Accepted Manuscript

Continuous Professional Development needs of Nursing and Allied Health Professionals with responsibility for prescribing

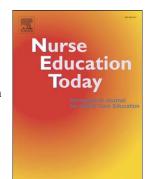
Robert S. Weglicki, Julie Reynolds, Peter H. Rivers

PII: S0260-6917(14)00272-X DOI: doi: 10.1016/j.nedt.2014.08.009

Reference: YNEDT 2779

To appear in: Nurse Education Today

Accepted date: 19 August 2014



Please cite this article as: Weglicki, Robert S., Reynolds, Julie, Rivers, Peter H., Continuous Professional Development needs of Nursing and Allied Health Professionals with responsibility for prescribing, *Nurse Education Today* (2014), doi: 10.1016/j.nedt.2014.08.009

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Continuous Professional Development needs of Nursing and Allied Health Professionals with responsibility for prescribing

Robert S. Weglicki (Senior Lecturer, Pharmacist, University of Derby: Tel: 01332 593037, email:r.weglicki@derby.ac.uk), Julie Reynolds (Senior Lecturer, Nurse, University of Derby: Tel 01332 593036, email:j.reynolds@derby.ac.uk) & Peter H. Rivers (Reader in Pharmacy Practice, De Montfort University: Tel: 0116 2577039, email:privers@dmu.ac.uk)

WORD COUNT 4827

Acknowledgments

We would like to thank the following for their contribution to this research:

Karen Clubb (Senior Lecturer, School of Law and Criminology, University of Derby) as for her contribution to the transcript content analysis. Ann Hamp (Research Assistant, University of Derby) for undertaking the audio recording of the individual semi-structured interviews and focus group interview. Rebecca Marples (PhD student, University of Sheffield) for undertaking the audio transcription of the individual semi-structured interviews and focus group interview. Bill Whitehead (Assistant Head of Subject Area, Nursing and Healthcare Practice, University of Derby) for his supportive comments and invaluable advice regarding article publication.

Finally, special thanks to Tony Daly as Non-medical Prescribing programme lead (University of Derby), for his input into developing the CPD learning modules which focussed upon the anxieties and learning needs identified from this research.

Introduction

Ever since the Crown Report (Department of Health, 1999) which advocated the introduction of non-medical prescribing, subsequent progressive legislative changes (Department of Health, 2002) have given rise to an increasing number of health care professionals with prescribing status. Non-medical prescribers, after training, may now independently prescribe any medicinal product listed in the British National Formulary so long as the patient's condition falls within the professional clinical competency of the health care professional concerned. In October 2009, the number of nurse independent prescribers exceeded 14,000 and the number of pharmacists with independent or supplementary prescribing status stood at 1,700 (National Prescribing Centre, 2010). By 2011, the total number of registered non-medical prescribers in the UK, had reached 47,725 (Brown, 2012).

The role of non-medical prescribers, working collaboratively with doctors, has been hailed as a key driver of innovation to enable greater productivity without compromising quality (National Prescribing Centre, 2010). They are now prescribing over one million items each month in primary care settings on FP10 prescription (National Prescribing Centre, 2010). Current political drivers are associated with a strong desire, by both the government (Department of Health, 2009) and the professional bodies for nurses (Nursing and Midwifery Council, 2006) and pharmacists (Royal Pharmaceutical Society, 2006) to deploy non-medical prescribers in order to free-up expensive medical time and reduce waiting times for service users. However, despite the strategic importance to the National Health Service (NHS) of the role of non-medical prescribers, little attention has, to date, been paid by professional bodies to the continuing professional development (CPD) needs of non-medical prescribers other than to recognize the importance of CPD as a generic professional requirement (General Pharmaceutical Council, 2010; Health Professions Council, 2010; Nursing and Midwifery Council, 2008). There are concerns that an adequate CPD strategy is not yet in place to

support nurse prescribers and uncertainties prevail regarding which skills are required in order to ensure health care professionals are competent to perform a prescribing role (Bradley, Campbell & Nolan, 2005). The purpose of the present study was, therefore, to ascertain the aspirations of non-medical prescribers with regard to their preferred mode of CPD and to gauge opinion about the support needed in order to meet the clinical demands of a prescribing role.

Methods

Based upon a phenomenological approach (Parahoo, 1997) the 'lived experiences' were explored of a cohort of students from a variety of professional backgrounds who had studied non-medical prescribing at an East Midlands University. We wanted to understand what it is like to be a non-medical prescriber with respect to their personal experience of practice and especially, in their role, how clinical competency reconciles with any training and support received. Ethical approval for the study was granted by the University's Research Ethics Committee. Qualitative data were derived from 16 ex-university students (11 nurses, three physiotherapists, one pharmacist and one pharmacy technician) who participated in semistructured in-depth interviews or a focus group. The participants were working in primary or secondary care settings in generalist or specialist advanced roles including a renal nurse. A semi-structured topic guide was developed in order to cover clinical decision-making and diagnostic skills relating to areas such as long-term conditions, mental health issues, addiction and end-of-life care alongside prescribing for certain population groups such as children and the elderly. Participants were also asked to comment upon the support they received for training in their prescribing or medicines management role such as the suitability of their clinical supervision and their preferred mode of study. A content analysis of emerging themes was conducted based on anonymised verbatim transcripts of audio recordings. Some triangulation was achieved (Cohen, Manion & Morrison, 2007) which

helped to increase validity by comparing similar remarks derived from the focus group and separate interviews as well as from different professional groups working in primary and secondary care settings.

Findings

Four key themes emerged which provide a basis for improving our understanding of the CPD needs of non-medical prescribers. Theme 1: 'Personal anxiety undermining confidence to prescribe', Theme 2: 'External barriers and other factors that exacerbate anxiety', Theme 3: 'Need for support identified through coping strategies', Theme 4: 'Preferred mode or style of learning'.

Theme 1: Personal anxiety undermining confidence to prescribe

Non-medical prescribers expressed considerable personal anxiety that they were not keeping up to date within their area of competence or feared that they were not making 'correct' decisions or that they were unable to recall theory learned during the non-medical prescribing course. There was a lack of awareness among some participants of drug interactions and a fear of incompetence – for example, when performing dosage calculations. These concerns raise a broader question concerning where the balance of responsibility lies in terms of keeping abreast of new drug developments. Whilst individual prescribers should keep themselves up to date, some expect CPD to be made available through the workplace training to suit specific competencies. As one secondary care specialist nurse put it: "I would like much more for my CPD to do with pain management and analgesia ... maybe new drugs that are coming on the market, the pharmacology associated with that ... would be useful for me". This sentiment was echoed by others who were concerned that knowledge relating to their specific area of competence may become out of date.

"- What there's a huge lack of, from continuing professional development, is continuing information and skills and knowledge to keep people up to date".

(Secondary Care Nurse Specialist, interview)

"It does now feel [that] I've not been able to implement my training – I feel very concerned, really, about the fact that I'm perhaps not up-to-speed any longer..."

(Secondary Care Nurse Specialist, focus group)

There were some who, arguably unrealistically, challenged the value of generic non-medical prescribing courses on the basis that the training covers general principles and insufficiently address the requirements of individual prescribers.

"I think that was the challenge – in terms of delivering the non-medical prescribing course to [a] generic group of people – how can you capture the specialisms – how can you capture that cross boundary of primary care, secondary care, tertiary care?"

(Secondary Care Nurse Specialist, interview)

For others, confidence was lacking due to concern about their retention of theory underpinning a scientific approach to prescribing to ensure quality decisions rather than blindly following established trends or depending upon memory.

"I think it's the theory that we learnt that was so important...at the time it was like switching a light bulb on....All that theory –that meaty stuff we learnt – we're not doing it – we're not thinking about that every day! You just [tend to] think'- 'Oh, this person's got a skin infection so probably needs flucloxacillin' – so, you know, that's what you do for that thing - you're not thinking why".

(Primary Care Nurse Specialist, interview)

The fear of being sued and the implications of vicarious liability through failing to maintain one's professional competence was at the forefront of some non-medical prescribers' minds as being a focal point for CPD:

"From a legal aspect, it would be useful knowing where you stood, should there be a mistake made and, you know, we are in a litigious society"

(Secondary Care Nurse Specialist, interview)

Theme 2: 'External barriers and other factors that exacerbate anxiety'

Not surprisingly, some non-medical prescribers cited difficulties in communication arising between the primary and secondary care interface when discharging patients from hospital. Others tended to focus upon difficulties associated with obtaining information about medicines including frustration in situations where poor information could compromise safety:-

"I find issues with patients discharged from secondary care... sometimes the information's not got through to primary care and patients then are in the middle.. then I'm going in to see them and I'm having to ring the ward because the hand-out that's come out with the patient is illegible"

(Primary Care General Practice Nurse, interview)

There is, of course, a limit to which CPD itself can address some of the more endemic problems associated with working across organisational boundaries. The views of the participants indicate that CPD and individual support is appreciated by non-medical prescribers when dealing with some of the more commonplace generic organisational and communication issues that arise between primary and secondary care settings. A physiotherapist was particularly annoyed about the lack of availability of the most recent British National Formulary:-

"We have to fight tooth and nail to get hold of [a] current BNF and that should be as a matter of routine because how can you prescribe off an old BNF...?"

(Primary Care Physiotherapist, interview)

Theme 3: Need for support identified through coping strategies

Non-medical prescribers especially valued the support of medical and non-medical colleagues and clinical supervisors in confirming that certain actions or decisions are correct:—:

"If I've ever been unsure about something, I'll just follow him [doctor] and we'll do a consultation together so I'm being updated, and he was my practice based educator for the prescribing [course]"

(Primary Care Physiotherapist, interview)

Support was, moreover, perceived very positively, through valuing clinical supervisors during the period of training on the non-medical prescribing course. In some instances participants had forged excellent working relations with clinicians that enabled them to continue to receive mentorship after having completed their qualification.

"...We get on [so] well ...that he will then just come out of the situation and we'll sit and discuss it so I feel I'm actually having ongoing CPD!"

(Secondary Care Nurse Specialist, interview)

Personal contact with a supportive peer group was considered to be important as opposed to a less interactive experience of on-line learning.

"... We have got quite an active non-medical prescribers group and although we don't use it as clinical supervision, we do use it as a support group... we're all non-medical prescribers - we all understand what you can do and what you can't do and we are quite active because we have been active in auditing as well as looking at patient satisfaction"

(Secondary Care Nurse Specialist, interview)

Theme 4: 'Preferred mode or style of learning'

Some participants tended to react negatively to on-line learning. This may be because of the need to receive feedback and reassurance within the learning environment in order to alleviate anxiety arising from perceived incompetence. This notion is supported by non-medical prescribers' appreciation of learning gained from expert speakers in face-to-face lectures and workshops. One participant, for example, reflected - "I do work well in groups, sort of workshop type structure really. I find I sort of learn better from that way" (Primary Care Mental Health Nurse, interview). Arguably, the interaction between teacher and learner that is valued by non-medical prescribers cannot sufficiently be generated through distance learning media. As one primary care nurse put it – "they [the lecturers] are quite passionate about what they do...but I find it

difficult to get passionate about computers!" On the other hand, there are those who prefer e-learning because they appreciate the convenience of being able to study at their own pace and time which may be outside working hours. Yet others prefer an interprofessional approach in order to underpin safe and effective prescribing taking into account different professional perspectives which may enrich the learning environment. For example, one participant asked:

"...Why is the course for non-medical prescribers ... not for prescribers generally - there might be much to be gained from having a course for all new prescribers including new doctors?

(Primary Care Pharmacist, interview)

Others expressed a preference for retaining continuity with an academic institution in order to gain access to specialist workshops and seminars.

"...I think it would just be very nice to know
[that] when you've finished the independent
prescribing course - to think – OK, in six months'
time there will be this opportunity to have a
follow on or follow up through the university..."

(Secondary Care Specialist Nurse, interview)

Learning through informal debate with those engaged in clinical practice either from a generalist or specialist perspective, was considered to be invaluable. This sort of

interaction was thought to help redress anxieties around prescribing decisions and medicines management.

Discussion

At a time of considerable change and a drive for greater efficiency, the developing role of the non-medical prescriber arguably represents one of the most important practical, as opposed to structural and process, initiatives designed to underpin the survival of the NHS. It is likely that those involved in commissioning will, increasingly, be encouraged to utilise non-medical prescribers from all professional domains in order to optimise the skills of the workforce within general practice, the acute and community sectors. A pressing opportunity, therefore, exists for non-medical practitioners to demonstrate their unique professional skills in a manner that is supportive of medical practice whilst also resulting in a seamless and integrated delivery of care to the patient. Against this background, it is noteworthy that, between 2008 and 2009 there was approximately a six-fold variation in volume of non-medical prescribing for cardiovascular disease, infection and mental health across the (then) ten English strategic health authority regions (National Prescribing Centre, 2010). Therefore, as suggested by the National Prescribing Centre, there are opportunities for commissioners to share learning across organisations in order to reduce costs, increase efficiency and reduce waste whilst ensuring more efficient use of professional expertise.

Some non-medical prescribers experience an underlying anxiety that reflects a lack of confidence in prescribing. This is apparent, both in terms of retaining a theoretical underpinning to support prescribing decisions, and being able to keep up to date, pharmacologically, with advances in drug development. External barriers may undermine the confidence of non-medical prescribers such as poor communication between or within primary or secondary care settings. These may exacerbate stressful situations that arise when

quality decisions are dependent upon timely and accurate information (Avery et al., 2012; Picton & Wright 2012, National Prescribing Centre, 2011). It may be surprising to learn that the transition from undergraduate medical education to the Foundation Year 1(FY1) raises similar anxieties for junior doctors (Han and Maxwell, 2006). This arises despite doctors having regular prescribing opportunities integrated into the two-year foundation programme (Dornan et al., 2009). The prescribing experience of some hospital prescribers on cardiology and respiratory wards suggests that FY1 doctors, and, to a lesser extent, those in FY2, follow local guidelines as 'rote' and tend to rely upon senior colleagues to help apply their knowledge in different circumstances and to develop their confidence in prescribing (Jiwa, Ahmed, Rivers & Ebrahim, 2012).

There are also issues with regard to increasing accountability and responsibility that a prescribing role confers upon practitioners (Waite and Keenan, 2010; Bradley et al., 2004; Courtenay and Griffiths, 2004). The anxiety associated with perceived vulnerability and culpability expressed by non-medical prescribers raises the question as to whether practitioners might be signing up to courses because the prescribing role is an expectation or prerequisite for certain professional posts, or are viewed by their employer as a cost-effective measure of service provision. Conversely, some voluntarily elect to become prescribers (Latter et al., 2010, Cooper, Guillaume et al., 2008, Bradley et al., 2004). Others may decide to become prescribers for personal reasons in order to further their professional development or because they think it might increase their ability to work autonomously or legitimise their current practice, hitherto unrecognised (Department of Health, 2010). Whilst these goals are laudable, the personal drivers, alone, of such practitioners cannot guarantee their confidence and competence to prescribe safely.

Our findings support the notion that practitioners develop coping strategies by drawing upon support from colleagues - both medical and non-medical (Dornan et al., 2009; Buck, 2008).

Perhaps, in time, the purpose of this sort of support will shift from that of being a coping requirement to one where a more autonomous professional support infrastructure or culture can begin to emerge. We argue that isolation, in a non-medical prescribing context, seems to arise partly from the fact that health care practitioners practise in accordance with the quality standards of their own professional body. There is a sense in which each professional group may seek to demonstrate 'added-value' conferred through their own professional status. For example, a physiotherapist might ask of herself: "What value can I offer to patients as a qualified physiotherapist and as a (non-medical) prescriber". We believe this approach has much to be commended because quality standards are, indeed, informed through the unique values of each profession, including medicine (Dornan et al., 2009). However, we also recognise that a common set of competencies is required in order to underpin the quality of prescribing across all professional backgrounds. This was the rationale for developing the 'Single Competency Framework (SCF) for All Prescribers' (National Prescribing Centre, 2012). Formerly the National Prescribing Centre, and now incorporated into the National Institute for Health and Care Excellence, the Medicines and Prescribing Centre oversees the clinical guideline for medicines optimisation. Plans are in place to incorporate the SCF guiding principles in order to address the safety and effectiveness of medicines (National Institute for Health and Care Excellence, 2014; National Prescribing Centre, 2014). Its purpose is to enable prescribers to 'become and remain effective prescribers in their area of practice'. The framework design incorporates three domains embracing a total of nine competencies: A. The consultation (1,knowledge, 2, options and 3, shared decision-making), B. Prescribing effectively (4, always improving, 5, professional and 6, safe), C. Prescribing in context (7,self and others, 8, information and 9, the health care system). Designed to be used by any prescriber at any point in their career, the framework should be used to inform the

design and delivery of educational programmes and provide a basis for on-going continuing education.

Participants in the present study strongly advocated the need for CPD but there were mixed views with respect to their preference for specific modes or styles of learning. The convenience of using e-learning that enables learners to study outside of working hours at their own pace needs to be balanced against the benefits of being able to interact both with teachers and peers and to learn from their practical experience in real healthcare settings. From a learning perspective, face-to-face learning is desirable for non-medical prescribers because they benefit from interaction with colleagues and it ensures their learning is connected to a realistic clinical environment. Such experience, which is not easy to replicate in an on-line medium, is of considerable value for 'early career' non-medical prescribers because support from an experienced prescriber mentor ceases after registration. Another advantage of traditional teaching is that a process of reflection can be enhanced by social interaction with peers which is clearly also a source of support for non-medical prescribers (Savin-Baden and Howell-Major, 2004).

The literature does not present a clear case as to whether clinically specific training for health care professionals should be organised face-to-face or via e-learning. Variation in specialist clinical areas of responsibility and the extent to which allied health care professionals are working alone or within multi or interdisciplinary teams will clearly have important implications for preferred modes of learning. Courtenay et al. (2007) reported that 277 out of 868 (32%) non-medical prescribers stated that CPD was inaccessible. Difficulties in gaining support at an appropriate level for the practitioner as well as a lack of funding have been cited as barriers to undertaking CPD by nurses involved in the treatment of acute and chronic pain (Stenner & Courtenay, 2008). Unfortunately, in times of austerity, education budgets are often the first area to be considered in planned cost saving measures (Waite & Keenan

(2010). Under these circumstances, individual prescribers may feel obliged to maintain their prescribing competency in the absence of tangible support from an employer or professional body. This is a matter for NHS employers to address so that the quality of prescribing is sustained in accordance with the government's call for 'effective support, supervision and appraisal in the workplace' (Department of Health, 2013).

Sixty percent of respondents to a questionnaire survey preferred e-learning as a method of CPD (Courtenay & Gordon, 2009) which suggests that the logistics of taking time out of work to do CPD may be the greatest deterrent. It has long been established that unprotected learning time in the workplace can be a significant barrier (Stenner & Courtenay, 2008; Barriball & While, 1996). Indeed, this may explain why e-learning is perceived by doctors as being so advantageous. Lacey, Bryant & Ringrose (2005) confirm this view, stating that e-learning is preferred by General Practitioners partly because it reduces the need to spend time away from work on educational courses.

Taking these contrasting and challenging needs into account, we suggest that there is much to be gained by considering a blended-learning approach for non-medical prescribers. Blended learning has been defined as 'a combination of traditional teaching approaches and elearning' as distinct from e-learning per se which is: 'learning facilitated and supported through the use of information and communication technology' (MacDonald, 2008; Waite & Bingham, 2008; Sharpe, Benfield, Roberts & Francis, 2006). For example, advanced practice on-line modules at Masters level may be combined with face-to-face CPD workshops which offer a blended approach tailored to the needs of local learners, specific professional groups and patients. Utilising a personal "blog" via an online e-learning platform offers to capture learners' personal reflections (Richardson, 2010) and draws upon the experience of self-directed professional "buddying" (Shuttleworth, 2011).

The generalizability of findings derived from the present study is limited to some extent by the fact that the data arises from a single higher education institution where blended learning predominates in comparison with more traditional modes of teaching and learning. Further research would, therefore, be desirable with participants who have experienced modes of learning where a blended approach is not so dominant. Our findings would be enriched by conducting future research with a wider clientele of professional groups, for example to include medical staff and a wider range of professions allied to medicine.

Conclusion

Anxiety and lack of confidence in non-medical prescribing poses a significant challenge for CPD resulting from contrasting professional contexts, individual skill levels, work-place expectations and demands. There is a sense in which practitioners may feel isolated in their learning and, for some, there is a perceived expectation to consolidate their initial training by learning 'on the job'. Confidence and competency in prescribing is more likely to develop when there are supportive peer groups, mentorship and learning environments that are conducive to personal interaction. Working towards this goal, employers and the respective professional bodies of allied health care professionals may wish to consider how they might offer further support. Educators should also bear in mind that, in addition to covering prescribing in specific clinical conditions, legal and ethical issues surrounding prescribing may be equally important to non-medical prescribers. We, therefore, call for a more unified approach to CPD, for all prescribers, that, in future, embraces reflexive and self-supportive learning. Our findings suggest that there would be merit in developing greater collaboration with local academic higher education providers. The introduction of Masters level courses, sitting within professional advanced practice programmes, collaboratively with local National Health Service organisations, is one model that we believe would be well received. This kind

ACCEPTED MANUSCRIPT

CPD NEED OF NURSING AND ALLIED HEALTH PROFESSIONAL PRESCRIBERS 18

of approach would help to ensure that non-medical prescribers feel supported in their endeavours to raise the standards of safe prescribing.

Declaration of Interest

The authors report no declarations of interest.

References

Avery T., Barber N., Ghaleb M., Franklin BD., Armstrong S., Crowe S. ... Talabi., O. (2012). *Investigating the prevalence and causes of prescribing errors in general practice:* The PRACtICe Study (PRevalence And Causes of prescribing errors in general practiCe). A report for the GMC. Retrieved from: http://www.gmc-uk.org/Investigating_the_prevalence_and_causes_of_prescribing_errors_in_general_practice_mthe_prevalence_study_Reoprt_May_2012_48605085.pdf

Barriball K.L. and While A.E. (1996). *The similarities and differences between nurses with different career choice profiles: Findings of an interview survey*. Journal of Advanced Nursing, 23(2), pp380–388.

Bradley E., Campbell P. and Nolan P. (2005). *Nurse prescribers: who are they and how do they perceive their role?* Journal of Advanced Nursing. 51(5): pp439-448

Bradley E. and Nolan P. (2004). *The progress of nurse prescribing: a commentary*. Nurse Prescriber. 2: pp148–51.

Brown J. (2012). *Non-Medical Prescribing: A National Perspective*. Retrieved from: http://www.lsbu.ac.uk/business/docs/Docs%202012/NMP%20Pres%20Mar%202012/Jane%20Brown.pdf

Buck D. (2008). Exploring and overcoming the barriers to Non-Medical Prescribing. Advancing Practice in Bedfordshire. Volume 5 Number 1. Retrieved from: http://www.advancingpractice.co.uk/5(1)%20non%20medical%20prescribing.pdf >

Cohen L., Manion L., & Morrison K. (2007). *Research Methods in Education. Sixth Edition*. London and New York: Routledge.

Cooper R., Guillaume L., Avery T., Anderson C., Bissell P., Hutchinson A. ... Ratcliffe J. (2008). *Nonmedical Prescribing in the United Kingdom. Developments and Stakeholder Interests*. J Ambulatory Care Manage. Vol. 31: No3, pp244-252.

Courtenay M, Carey N. and Burke J (2007). *Independent extended nurse prescribing for patients with skin conditions: a national questionnaire survey*. Journal of Clinical Nursing. July 2007, Vol. 16: Issue 7, pp1247–1255

Courtenay M. and Gordon J. (2009). A survey of therapy areas in which nurses prescribe and *CPD needs*. Nurse Prescribing. 12 Jun 2009. Vol. 7: Iss. 6, pp255 – 262

Courtenay M. and Griffiths M. (2004). *Independent and Supplementary Prescribing. An Essential Guide*. UK: Greenwich Medical Media Ltd

Denscombe M. (2010). *The Good Research Guide: for small-scale social research projects*. Maidenhead: McGraw-Hill Open University Press.

Department of Health (1999). *Review of prescribing, supply and administration of medicines* (the Crown Report). London: Department of Health.

Department of Health (2002). Extending Independent Nurse Prescribing within the NHS in England. A guide for implementation. London: Department of Health.

Department of Health (2009). Allied health professions prescribing and medicines supply mechanisms scoping project report. London: Department of Health.

Department of Health (2010). Advanced Level Nursing: A Position Statement. London: Department of Health.

Department of Health (2013). Delivering high quality, effective, compassionate care: Developing the right people with the right skills and the right values. A mandate from the Government to Health Education England: April 2013 to March 2015. Report produced by Williams Lea for the Department of Health, London.

Dornan T., Ashcroft D., Heathfield H., Lewis P., Miles J., Taylor D. ... Wass V. (2009). An in depth investigation into causes of prescribing errors by foundation trainees in relation to their medical education - EQUIP study. Retrieved from: http://www.gmc-retrieved uk.org/about/research/research_commissioned_4.asp >

General Pharmaceutical Council (2010). Standards for continuing professional development. London: General Pharmaceutical Council.

Han WH. and Maxwell SRJ. (2006). Are medical students adequately trained to prescribe at the point of graduation? Views of First Year Foundation Doctors. Scott Med J. 51: pp27-32

Health Professions Council (2010). Information for registrants: Continuing Professional development and your registration. London: Health Professions Council.

Jiwa A., Ahmed A., Rivers P. and Ebrahim A. (2012). Educational and support needs of hospital prescribers on cardiology and respiratory wards. International Journal of Pharmacy Practice. 20: (Suppl.2), p22.

Lacey-Bryant S. and Ringrose T. (2005). Evaluating the Doctors.net UK model of electronic continuing medical education. Work Based Learning in Primary Care 3: pp129-142.

Latter S., Blenkinsopp A., Smith A., Chapman S., Tinelli M., Gerard K. ... Dorer, G. (2010). Evaluation of nurse and pharmacist independent prescribing. Department of Health Policy Research Programme Project 0160108. University of Southampton and Keele University. Retrieved from: http://eprints.soton.ac.uk/184777/3/ENPIPfullreport.pdf

MacDonald J. (2008). Blended Learning and Online Tutoring. Planning Learner Support and Activity Design. Second Edition. Hampshire: Gower Publishing Ltd

National Institute for Health and Care Excellence (2014). In Development. Clinical Guideline. Medicines optimisation: the safe and effective use of medicines to enable the best possible outcomes.http://www.nice.org.uk/Guidance/InDevelopment/GID-CGWAVE0676

National Prescribing Centre (2010). Non-Medical prescribing by nurses, optometrists, pharmacists, physiotherapists, podiatrists and radiographers. A quick guide for commissioners. Liverpool: National Prescribing Centre.

National Prescribing Centre (2011). 10 Top Tips for GPs. Strategies for safer prescribing. Liverpool: National Prescribing Centre.

 $http://www.npc.co.uk/improving_safety/improving_quality/resources/single_comp_framewor\ k.pdf>$

National Prescribing Centre (2014). *A single competency framework for all prescribers*. *Important Update*. Retrieved from:

http://www.npc.nhs.uk/improving_safety/improving_quality/index.php

Nursing and Midwifery Council (2006). *Standards of Proficiency for nurse and midwife prescribers*. London: Nursing and Midwifery Council.

Nursing and Midwifery Council (2008). *Guidance for Continuing Professional Development for Nurse and Midwife Prescribers*. London: Nursing and Midwifery Council.

Parahoo K. (1997). Nursing Research Principles, Process and Issues. London: Macmillon.

Picton C. and Wright H. (2012). *Keeping patients safe when they transfer between care providers – getting the medicines right.* Final Report. London: Royal Pharmaceutical Society

Richardson W. (2010). *Blogs, Wikis, Podcasts, and Other Powerful Web Tools for Classrooms*. Third Edition. California: Corwin

Royal Pharmaceutical Society of Great Britain (2006). *Professional Standards and Guidance for Pharmacist Prescribers*. London: Royal Pharmaceutical Society of Great Britain.

Savin-Baden M. and Howell-Major C. (2004). *Foundations of Problem-Based Learning*, Buckingham: Society for Research into Higher Education (SRHE) and Open University Press.

Sharpe R., Benfield G., Roberts G. and Francis R. (2006). The undergraduate experience of blended e-learning: a review of UK literature and practice. The Higher Education Academy. Retrieved from: <

 $http://www.heacademy.ac.uk/assets/documents/research/literature_reviews/blended_elearning_exec_summary_1.pdf>$

Shuttleworth A. (2011, June 6). "The Buddy Scheme". NICE shared learning. Retrieved from http://www.nice.org.uk/media/sharedlearning/105%20supporting%20information.pdf

Stenner K. and Courtenay M. (2008) *Benefits of nurse prescribing for patients in pain: nurses' views*. Journal of Advanced Nursing. 63: 1, pp27-55.

Waite M. and Keenan J. (2010). *CPD for Non-Medical Prescribers. A Practical Guide*. West Sussex: Wiley-Blackwell

Highlights

- Anxiety and lack of confidence in non- medical prescribing poses a significant challenge for CPD.
- Strategies that are most likely to improve prescribing confidence are through a blended learning approach.
- Local higher education and workplace employer collaboration is an appropriate step forward to ensure that non-medical prescribers feel supported in their endeavours to raise the standards of safe prescribing.