evidence from the wider literature support findings reported by this evaluation that non-medical prescribing improved patient access to healthcare services, made better use of prescribers' skills and knowledge, improved job satisfaction, and reduced physician workload.^{22,23}

Limitations

The main limitation to this evaluation was the exceptionally poor survey response rates by all groups which made it unfeasible to investigate improved value for money and provide an economic evaluation of the investment against impact, take up of the offer by the potential workforce population, any barriers which prevented access, retention of students, and impact of service development. Whilst we intended to be able to identify insights into contexts and case studies of different settings, this was not possible due to the very low response rates. As suggested in our original proposal, with some additional funding, a realist evaluation²⁴⁻²⁶ could involve the conduct of case studies in settings where prescribers practise by interviewing prescribers, team managers and colleagues. Using a realist approach would have allowed us to generate more in-depth and insightful findings. Another limitation which may have contributed to low response rates was that HEENW may have held outdated contact details for prescribers. To enhance research engagement and response rates, we would recommend that, in future, HEE North may wish to consider adding an requirement to cooperate with an evaluation when issuing funding contracts with HEIs and also healthcare professionals funded under their workforce transformation – and other – funds, thus ensuring a robust evaluation of public funds can be assured.

Conclusions

Whilst positive findings from this evaluation support the HEENW initiative to increase the capacity of prescribers in primary care, these findings are limited by very low responses, so findings need to be interpreted with caution. Nonetheless, findings support evidence from the wider literature that has also identified positive attitudes and impact for non-medical prescribing. To improve future funded evaluations, we recommend budgeting for qualitative approaches as they provide more in-depth and insightful findings which can inform policy and practice. In addition, to facilitate and enhance communication/cooperation from public bodies receiving funding, we strongly suggest that future workforce funding initiatives should oblige those receiving funds to cooperate with a commissioned evaluation during and/or after the funding initiative.

References

1. Abbing HR. Health, Healthcare and ageing populations in Europe, a human rights challenge for European health systems. *Eur J Health Law* 2016;23:435-52.
2. Baird B, Charles A, Honeyman M, et al. Understanding pressures in general practice. London: The King's Fund; 2016.
3. Weeks G, George J, Maclure K, et al. Non-medical prescribing versus medical prescribing for acute and chronic disease management in primary and secondary care. The Cochrane database of systematic reviews. 2016;11:CD011227.
4. NHS England. Improving health and patient care through community pharmacy– a call to action: NHS England; 2013.
5. Bhanbhro S, Drennan VM, Grant R, et al. Assessing the contribution of prescribing in primary care by nurses and professionals allied to medicine: a systematic review of literature. *BMC health services research* 2011;11:330.
6. Creedon R, Byrne S, Kennedy J, et al. The impact of nurse prescribing on the clinical setting. *Br J Nurs* 2015;24(17):878-85.
7. NHS Health Education North West. Non-medical prescribing (NMP) An economic evaluation: i5 Health; 2015.
8. Latter S, Blenkinsopp A, Smith A, et al. Evaluation of nurse and pharmacist independent prescribing: Department of Health Policy Research Programme Project; 2010.
9. McCann L, Haughey S, Parsons C, et al. Pharmacist prescribing in Northern Ireland: a quantitative assessment. *Int J Clin Pharm* 2011;33(5):824-31.
10. Unwin R, Redman S, Bain H, et al. Supporting practice learning time for non-medical prescribing students: managers' views. *Nurs Manag (Harrow)* 2016;23(3):25-9.
11. Lim RH, Courtenay M, Fleming G. Roles of the non-medical prescribing leads within organisations across a Strategic Health Authority: perceived functions and factors supporting the role. *Int J Pharm Pract* 2013;21(2):82-91.
12. Courtenay M, Carey N, Stenner K. Non medical prescribing leads views on their role and the implementation of non medical prescribing from a multi-organisational perspective. *BMC Health Services Research* 2011;11(142).
13. Bowskill D, Meade O, Lymn JS. Use and evaluation of a mentoring scheme to promote integration of non-medical prescribing in a clinical context. *BMC Medical Education* 2014;14:177.

14. Earle EA, Taylor J, Peet M, et al. Nurse prescribing in specialist mental health (part 1): the views and experiences of practising and non-practising nurse prescribers and service users. *J Psychiatr Ment Health Nurs* 2011;18(3):189-97.
15. Dobel-Ober D, Brimblecombe N. National survey of nurse prescribing in mental health services; a follow-up 6 years on. *J Psychiatr Ment Health Nurs* 2016;23(6-7):378-86.
16. Ross JD. Mental health nurse prescribing: the emerging impact. *J Psychiatr Ment Health Nurs* 2015;22(7):529-42.
17. Mangle L, Phillips P, Pitts M, et al. Implementation of independent nurse prescribing in UK mental health settings: focus on attention-deficit/hyperactivity disorder. *ADHD Attention deficit and hyperactivity disorders* 2014;6(4):269-79.
18. Dobel-Ober D, Brimblecombe N, Bradley E. Nurse prescribing in mental health: national survey. *J Psychiatr Ment Health Nurs* 2010;17(6):487-93.
19. Baker R. Development of a questionnaire to assess patients' satisfaction with consultations in general practice. *Br J Gen Pract* 1990;40(341):487-90.
20. Stewart D, George J, Bond C, et al. Evaluating supplementary prescribing by pharmacists in Scotland: NHS Education for Scotland. 2007.
21. Tinelli M, Blenkinsopp A, Latter S, et al. Survey of patients' experiences and perceptions of care provided by nurse and pharmacist independent prescribers in primary care. *Health Expect* 2015;18(5):1241-55.
22. Famiyeh IM, McCarthy L. Pharmacist prescribing: A scoping review about the views and experiences of patients and the public. *Res Soc Admin Pharm* 2017;13(1):1-16.
23. Jebara T, Cunningham S, MacLure K, Awaisu A, Pallivalapila A, Stewart D. Stakeholders' views and experiences of pharmacist prescribing: a systematic review. *Br J Clin Pharmacol* 2018.
24. Wynn Jr D, CK. W. Principles for conducting critical realist case study research in information systems. *MIS quarterly*. 2012;36(3):787-810.
25. Wong G, Greenhalgh T, Westhorp G, Pawson R. Realist methods in medical education research: what are they and what can they contribute? *Med Educ* 2012;46(1):89-96.
26. Pawson R, Tilley N. *Realistic Evaluation*: Sage; 1997.