Non-Medical Prescribers’ Current Awareness Bulletin

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Facilitators and barriers to non-medical prescribing - A systematic review and thematic synthesis
Graham-Clarke, E; Rushton, A; Noblet, T; Marriott, J
PloS one; 2018; vol. 13 (no. 4); p. e0196471

Non-medical prescribing has the potential to deliver innovative healthcare within limited finances. However, uptake has been slow, and a proportion of non-medical prescribers do not use the qualification. This systematic review aimed to describe the facilitators and barriers to non-medical prescribing in the United Kingdom.

Clinical and cost-effectiveness of non-medical prescribing: A systematic review of randomised controlled trials.
Noblet, T; Marriott, J; Graham-Clarke, E; Shirley, D; Rushton, A
PloS one; 2018; vol. 13 (no. 3); p. e0193286

A review to evaluate the clinical and cost-effectiveness of non-medical prescribing.

Anticipatory prescribing of injectable medications for adults at the end of life in the community: A systematic literature review and narrative synthesis
Bowers, B; Ryan, R; Kuhn, I; Barclay, S
Palliative medicine; Feb 2019; vol. 33 (no. 2); p. 160-177

The anticipatory prescribing of injectable medications to provide end-of-life symptom relief is an established community practice in a number of countries. The evidence base to support this practice is unclear. This study reviews the published evidence concerning anticipatory prescribing of injectable medications for adults at the end of life in the community. It concludes that current anticipatory prescribing practice and policy is based on an inadequate evidence base. The views and experiences of patients and their family carers towards anticipatory prescribing need urgent investigation. Further research is needed to investigate the impact of anticipatory prescribing on patients' symptoms and comfort, patient safety, and hospital admissions.

Exploring perspectives around non-medical prescribing: An umbrella review
Jebra T.; Stewart D.; Cunningham S.; MacLure K.; Awaissu A.; Palli Valapila A.
International Journal of Clinical Pharmacy; Feb 2019; vol. 41 (no. 1); p. 383

Conference Abstract
Many countries have implemented nonmedical prescribing (NMP) and many others are scoping prescribing practices with a view to developing NMP. Thus, a comprehensive description of global published review articles around NMP has the potential to aid further development. This umbrella review aims to collate and summarise all the published reviews on NMP to provide insight on its future perspectives. The review identified seven systematic reviews, four protocols and 13 other types of reviews around influences on prescribing decision-making, processes of prescribing, and facilitators and barriers to implementation of NMP. Decision-
making was reported as complex with many, and often conflicting, influences. Reviews that explored patient outcomes reported NMP as equivalent to or better than physician prescribing. Facilitators of NMP included perceived improved patient care and professional autonomy, while barriers included lack of defined roles and resource pressures. While evidence of benefit and safety is essential to inform practice, for NMP to be implemented and sustained on a large scale, there needs to be clear commitment at the highest policy level. Challenges to NMP could be met by considering the theoretical basis for implementation, and robust and rigorous evaluation.

**Can cluster randomisation of prescribing policy be used to efficiently generate drug safety and effectiveness data within the NHS? Pilot data from the evidence study**

Rogers A.; Flynn A.; Doney A.; Flynn R.; McDonald
BMJ Evidence-Based Medicine; Jun 2018; vol. 23

**Conference Abstract:**
The Evaluating Diuretics in Normal Care (EVIDENCE) study aims to demonstrate whether a pragmatic cluster randomisation methodology, using existing NHS prescribing policies and mechanisms combined with routinely collected data, can be used to answer an important clinical question in the absence of head-to-head randomised trials. Changes in prescribing policy are rarely formally evaluated. In 2011, NICE hypertension guidelines included a recommendation that indapamide or chlorthalidone (thiazide-like diuretics) should be used in preference to bendroflumethiazide (thiazide diuretic) in the management of hypertension.1 This guidance has not been fully implemented. 70% of prescriptions for thiazide or thiazide-like diuretics dispensed in England in November 2017 were for bendroflumethiazide.2 Reasons for non-implementation may include inertia, drug pricing and availability. However, it is notable that many physicians felt that the guidance was based upon insufficient evidence. EVIDENCE will test a novel methodology for conducting comparative effectiveness research efficiently within the NHS. It is anticipated that this methodology will be applicable to the assessment of many diverse medications and interventions in current routine use where there is insufficient evidence to guide clinical practice.

**Barriers to and facilitators of the implementation and utilisation of independent non-medical prescribing: a mixed methods systematic review**

Noblet T.; Rushton A.; Graham-Clarke E.; Marriott J.
Physiotherapy (United Kingdom); Jan 2019; vol. 105

**Conference Abstract:**
To establish an evidence base identifying previously reported existing barriers to, or facilitators of, the implementation and/or utilisation of non-medical prescribing (NMP). Physiotherapist Independent Prescribing (PIP) was introduced in the United Kingdom in 2012, with the first physiotherapists qualifying in 2013. Given the contemporary nature of PIP, the effectiveness of prescribing in physiotherapy-specific settings has not yet been investigated. Effective implementation and utilisation
strategies must therefore be learnt from other professions. For physiotherapy to develop in this innovative field, barriers and facilitators to the successful implementation of PIP must be identified. The analysis and synthesis of this evidence is paramount to understand the factors acting to enable or block successful implementation of PIP. This knowledge may then be used to successfully navigate the implementation process. Barriers to, and facilitators of the implementation and utilisation of NMP demonstrate multifactorial and context specific variables within four explicit themes. It is clear that when factors are acknowledged and planned for they become facilitators, but when they are not, they may become barriers. The resulting NMP implementation framework may therefore be useful to aid the safe and successful implementation and utilisation of NMP.

Implications: Politicians, policy and healthcare managers, and clinicians internationally may use this framework when considering the introduction of physiotherapist prescribing.

**Impact of abolishing prescription fees in Scotland on hospital admissions and prescribed medicines: an interrupted time series evaluation**

*Williams, Andrew James; Henley, William; Frank, John*

*BMJ open; Dec 2018; vol. 8 (no. 12); p. e021318*

To identify whether the abolition of prescription fees in Scotland resulted in: (1) Increase in the number (cost to NHS) of medicines prescribed for which there had been a fee (inhaled corticosteroids). (2) Reduction in hospital admissions for conditions related to those medications for which there had been a fee (asthma or chronic obstructive pulmonary disease (COPD))—when both are compared with prescribed medicines and admissions for a condition (diabetes mellitus) for which prescriptions were historically free. This study did not find sufficient evidence that universal free prescriptions was a demonstrably effective or ineffective policy, in terms of reducing hospital admissions or reducing socioeconomic inequality in hospital admissions, in the context of a universal, publicly administered medical care system, the National Health Service of Scotland.

**ANTIMICROBIAL PRESCRIBING**

*Antimicrobial stewardship: an evaluation of structure and process and their association with antimicrobial prescribing in NHS hospitals in England*

*Scobie, Antonia; Budd, Emma L; Harris, Ross J; Hopkins, Susan; Shetty, Nandini*

*The Journal of antimicrobial chemotherapy; Apr 2019; vol. 74 (no. 4); p. 1143-1152*

To evaluate and score antimicrobial stewardship programmes (ASPs) in acute English NHS hospitals and determine association of ASP scores with antimicrobial prescribing. ASP structure and process were evaluated through an online survey in 148/152 acute hospitals in 2017. Scores were assigned to quality indicators based on resource- and labour-intensiveness, and their association with total and modified WHO-categorized ‘Access’, ‘Watch’ and ‘Reserve’ (AwaRe) prescribing was analysed.
Relationship between prescribing of antibiotics and other medicines in primary care: a cross-sectional study.
Li, Y; Mölter, A; White, A; Welfare, W; Palin, V; Belmonte, M; Ashcroft, D; Sperrin, M; van Staa, T
The British journal of general practice
Jan 2019; vol. 69 (no. 678); p. e42
High levels of antibiotic prescribing are a major concern as they drive antimicrobial resistance. It is currently unknown whether practices that prescribe higher levels of antibiotics also prescribe more medicines in general. This study was to evaluate the relationship between antibiotic and general prescribing levels in primary care. It found that the propensity of GPs to prescribe medications generally is an important driver for antibiotic prescribing. Interventions that aim to optimise antibiotic prescribing will need to target general prescribing behaviours, in addition to specifically targeting antibiotics.

Impact of Chief Medical Officer activity on prescribing of antibiotics in England: an interrupted time series analysis.
Walker, Alex J; Curtis, Helen J; Goldacre, Ben
The Journal of antimicrobial chemotherapy; Apr 2019; vol. 74 (no. 4); p. 1133-1136
Antimicrobial resistance is a growing problem, with the need for 'strong action' highlighted by the Chief Medical Officer for England in 2013, along with a 5 year antimicrobial resistance strategy. The authors set out to determine if there was a measurable impact from the 5 year antimicrobial resistance strategy on overall antibiotic prescribing in NHS primary care in England. They estimate that 9.7 million antibiotic prescriptions were prevented over the past year by the 5 year antimicrobial resistance strategy.

Adherence to antibiotic guidelines and reported penicillin allergy: pooled cohort data on prescribing and allergy documentation from two English National Health Service (NHS) trusts
Phillips, C; Gilchrist, M; Cooke, F; Franklin, B; Enoch, D; Murphy, M; Santos, R; Brannigan, E; Holmes, A
BMJ open; Mar 2019; vol. 9 (no. 2); p. e026624
To investigate documentation of antimicrobial allergy and to determine prescribing adherence to local antibiotic guidelines for inpatients with and without reported penicillin allergy treated for infection in a National Health Service context. A relatively high proportion of patients had a penicillin allergy and two thirds of these had no description of their allergy, which has important implications for patient safety. Patients with penicillin allergy treated for community-acquired pneumonia received more guideline adherent antibiotics than those without allergy. Future studies investigating the clinical impact of penicillin allergy should include data on adherence to antibiotic guidelines.

Antibiotic prescribing patterns in general medical practices in England: Does area matter?
Mölter, Anna; Belmonte, Miguel; Palin, Victoria; Mistry, Chirag; Sperrin, Matthew; White, Andrew; Welfare, William; Van Staa, Tjeerd
Health & Place; Sep 2018; vol. 53 ; p. 10-16
Antimicrobial resistance is an important public health concern. As most antibiotics are prescribed in primary care, understanding prescribing patterns in General Medical (GP) practices is vital. The aim of this study was a spatial pattern analysis of antibiotic prescribing rates in GP practices in England and to examine
the association of potential clusters with area level socio-economic deprivation. The pattern analysis identified a number of hot and cold spots of antibiotic prescribing, with hot spots predominantly in the North of England. Spatial regression showed that patient catchments of hot spot practices were significantly more deprived than patient catchments of cold spot practices, especially in the domains of income, employment, education and health. This study suggests the presence of area level drivers resulting in clusters of high and low prescribing. Consequently, area level strategies may be needed for antimicrobial stewardship rather than national level strategies.

_A national quality incentive scheme to reduce antibiotic overuse in hospitals: evaluation of perceptions and impact_

*Islam, J; Ashiru-Oredope, D; Budd, E; Howard, P; Walker, A S; Hopkins, S; Llewelyn, M J*  
_The Journal of antimicrobial chemotherapy; Jun 2018; vol. 73 (no. 6); p. 1708-1713_

In 2016/2017, a financially linked antibiotic prescribing quality improvement initiative Commissioning for Quality and Innovation (AMR-CQUIN) was introduced across acute hospitals in England. This aimed for >1% reductions in DDDs/1000 admissions of total antibiotics, piperacillin/tazobactam and carbapenems compared with 2013/2014 and improved review of empirical antibiotic prescriptions. The objective of this study was to assess perceptions of staff leading antimicrobial stewardship activity regarding the AMR-CQUIN, the investments made by hospitals to achieve it and how these related to achieving reductions in antibiotic use. Introducing the AMR-CQUIN was associated with a reduction in antibiotic use. For individual hospitals, achieving the AMR-CQUIN was associated with favourable perceptions of staff and not availability of funding.

_Antibiotic prescribing for residents in long-term-care facilities across the UK_

*Thornley, T; Ashiru-Oredope, D; Normington, A; Beech, E; Howard, P*  
_The Journal of antimicrobial chemotherapy; Jan 2019_

Elderly residents in long-term-care facilities (LTCFs) are frequently prescribed antibiotics, particularly for urinary tract infections. Optimizing appropriate antibiotic use in this vulnerable population requires close collaboration between NHS healthcare providers and LTCF providers. The aim was to identify and quantify antibiotic prescribing in elderly residents in UK LTCFs. This is part of a wider programme of work to understand opportunities for pharmacy teams in the community to support residents and carers. Whilst national data sets on antibiotic prescribing are available for hospitals and primary care, this is the first report on antibiotic prescribing for LTCF residents across all four UK nations, and the largest reported data set in this setting. Half of LTCF residents were prescribed at least one antibiotic over the 12 months, suggesting that there is an opportunity to optimize antibiotic use in this vulnerable population to minimize the risk of AMR and treatment failure. Pharmacy teams are well placed to support prudent antibiotic prescribing and improved antimicrobial stewardship in this population.
AUTISTIC SPECTRUM DISORDERS

Considering autistic spectrum disorders in the context of clinical nurse prescribing
Hayes, Catherine; Alcorn, Lisa; Graham, Yitka
Nurse Prescribing; Nov 2018; vol. 16 (no. 11); p. 534-540

This article provides an insight for clinical nurse prescribers who may have limited knowledge of the implications of autistic spectrum disorder (ASD) on their practice. It will provide an insight into the common characteristics of the condition, alongside an overview of contextual and situational issues of direct relevance to sensory overload and underload. Through this, awareness is raised of how specific adaptations to practice might be made to support and empower those people living with the condition, and their families and carers. The need for individualised, holistic care is emphasised alongside information of specific relevance to the practicalities of nurse prescribing in practice. The article also outlines the issues of polypharmacy and pharmacotherapy of relevance to patients with ASD and the precursors to these, which can be readily identified in practice.

COMMUNITY CARE

Non-Medical Prescribing By HVs.
Rippon, Rebecca; Massey, Alan
Community Practitioner; Mar 2019; vol. 92 (no. 2); p. 45-47

The article presents a study which described health visitors' experiences of non-medical prescribing (NMP) within the provision of primary preventative care. Common themes that emerged from the participants studied include the limitations of the formulary, continuing professional development, and lack of resources issued by the trust to facilitate NMP as a barrier to prescribing.

The health professional experience of using antipsychotic medication for dementia in care homes: A study using grounded theory and focussing on inappropriate prescribing
Almutairi, Saleh; Masters, Kate; Donyai, Parastou
Journal of psychiatric and mental health nursing; Jun 2018; vol. 25 (no. 5-6); p. 307-318

People with dementia can experience symptoms that upset them and upset the people who care for them. To cope, care homes sometimes use antipsychotics but these can make people with...
dementia become more ill. When patients with dementia present with behavioural and psychological symptoms, the prescribing of antipsychotics allows the multitude of work in a care home to be managed; the effectiveness of antipsychotics is more perceptible than their side-effects. This perceived usefulness strengthens beliefs that these medications ought to be prescribed again in future situations, generating a self-fulfilling prophecy.

**DIABETES**

**Time trends and geographical variation in prescribing of drugs for diabetes in England from 1998 to 2017**

Curtis, H; Dennis, J; Shields, B; Walker, A; Bacon, S; Hattersley, A; Jones, A; Goldacre, B

Diabetes, obesity & metabolism; Sep 2018; vol. 20 (no. 9); p. 2159-2168

To measure the variation in prescribing of second-line non-insulin diabetes drugs.

In England there is extensive geographical variation in the prescribing of diabetes drugs after metformin, and increasing use of higher-cost DPP-4 inhibitors and SGLT-2 inhibitors compared with low-cost sulphonylureas. The findings strongly support the case for comparative effectiveness trials of current diabetes drugs.

**Emerging UK infections: identifying new threats early**

Mark Greener
Prescriber; March 2019

Predicting which new and emerging pathogens will pose a threat to the UK population can be difficult. This article discusses the steps Public Health England and other government agencies are taking to identify new threats and protect the public against emerging infections.

**INFECTIONS**

**NON-STEROIDAL ANTI-INFLAMMATORY DRUGS**


Chen, Ying; Bedson, John; Hayward, Richard A; Jordan, Kelvin P

Family practice; Jul 2018; vol. 35 (no. 4); p. 426-432
Objective: To determine trends in NSAIDs prescribing between 2002 and 2010 in patients with CVD, and ascertain whether prescribing patterns changed following publication of major national (the Medicines and Healthcare products Regulatory Agency (MHRA) and the National Institute for Health and Clinical Excellence (NICE)) guidance to GPs.

Conclusion: Despite guidelines and a trend toward decreased prescribing, the use of potentially harmful NSAIDs continued in CVD patients. The MHRA directives potentially might have affected patients without CVD who may have inappropriately restricted their use of COX-2.

NURSE EDUCATION

Preparing pre-registration nurses to be ‘prescriber ready’: Aspirational or an achievable reality?
Prydderch, S
Nurse education today; Apr 2019; vol. 78; p. 1-4

The Nursing and Midwifery Council (NMC), the professional body for U.K. registered nurses, midwives and nursing associates has recently proposed future nurses should be ‘prescriber ready’, in a move to ensure the nursing workforce can prescribe medicines soon after registration. Considering this, the educational preparation requirements for future nurses requires consideration, particularly where it is incumbent on the University, or NMC Approved Educational Institution (AEI), to prepare nurses with sufficient knowledge and skills to enter an NMC approved non-medical prescribing programme from the point of registration. This paper explores the new NMC educational and practice standards for nurses and the potential infrastructures required of the AEI where there is a responsibility under the NMC to develop a new, more progressive generation of ‘prescriber ready’ nurse. Excitingly, Universities and nurse educators are now tasked with ensuring future nurses can safely demonstrate an amalgam of nursing care, fusing traditional nursing expertise with skills which once remained the exclusive responsibility of the doctor, thus creating a new generation of hybrid practitioners.

OLDER PEOPLE

Non-medical prescribing on a nurse consultant-led elderly care ward
Wang, Q
Nurse Prescribing; Nov 2018; vol. 16 (no. 11); p. 566-566

Independent prescribing is an essential component of delivering cohesive care to patients. The author describes the challenges and benefits of her role as a non-medical prescriber and a nurse consultant.

ONCOLOGY

Statin use and survival in patients with gastric cancer in two independent population-based cohorts.
Spence, A; Busby, J; Hughes, C; Johnston, B; Coleman, H; Cardwell, C
Pharmacoepidemiology and drug safety; Nov 2018
Preclinical studies show statins inhibit pathways involved in gastric cancer progression, with observational studies demonstrating reduced gastric cancer risk in statin users. However, few studies have investigated statin use and survival in gastric cancer. The authors investigated statin use and survival in two large population-based gastric cancer cohorts. In two independent UK cohorts, there was some evidence that statin use was associated with reduced cancer-specific mortality. However, these associations were weak in magnitude and did not follow a clear dose response, and the authors cannot rule out confounding by stage.

**PALLIATIVE CARE**

*Characterising the growth in palliative care prescribing 2011-2015: Analysis of national medical and non-medical activity*

Ziegler, L; Bennett, M; Mulvey, M; Hamilton, T; Blenkinsopp, A

Palliative Medicine; Apr 2018; vol. 32 (no. 4); p. 767-774

The role of non-medical prescribers working in palliative care has been expanding in recent years and prescribers report improvements in patient care, patient safety, better use of health professionals' skills and more flexible team working. Despite this, there is a lack of empirical evidence to demonstrate its clinical and economic impact, limiting our understanding of the future role of non-medical prescribers within a healthcare system serving an increasing number of people with palliative care needs. Aim: We developed a unique methodology to establish the level of non-medical prescribers’ activity in palliative care across England and consider the likely overall contribution these prescribers are making at a national level in this context in relation to medical prescribing.

Setting/participants: All prescriptions for 10 core palliative care drugs prescribed by general practitioners, nurses and pharmacists in England and dispensed in the community between April 2011 and April 2015 were extracted from the Prescribing Analysis Cost Tool system. Design: The data were broken down by prescriber and basic descriptive analysis of prescription frequencies by opioid, non-opioids and total prescriptions by year were undertaken. To evaluate the yearly growth of non-medical prescribers, the total number of prescriptions was compared by year for each prescribing group. Results: Non-medical prescribers issued prescriptions rose by 28% per year compared to 9% in those issued by medical prescribers. Despite this, the annual growth in non-medical prescribers prescriptions was less than 1% a year in relation to total community palliative care prescribing activity in England. Impact on medical prescribing is therefore minimal.

**PHARMACY**

*The pharmacy care plan service: Evaluation and estimate of cost-effectiveness.*

Twigg, M; Wright, D; Barton, G; Kirkdale, C; Thornley, T

Research in social & administrative pharmacy : RSAP; Jan 2019; vol. 15 (no. 1); p. 84-92

The UK Community Pharmacy Future group developed the Pharmacy Care Plan (PCP) service with a focus on patient activation, goal setting...
and therapy management. This study was to estimate the effectiveness and cost-effectiveness of the PCP service from a health services perspective. The conclusions were that enrolment in the PCP service was generally associated with an improvement over 12 months in key clinical and process metrics. Results also suggest that the service would be cost-effective to the health system even when using worst case assumptions.

**Preparation for future non-medical prescribing roles: Survey analysis of pharmacy trainee’s perceptions in the prescribing safety assessment pilot**

Davison K.; Hardisty P.J.; Statham L.; Fleming G.; Hambleton P.; Maxwell S.; Bollington L.

*International Journal of Pharmacy Practice; Apr 2018; vol. 26; p. 23*

**Conference Abstract:**
The role of non-medical prescribing is becoming increasingly important and we must adequately prepare pharmacy trainees to undertake this role; this has been explored across multiple sites using the Prescribing Safety Assessment. The aim was to assess whether pharmacy trainees perceived current MPharm and Pre-registration training curriculums as adequate preparation for the Prescribing Safety Assessment (PSA) and to examine what scope of prescription writing practice students have had during their training.

Final year MPharm and preregistration pharmacist trainees undertook an abridged Prescribing Safety Assessment 1 from March to May 2017. This aimed to assess the equivalent level of knowledge and skill as the PSA exam undertaken by final year medical students, differing in assessment length (reduced number of questions) with some modified content. Six regional pre-registration providers (London and South East, East of England, Thames Valley, East Midlands, Yorkshire and Humber, and North East) and seven schools of pharmacy (Bradford, Durham, Keele, Manchester, Nottingham, Portsmouth and Sunderland) recruited final year pharmacy undergraduate students and pre-registration pharmacy trainees with both hospital and community pharmacy employers to take part. Consent was obtained from candidates and full ethical approval was gained from the University of Sunderland. On completion of the exam, candidates were asked to complete a standard feedback form provided by the PSA team. Thematic analysis was applied to free-text comments and quantitative data collated.

Feedback was obtained from 1059 candidates, (response rate 94%). 42% of candidates (n = 445) agreed or strongly agreed that their pharmacy course had prepared them to undertake the PSA whilst 27% (n = 289) felt it had not; the remaining having a neutral opinion. 78% (n = 822) of candidates reported having written less than five prescriptions throughout their pharmacy training. Thematic analysis of free-text comments obtained in response to the questions ‘were any particular items [on the assessment] unclear or unreasonably difficult?’ and ‘do you have any comments regarding the PSA or prescribing education?’ revealed three emerging themes: (i)
Relevance of the assessment to pharmacy trainees (ii) Content and breadth of pharmacy training (iii) Clinical experience and exposure. Stakeholders involved in the planning and delivery of pharmacy education may find the results from the candidate feedback from the PSA pharmacy pilot enlightening and could potentially use this insight to inform future curriculum content and in practice training. The majority of pharmacy trainees claimed to have only had the opportunity to write less than five prescriptions in their 4 or 5 years of training at the point the assessment was undertaken. The marked differences in responses may be explained by trainees interpreting "writing on a prescription chart" variably ranging from simulation through to direct observation. Furthermore, there appeared to be a lack of understanding of the relevance of prescribing for pharmacy trainees, both from the perspective of them directing others to prescribe (e.g. medical prescribers) and as potential future non-medical prescribers themselves. There is scope to improve the preparation and awareness of pharmacy students for future prescribing roles.

Factors influencing interprofessional collaboration between community pharmacists and general practitioners—A systematic review
Bollen, A; Harrison, R; Aslani, P; van Haastregt, J
Health & Social Care in the Community; December 2018; ePub ahead of print.

Effective interprofessional collaboration is critical for sustaining high quality care in the context of the increasing burden on primary healthcare services. Despite this, there is limited understanding of the factors contributing to effective collaboration between general practitioners and community pharmacists. The aim of this systematic review was to identify the factors that impact on interprofessional collaboration between general practitioners (GPs) and community pharmacists (CPs). Keywords and synonyms were combined and applied to four databases (EMBASE, CINAHL, SCOPUS, and MEDLINE) to identify articles published between January 2000 to April 2017. Relevant journals and reference lists were also hand-searched. A total of 37 articles met the eligibility criteria. Factors that posed a challenge to effective interprofessional collaboration were the perceived imbalance in hierarchy and power between the professions and a lack of understanding of each other's skills and knowledge. Experience of collaboration with the other party led to greater understanding of each other's capabilities and potential role in co-delivering patient care. The physical environment was also identified as important, with co-location and other resources to facilitate clear and regular communication identified as important facilitators of interprofessional collaboration. The review findings highlight a range of approaches that may positively influence interprofessional collaboration between GPs and CPS such as co-location, co-education to understand the professional capabilities of each group, and utilising compatible technologies to facilitate communication between the two professions.
PHYSIOTHERAPY

Emerging evidence on the scope and safety of physiotherapy prescribing practice in the UK
Paterson, R
Journal of Prescribing Practice; Jan 2019; vol. 1 (no. 1); p. 14-15

The author provides an overview of recently published articles that may be of interest to non-medical prescribers.

PRESCRIBING IN PRACTICE

Classic e-Delphi survey to provide national consensus and establish priorities with regards to the factors that promote the implementation and continued development of non-medical prescribing within health services in Wales
Courtenay, M; Deslandes, R; Harries-Huntley, G; Hodson, K; Morris, G
BMJ open; Sep 2018; vol. 8 (no. 9); p. e024161

To provide national consensus and establish priorities with regards to the factors that promote the implementation and continued development of non-medical prescribing within health services. This list of factors and actions should provide guidance to managers and commissioners of services wishing to initiate or extend non-medical prescribing. This information should be considered internationally by other countries outside of the UK wishing to implement prescribing by non-medical healthcare professionals

How do nurse prescribers demonstrate prescribing proficiency?
Diggle J.
Diabetes and Primary Care; May 2018; vol. 20 (no. 2); p. 81-85

In the second of an occasional series of articles to help members of the multidisciplinary team better understand the roles and responsibilities of colleagues, Jane Diggle clarifies the different types of non-medical prescriber and how ongoing competence must be demonstrated in these roles.

Further advances in non-medical prescribing: paramedic prescribing.
Rovardi, D
Journal of Prescribing Practice; Jan 2019; vol. 1 (no. 1); p. 10-10

Changes to the Human Medicines Regulations, allowing paramedics to independently prescribe, marks a pivotal step in the progression of the profession. Here, David Rovardi discusses the implications and challenges this will present

Benefits and pitfalls of nurse independent prescribing in medical aesthetics
Newson, C
Journal of Aesthetic Nursing; Sep 2018; vol. 7 (no. 7); p. 386-388

Many nurses enter into the aesthetic profession without the non-medical prescribing (V300) qualification, relying on their relationship with another prescribing practitioner to enable them to administer prescription-only drugs. With talk of evolving regulation within the aesthetics sector, prescribing has become a topic of importance for aesthetic nurse practitioners. This article aims to discuss the benefits of non-medical prescribing in aesthetic practice while also outlining the possible drawbacks.
Influences on noteworthy prescribing decisions by non-medical prescribers: A qualitative exploration

McIntosh T.; Stewart D.; Forbes-McKay K.; McCaig D.; Cunningham S.

International Journal of Pharmacy Practice; Apr 2018; vol. 26; Issue S1; p. 22

Conference Abstract:
Non-medical prescribers (NMPs) are making increasing contributions to patient care; their prescribing decision making is subject to complex and contradictory influences [1]. The aim was to explore and describe influences on NMPs' prescribing decisions which they considered noteworthy. Seven pharmacist prescribers and five nurse prescribers working in community pharmacy and primary and secondary care in one Scottish Health Board area, treating acute and long-term conditions, were participating in a wider programme of research into influences on their prescribing [1]. They were given digital recorders and asked to identify and reflect on one or two of their prescribing decisions which they considered noteworthy in some way. No other guidance was given on the reflection. Recorders were returned to the research team and reflections transcribed verbatim. Individual semi-structured interview schedules were prepared based on each reflection, the Theoretical Domains Framework (TDF)[2] and findings from earlier research[1]. Participants were interviewed at their workplaces by a trained researcher and the interviews recorded, transcribed verbatim and analysed thematically by two independent researchers. Earlier findings including the domains of the TDF were used as the initial coding framework. Approval was received from a university ethics committee and NHS Research and Development department; NHS Ethic's approval was not required. Participants recorded 24 reflections on noteworthy prescribing decisions; subsequent interviews lasted between 5 and 33 minutes. Participants described most of their decisions as involving vulnerable patients, multiple morbidities, lack of information and/or the need for creative thinking to optimise patient outcomes. Decisions ranged from treatments of long-term conditions to an acute life-threatening medicine-related event and often involved multidisciplinary working. Several concerned antibiotic prescribing. Knowledge of the condition, the patient and of medicines were important influences. Participants described using a range of skills, particularly communication skills but also physical assessment and calculation skills, and balancing complex, conflicting responsibilities. Participants' roles as nurses, pharmacists and prescribers were also influential as were previous experiences. Participants valued the opportunity as prescribers for more direct patient care but reported being acutely aware of attendant additional responsibilities. Beliefs about the consequences of their prescribing decisions for patients and for others were influential; participants put patients at the heart of their prescribing decision-making. They described taking a careful, rigorous and step-wise approach although heuristics played a part in familiar situations and previous experience was important. Most reflections evidenced participants feeling very capable and competent in prescribing but they were aware of their
limitations and knew when to seek help from other members of the multidisciplinary team, in primary care most often from GPs. The social influence of patients and occasionally patients' families was sometimes important: demands for antimicrobials were hard to resist. The medical hierarchy was problematic for one participant. NMPs' noteworthy prescribing decisions were subject to multiple influences; complexity was a feature and an influence in many. While findings in this small-scale study may not be transferrable they endorse NMPs' prescribing practice but suggest that additional education and training may be needed to support evidence-based antimicrobial prescribing.

**Perceptions of ePortfolio adoption in a non-medical prescribing programme**

*Bell, S*

*Nurse Prescribing; Aug 2018; vol. 16 (no. 8); p. 390-395*

This article focuses on initial findings from a small study considering students' and staff's perceptions of the future adoption of an ePortfolio summative assessment. Findings suggest there remains misapprehension around the terminology used to define ePortfolio, which may lead to heightened anxiety within the post-qualifying NMP student population. Overall, students and staff had positive perceptions of the future adoption of ePortfolio as an enhancement of the existing portfolio summative NMP assessment. Several themes emerged.

**E-prescribing: A qualitative study of socio-technical issues arising from medical and non medical prescribers in an English hospital.**

*Cox, A.R.; Alshahrani, F.; Marriott, J.F.*

*Research in Social & Administrative Pharmacy; Aug 2018; vol. 14 (no. 8)*

Conference abstract.

**Nurses drive the evolution of non-medical prescribing.**

*Lotto, R*

*British Journal of Cardiac Nursing; Jun 2018; vol. 13 (no. 6); p. 266-267*

The author discusses news and information about a project with Dr. June Crown on the expansion of nursing roles through the development of non-medical prescribing, with topics mentioned including the Royal College of Nursing, Department of Health and Social Care, and the British National Formulary.

**PRIMARY CARE**

**Independent prescribing in primary care: A survey of patients’, prescribers’ and colleagues’ perceptions and experiences.**

*Hindi, A; Seston E; Bell D; Steinke D; Willis S; Schafheutle EI*

*Health & social care in the community; Mar 2019*

As part of an evaluation for independent prescribing funded training, this study investigated views and experiences of IPs, their colleagues and patients about independent prescribing within primary care. Findings from this study were mainly positive but indicate a need for policy strategies to tackle longstanding barriers to independent prescribing. However, a larger sample size is needed to confirm findings.
**REPEAT PRESCRIBING**

**Long-Term Costs and Health Consequences of Issuing Shorter Duration Prescriptions for Patients with Chronic Health Conditions in the English NHS**

*Martin, A; Payne, R; Wilson, Ed*  
*Applied health economics and health policy; Jun 2018; vol. 16 (no. 3); p. 317-330*

Recently, GPs in England have been urged to limit the duration of repeat prescriptions, where clinically appropriate, to 28 days to reduce wastage and hence contain costs. However, shorter prescriptions will increase transaction costs and thus may not be cost saving. Furthermore, there is evidence to suggest that shorter prescriptions are associated with lower adherence, which would be expected to lead to lower clinical benefit. The objective of this study is to estimate the cost-effectiveness of 3-month versus 28-day repeat prescriptions from the perspective of the NHS. It concludes that longer repeat prescriptions may be cost-effective compared with shorter ones. However, the quality of the evidence base on which this modelling is based is poor. Any policy rollout should be within the context of a trial such as a stepped-wedge cluster design.

**SAFETY**

**Prescribing in 2019: what are the safety concerns?**

*Coleman, J*  
*Expert opinion on drug safety; Feb 2019; vol. 18 (no. 2); p. 69-74*

Unintended harm from prescribing errors remains a prevalent concern in healthcare leading to significant morbidity and mortality around the world. Prescribers face new challenges to their practice in modern times such as increasingly complex health-care systems, an aging population with increasing multimorbidity, and rapid growth in the number of novel medicines. Areas covered: Prescribing concerns in modern practice are outlined based on seminal literature in this area and the author’s continual academic oversight of this topic. Major UK and international reports have been used to highlight the important emerging issues in prescribing, and focused literature searches performed to highlight key papers supporting this review. Expert opinion: Whilst there are many ways to consider mitigating the risk of harm from prescribing, it is suggested that a tripartite approach is required. Patients and carers are essential partners in the process and shared decision-making has replaced paternalistic practice in achieving joint prescribing decisions. Comprehensive and coordinated care is critical to avoid fragmented care and poor transfer of prescribing information. Lastly, a whole systems approach is crucial to ensure that all prescribers are supported (and not overwhelmed) when making safe, effective and timely

**To prescribe or not to prescribe: enhancing safety in remote prescribing**

*Shepherd, A*  
*Journal of Prescribing Practice; Vol 1 no 3*

From time to time, it may be appropriate to use a telephone, or other non-face-to-face medium to prescribe medicines and treatment for patients. Non face-to-face media include telephone, fax,
email, video link, or websites. The aim of this article is to identify and discuss clinical situations in which remote prescribing is acceptable, with an onus on safety. Broadhead (2011) proposes that the medical guidance for remote prescribing is analogous for other health professionals, including nurses and midwives who prescribe remotely using different forms of technology. Therefore, these guidelines will be referred to throughout this article.

**COCHRANE REVIEWS**

**Phosphodiesterase 5 inhibitors for pulmonary hypertension - UPDATE**

Authors' conclusions

- Data from this review suggest a benefit for the use of PDE5 inhibitors in group 1 PAH, for improvement in WHO functional class, reduction in clinical worsening, and improvement in haemodynamics, six-minute walk distance, quality of life, and mortality.
- Sildenafil, tadalafil and vardenafil are all efficacious in this clinical setting.
- Clinicians may wish consider the side-effect profile for each drug when choosing which to prescribe to an individual patient.
- This review suggests that a PDE5 inhibitor may be better than an ERA for six-minute walk distance and quality of life, but that there appears to be no difference in WHO functional class or mortality. These conclusions are limited by the small number of trials.

- While there appears to be some benefit for the use of PDE5 inhibitors in PH-LHD, it is not clear based on the mostly small, short-term studies which type of left-heart disease stands to benefit. The use of PDE5 inhibitors does not appear to be beneficial in valvular heart disease.
- This review suggests there is no clear benefit for PDE5 inhibitors in pulmonary hypertension secondary to lung disease or CTEPH.
- There may be evidence of harm in the use of PDE5 inhibitors for pulmonary hypertension secondary to sickle cell disease.

**Adverse events in people taking macrolide antibiotics versus placebo for any indication**

Authors' conclusions: The macrolides as a group clearly increased rates of gastrointestinal adverse events. Most trials made at least some statement about adverse events, such as "none were observed". However, few trials clearly listed adverse events as outcomes, reported on the methods used for eliciting adverse events, or even detailed the numbers of people who experienced adverse events in both the intervention and placebo group. This was especially true for the adverse event of bacterial resistance.

**Methotrexate for psoriatic arthritis**

Authors' conclusions: Low-quality evidence suggests that low-dose oral methotrexate may be more effective than placebo when taken for six months in terms of disease response (PsARC), function, pain, and patient and physician global assessments of disease activity. The effect size for
each of these outcomes is small. Research shows no clinically important differences with respect to disease response (ACR20), disease activity (DAS28-ESR), tender and swollen joint counts, or skin disease. Methotrexate is generally well tolerated in this population. Neither effects of methotrexate on health-related quality of life, radiographic progression, enthesitis, dactylitis, and fatigue, and its efficacy beyond six months, nor effects of higher-dose methotrexate have been adequately studied in a placebo-controlled trial.

With the exception of leflunomide, head-to-head data are inadequate to inform comparison versus other DMARDs, including biologic DMARDs. Data comparing methotrexate versus leflunomide are of very low quality, such that we do not believe they provide clinically meaningful information, and we do believe they should be interpreted and applied with extreme caution. Very low-quality evidence suggests that methotrexate may be as effective as leflunomide when taken for six months and is generally well tolerated, although very few adverse events have been reported and its comparative safety is uncertain. The comparative efficacy of methotrexate in terms of health-related quality of life, disease activity, radiographic progression, enthesitis, dactylitis, and fatigue, along with its efficacy beyond six months, has not been studied in a placebo-controlled trial.

**Betahistine for tinnitus**

Authors’ conclusions: There is an absence of evidence to suggest that betahistine has an effect on subjective idiopathic tinnitus when compared to placebo. The evidence suggests that betahistine is generally well tolerated with a similar risk of adverse effects to placebo treatments. The quality of evidence for the reported outcomes, using GRADE, ranged from moderate to very low.

If future research into the effectiveness of betahistine in patients with tinnitus is felt to be warranted, it should use rigorous methodology. Randomisation and blinding should be of the highest quality, given the subjective nature of tinnitus and the strong likelihood of a placebo response. The CONSORT statement should be used in the design and reporting of future studies. We also recommend the development of validated, patient-centred outcome measures for research in the field of tinnitus.

**Long-term antibiotics for preventing recurrent urinary tract infection in children**

Authors’ conclusions: Long-term antibiotics may reduce the risk of repeat symptomatic UTI in children who have had one or more previous UTIs but the benefit may be small and must be considered together with the increased risk of microbial resistance.

**Oral H1 antihistamines as ‘add-on’ therapy to topical treatment for eczema**

Authors’ conclusions: Based on the main comparisons, we did not find consistent evidence that H1 AH treatments are effective as 'add-on' therapy for eczema when compared to placebo; evidence for this comparison was of low and moderate quality. However, fexofenadine
probably leads to a small improvement in patient-assessed pruritus, with probably no significant difference in the amount of treatment used to prevent eczema flares. Cetirizine was no better than placebo in terms of physician-assessed clinical signs nor patient-assessed symptoms, and we found no evidence that loratadine was more beneficial than placebo, although all interventions seem safe. The quality of evidence was limited because of poor study design and imprecise results. Future researchers should clearly define the condition (course and severity) and clearly report their methods, especially participant selection and randomisation; baseline characteristics; and outcomes (based on the Harmonising Outcome Measures in Eczema initiative).

**Inhaled steroids with and without regular salmeterol for asthma: serious adverse events**

Authors' conclusions: We did not find a difference in the risk of death or serious adverse events in either adults or children. However, trial authors reported no asthma deaths among 27,951 adults or 8453 children randomised to regular salmeterol and ICS or ICS alone over an average of six months. Therefore, the risk of dying from asthma on either treatment was very low, but we remain uncertain about whether the risk of dying from asthma is altered by adding salmeterol to ICS. Inclusion of new trials has increased the precision of the estimates for non-fatal SAEs of any cause. We can now say that the worst-case estimate is that at least 152 adults and 139 children must be treated with combination salmeterol and ICS for six months for one additional person to be admitted to the hospital (compared to treatment with ICS alone). These possible risks still have to be weighed against the benefits experienced by people who take combination treatment. However more than 90% of prescribed treatment was taken in the new trials, so the effects observed may be different from those seen with salmeterol in combination with ICS in daily practice.

**Alpha-glucosidase inhibitors for prevention or delay of type 2 diabetes mellitus and its associated complications in people at increased risk of developing type 2 diabetes mellitus**

Authors' conclusions: AGI may prevent or delay the development of TZDM in people with IGT. There is no firm evidence that AGI have a beneficial effect on cardiovascular mortality or cardiovascular events.

**Inositol for subfertile women with polycystic ovary syndrome**

Authors' conclusions: In light of available evidence of very low quality, we are uncertain whether MI improves live birth rate or clinical pregnancy rate in subfertile women with PCOS undergoing IVF pre-treatment taking MI compared to standard treatment. We are also uncertain whether MI decreases miscarriage rates or multiple pregnancy rates for these same women taking MI compared to standard treatment. No pooled evidence is available for use of MI versus placebo, another antioxidant, insulin-sensitising agents, ovulation induction agents, or another type of inositol for women with PCOS undergoing pre-treatment to IVF. No
pooled evidence is available for use of MI in women undergoing ovulation induction.

**Corticosteroids as adjunctive therapy in the treatment of influenza**

Authors' conclusions: We found one RCT of adjunctive corticosteroid therapy for treating people with community-acquired pneumonia, but the number of people with laboratory-confirmed influenza in the treatment and placebo arms was too small to draw conclusions regarding the effect of corticosteroids in this group, and we did not include it in our meta-analyses of observational studies. The certainty of the available evidence from observational studies was very low, with confounding by indication a major potential concern. Although we found that adjunctive corticosteroid therapy is associated with increased mortality, this result should be interpreted with caution. In the context of clinical trials of adjunctive corticosteroid therapy in sepsis and pneumonia that report improved outcomes, including decreased mortality, more high-quality research is needed (both RCTs and observational studies that adjust for confounding by indication). The currently available evidence is insufficient to determine the effectiveness of corticosteroids for people with influenza.

**AND FINALLY...**

**Prescription legibility: bigger might actually be better.**

Fallaize, R; Dovey, G; Woolf, S

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Drug errors are common and can be detrimental to patients, even resulting in death. Junior doctors write most prescriptions and are therefore responsible for most errors. There is little literature about the effect of legibility of the prescriber's handwriting on the rate of drug errors. Folklore would deem doctors' handwriting to be poorer than average; however, studies have shown this to be incorrect. In fact, handwriting in general has been shown to be poor. A random sample of prescriptions from inpatient drug charts were chosen to provide a wide spread of legibility, with an even spread of the use of upper-case and lower-case lettering. Two cohorts of 13 junior doctors and 13 non-medical controls were recruited and asked to transcribe each of the prescriptions. Results were analysed for evidence of a statistical difference in correct transcription rate between lower-case or upper-case letters. Non-medical participants correctly transcribed only 45% of prescriptions written in lower case. This rose to 66.5% for those written in upper case. This showed strong statistical significance, p<0.005. A statistical difference was also shown for differences in transcription by junior doctors (92.3% vs 97.8%, p=0.016). Doctors must take responsibility for the quality of the prescriptions they write, to prevent avoidable drug errors. Legibility is improved by the use of capital letters. Therefore, we recommend that the use of upper cases should become routine practice when writing drug prescriptions.
NATIONAL GUIDANCE [NICE]

Nice Guidelines  Evidence-based recommendations on a wide range of topics, from preventing and managing specific conditions to planning broader services and interventions to improve the health of communities.

Quality Standards  Quality standards set out the priority areas for quality improvement in health and social care. They cover areas where there is variation in care. Each standard gives you: a set of statements to help improve quality information and measure progress.

Technology appraisals  Technology appraisals are recommendations on the use of new and existing medicines and treatments within the NHS.

Clinical Knowledge Summaries  These have prescribing information within them relating to specific conditions/diseases and the drugs administered/considered for treatment. The latest major updates can be found here.

Medicines and Prescribing  Guidance, advice and support for delivering quality, safety and efficiency in the use of medicines. Includes information about evidence summaries designed to help commissioners and budget holders make the right decision about the introduction of new medicines, provides information into how the best available evidence is summarised for licensed, off-label and unlicensed medicines.

British National Formulary  Available in digital & print for health and social care professionals.

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- students who are studying on NHS-commissioned courses such as medicine or nursing.

NICE Bites—THE LATEST NICE BITES

NICE Bites  is a monthly prescribing bulletin from the North West Medicines Information Centre which summarises key prescribing points from NICE guidance.

UKMI [UK medicines information] newsletters

New Medicines Newsletter March 2019
New Medicines Newsletter February 2019
New Medicines Newsletter January 2019

MHRA
The Medicines and Healthcare products Regulatory Agency regulates medicines, medical devices and blood components for transfusion in the UK. It is an executive agency, sponsored by the Department of Health and Social Care.

Drug Safety Updates

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